

## Study on quality assessment of child health care services in a district of Assam


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**Introduction:** Children less than five years of age is a critical indicator of the wellbeing of children. In order to reduce infant as well as under-five mortality rate of children, Govt of India has initiated different health programmes as well as recommended Indian Public Health Standards for health care facilities to provide quality health care. **Objective:** To assess the quality of child health care services at health care facilities at primary and secondary level. **Methodology:** A cross-sectional study had been conducted at CHCs, PHCs and S/Cs in Kamrup district of Assam. The data had been collected by quality assessment checklists and exit interview with the clients availing the child health services at the health care facilities. **Results:** The quality of child health care services was assessed by using a system approach-inputs, process and outputs. There were only 66.66% availability of Obstetrics & gynaecology specialist and paediatrician. Physician were available in 33.33% of CHCs. The availability of trained personals was found to be inadequate in all the CHCs and PHCs. Most of the equipments and supplies were available in all the health care facilities. The child health care activities in areas of immunization and cold chain maintenance was found to be satisfactory. **Conclusion:** The quality of child health care services was found to be average at primary and secondary level.

**Keywords:** Child health, Quality of Care, Infant Mortality Rate, Quality

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## Introduction

Each year 27 million children are born to India. Around ten percent of them do not survive to 5 years of age. India contributes to 25 percent of the over 6.9 million under-five deaths occurring worldwide every year. The quality of human resources of any country is largely determined by the quality of the child development services [1]. India is still lagging behind ideal health conditions as seen from infant mortality rate and under five mortality rate of 47/1000(2010) and 59/1000 live birth (SRS-2010) [2].

India has tried to cope up with these problems by formulating various national health programmes and strategies for prevention and control of under five mortality rates. The quality of care was emphasized at the International meeting organized by WHO in Almaty in 1998 to celebrate 20 years of the Alma-Ata Declaration [3]. Responsiveness, which is one of the three intrinsic goals of a Health system, could also be regarded as a measure of the quality of care.

Health care quality assessment and improvement has become a growing issue in health care system of all countries. Quality influences both health status and satisfaction. The quality of care generally means the degree of excellence of the medical care delivered. Quality is achieved when accessible services are provided in an efficient, cost-effective and acceptable manner. Quality is achieved when the needs and expectations of the customer are met [4].

Patient's satisfaction is an important part of health care. It is also a measure of quality of care. Avedis Donabedian (1966; 1980) [5] described quality as including: structure (viewed as the capacity to provide high quality care), process (often termed as performance) and outcome.

As studies on child health care quality was not done previously in this region, the present study had been proposed to be carried out in Kamrup district of Assam to assess the quality of child health care services at primary and secondary level and to identify the weakness so that the appropriate measures might be taken to provide responsive and effective care to every child.

## Methodology

**Study Design:** Cross-sectional study

**Study Area & Sampling procedure:** The study had been undertaken in Kamrup District of Assam covering various health institutions from CHCs, PHCs and Sub-centre during one-year period. From total numbers of nine CHCs & twelve PHCs, 30 percent of CHCs and 40 percent of PHCs had been selected randomly for the study. From each PHCs, two sub centres had been selected randomly based on their distance from the PHC, one within five kilometres and the other situated more than five kilometres from the selected PHCs.

### Study Instruments

01. Quality Assessment Checklists for CHC/PHC.
02. Quality Assessment Checklists for Sub-centres.
03. Exit Interview with the clients availing the child health care services.

**Study Population:** The study population comprised of:

01. Health care provider (MO, ANM/LHVs) and laboratory technicians.
02. Health care seekers (mothers of children of 0-5yrs of age availing the child health care services.
03. Records.

### Study variables

01. Staffing pattern/Manpower.
02. Availability of equipments and supplies.
03. Child health care quality.
04. Providers' availability.

**Data Collection Method:** The data had been collected by periodical visits to the selected health care facilities (CHC, PHC & S/cs). The information was collected from those facilities by the following procedures-

01. Inputs from records.
02. Interviews of the health personnel (MO, ANM/LHV, Lab technician etc).
03. Observation method.

**Assessment of Quality Services-** The quality of the health care facilities were assessed following the conceptual framework proposed by Donabedians (1980) three major aspects of quality of care [5]-

01. Service inputs
02. Service process
03. Service output.

**Service Input-** The service input comprised of infrastructures, drugs & supplies, provider’s availability( skilled/ trained), and availability of protocols/ guideline.

**Service Process-** It includes the technical quality of service counselling (providing the clients with important information in an acceptable way) and procedure of delivery of services. It was assessed by an observational proforma (Checklists for CHC/ PHC & S/C).

**Service Output-** It includes the clients satisfaction level availing the child health care services at the Community health centres and Primary health centres. The interview schedule was prepared from Operational Manual of Quality Assurance for District Reproductive and Child health services in Public health system.

In the present study, for client satisfaction had been assessed by exit interview on the basis of 12 point scale & scoring system for positive responses. Based on the number of positive responses, services were categorized as ‘very good’ 10-12points graded as A; ‘good’ 7-9points as B; ‘average’4-6points graded as C; and ‘poor’ 1-2points graded as D.

The data had been collected by exit interview in the OPDs using pretested & predesigned structured schedule. The child health services include ARI, diarrhoea, immunization and others. Three clients were interviewed for each service area in each of the facility. Thus, a total 96 clients were interviewed for client satisfaction.

Category	Grade	Score
Very good	A	10-12
Good	B	7-9
Average	C	4-6
Poor	D	1-3

**Statistical Analysis:** The statistical analysis was carried out by using percentages.

## Results

The role of health manpower in determining the quality of health care is now increasingly appreciated. There were only 66.66% availability of Obstetrics & gynaecology specialist and paediatrician. Physician were available in 33.33% of CHCs. None of the CHCs had the available surgeon in position. Anaesthetist were available in 2 of 3 CHCs. The MOs were available in all the CHCs. Other supporting manpower including staff nurses, pharmacists/ compounder, lab.

Technicians were available in all the CHCs. In most of the PHCs, the MOs were available. The Ayush/ Homeo doctors were available only in 60% of the PHCs. The other supporting staffs were also available in all the PHCs (Table No1).

In the present study, all the S/Cs had the available health worker (F)/ANM. None of the S/Cs had the available health worker (M) (Table No2).

All the health care facilities had proper arrangement for the segregation of wastes generated at the facilities. This was probably due to implementation of Infection Management & Environment Plan (INEP) for Reproductive and child health programme (Phase-II).under Govt. of India, Deptt. of Family Welfare, MOHFW,2004.(Table No3).

Table No4 shows the distribution of CHCs and PHCs according to the availability of essential amenities for the clients’ comfort. When patients experience high-quality health care and their health improves, they generally feel more satisfied. Scientific evidence indicates the reverse is also true; increased client satisfaction can lead to better health outcomes.

The table shows that all the CHCs and PHCs had the waiting areas for the clients in covered/ shaded areas. The drinking water facilities were also available in all the health care facilities. Toilet facilities for women were available ai all the CHCs and 60% of PHCs. A separate labour / delivery room with curtains in windows and doors were available in all the CHCs and PHCs.

Table No 5 shows availability of infection prevention supplies at CHCs and PHCs. All the health care facilities had available infection prevention supplies.

Table No 6 shows the immunization service delivery at CHCs, PHCs & S/Cs. In the present study, the child health care quality had been assessed only by observing immunization service delivery which included activities on immunization service, vaccination supplies and cold chain management.

It had been observed that all the CHCs, PHCs& S/Cs had well maintained the immunization service delivery. The post immunization advice regarding side effects and follow-up were observed in only 66.66% of CHCs and 60% of PHCs. The vaccines logistics and supplies were available in all the health care facilities. The cold chain were also well maintained in all the health care facilities.

The advice on immunization and follow-up visits as well as updated/ completed immunization card was also found to be 100% at all the S/Cs. The drop out rates were also traces by the ANM. Anganwadi workers and ASHA also were found to be participated during the immunization sessions at all the Sub-centres.

Table No 7 shows the distribution of CHC and PHC according to the availability of equipment and supplies. From the table, it had been observed that the availability of BP apparatus with stethoscope and weighing machine (adult/ infant) were available to all the CHCs and PHCs. The autoclave/ boiler were available in 66.66% of CHCs and 60% of PHCs.

The complete delivery kits were available in all the CHCs and PHCs. The sterile MVA syringes were available in 66.66% of CHCs and none of the health care facilities had the available EVA. The paediatric resuscitation kits were available in all the CHCs and PHCs.

Table No 8 shows the distribution of clients satisfaction on child health care services at Primary health care centres. The shows that the satisfaction level of clients on child health i.e on ARI 03as 'very good' and 08 as 'good'; on diarrhoea 'very good' 01,'good'12; and 'average' 07;on immunization 'very good'06, as good'12, as 'poor'02; on others 'very good'05, as 'good'04.

So, out of 60 clients 11 had' very good 'level of satisfaction, 36 had 'good', 07 had 'average' and 02 had 'poor' level of satisfaction on child health care services at Primary health care centres.

**Table No-1: Distribution of Manpower at the CHCs and PHCs.**

Manpower or Staff	No of CHC N=3	No of PHC No =5(%)
Specialists—obs/gynae.	2	-
Paediatrician	2	-
Physician	1	-
Surgeon	0	-
MOs---MBBS	3	5
Staff nurse—GNM/PHN	3	5
Pharmacists/Compounder	3	5
Laboratory technician	3	5

**Table No-2: Distribution of Manpower at the Sub-centre**

Name of staff/manpower	No of Sub-centre(n=10)	Availability of manpower
ANM/Health worker(F)	10	10

Health worker(M)	0	0
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**Table No 3: CHC and PHC according to the Cleanliness**

Cleanliness of the facility	CHC(n=3) No (%)	PHC (n=5) No (%)
General cleanliness	3	3
Proper arrangements for segregation of wastes generated at the facility	3	5

**Table No-4: Distribution of CHC and PHC according to the availability of Essential Amenities for the clients**

Availability of essential amenities for the clients comfort	CHC(n=3) No (%)	PHC(n=5) No (%)
Waiting area has benches in covered/shaded areas	3(100)	5(100)
Drinking water available for the clients	3(100)	5(100)
All occupied beds have mattresses, rubber cover & clean bed sheet	3(100)	3(60)
Toilet facilities for women	3(100)	3(60)
A labour separate room/ delivery room with separate curtains on door & windows for privacy	3(100)	5(100)

**Table No-5: Availability of Infection Prevention Supplies at CHC and PHC.**

Name of infection prevention supplies	CHC (N=3) No (%)	PHC (N=5) No (%)
Surgical & utility gloves	3(100)	5(100)
Bleaching powder, plastic buckets, mugs, soap & mops	3(100)	5(100)
Surgical attires	3(100)	5(100)

**Table No-6: Distribution of Health care facilities on Immunization service delivery (CHC,PHC & S/C).**

Child health care activities immunization service delivery	CHC(n=3) (%)	PHC(n=5) (%)	S/C(n=10) (%)
Immunization session conducted as planned	3(100)	5(100)	10(100)
Measles vaccines administered at 9-12 months of age	3(100)	5(100)	8(80)
Sterile needle not touched by hand or swab during the injection process	3(100)	5(100)	10(100)
Needle cutter or puncture proof box used for disposing syringes	3(100)	5(100)	10(100)
Vaccine carrier kept closed during the immunization sessions	3(100)	5(100)	10(100)
Post immunization advice regarding side effects and follow up visits	2(66.66)	3(60)	10(100)
Immunization card up dated or completed for each child after administering the vaccines	3(100)	5(100)	10(100)
Vaccines logistics and supplies	3(100)	5(100)	10(100)
Cold chain management	3(100)	5(100)	10(100)

Anganwadi & Asha participated in outreach sessions	-	-	10(100)
Drop-out cases were traced & vaccine provided	3(100)	5(100)	10(100)

**Table No-7: Availability of Equipment and Supplies at CHC and PHC.**

Availability of equipments & supplies	CHC (n=3) No (%)	PHC (n=5) No (%)
BP apparatus & stethoscope	3(100)	5(100)
Adult & infant weighing machine	3(100)	5(100)
Autoclave/boiler in working condition (kerosene stove)	2(66.66)	3(60)
Complete delivery kits/DDK	3(100)	5(100)
Sterile MVA syringe	2(66.66)	0(0)
Functional EVA available	0(0)	0(0)
Paediatric resuscitation kits	3(100)	5(100)
Suction apparatus	3(100)	3(60)
Sufficient No.s of syringes & needles	3(100)	5(100)
Oxygen cylinder with tubing wrench & disposable masks	3(100)	2(40)
Sterile suturing tray	3(100)	5(100)

**Table No-8: Distribution of client satisfaction on Child health care services at Primary Health Centre**

Category	Scores (12 points scale)	ARI	Diarrhoea	Immunization	Others	Total
Very good	10-12	3	1	6	5	15
Good	7-9	8	12	12	4	36
Average	4-6	-	7	-	-	07
Poor	1-3	-	-	2	-	02
Total		11	20	20	09	60

## Discussion

The role of health manpower in determining the quality of health care is now increasingly appreciated. There were only 66.66% availability of Obstetrics & gynaecology specialist and paediatrician. Physician were available in 33.33% of CHCs. According to Facility Survey (2003), reported that the specialist Obs/gynaecologist (51%) and paediatrician (54%) were available at CHCs in India.

The staff nurse (83%), pharmacists (81%) and laboratory technicians (87%) were available at CHCs in India. The National Commission on Macroeconomics and Health Survey (2005) showed that in CHCs alone, there is a shortfall of 62% sanctioned posts of specialists and of the remaining 38% are lying vacant.

Kapilashrami MC observed [6] that doctors, if posted doctor prefer to sit in their private clinics even during working hours.

Government has not been able to ensure that doctors and nurses where posted remain available at their headquarters for their service to the people. Satpathy S K (2005) [7], reported the vacancy position of four specialists in the CHCs range from 40-50% and that surgeons and O&G specialists without an anaesthetist are not in position to deliver the required surgical interventions.

There is an acute shortage of anaesthetists in the country. In the present study showed that all the sub-centres had available health worker (F)/ANM. None of the S/Cs had the available health worker (M). According to Facility Survey (2003), reported 95.1% health worker (F) in position and 67.7% health worker (M) were available from no of health facility having sanctioned post.

Agarwal K. et al (1994) [8] reported that the ratios of various health care providers such as MOs, PHN, health visitors, ANMs to populations were not fulfilling the Government recommended ratios. So concluded that the health care providers therefore were unable to cater optimum services to the beneficiaries. In this study, all the health care facilities had proper arrangement for the segregation of wastes generated at the facilities.

This was probably due to implementation of Infection Management & Environment Plan (IMEP) for Reproductive and Child health programme (phase II) under Government of India Deptt. of Family Welfare, MOHFW, 2004. By Ray SK [9] in his study in three districts of West Bengal also reported the general cleanliness of the facility at BPHC and Sub-centre were poor.

According to In CLEN study (2002-03) reported that waste segregation was being done only at 6.2% of health facilities at country level. Gupte M., Bandeswar S and Pisal H (1999) [10], reported in their studies that cleanliness is an important criterion for general health care and deliveries.

In the present study, it had been observed that all the health care facilities had waiting areas with benches in covered/ shaded areas and available drinking water facility for the clients. 75% of the health facilities had the beds with mattresses, rubber cover and sheets for the clients. Toilet facilities for women were available in all the CHCs and 60% of PHCs.

As goal of health system is customer satisfaction, which WHO refers to the health systems responsiveness.

Health systems have to be responsiveness to the needs of the customer satisfaction and the community [11]. Ray SK (2004-05) reported in his study that inadequate waiting space and unusable toilets at BPHC and S/C level in three districts in West Bengal.

Agarwal M et al (2001) in their study reported that the facility of separate room for consultation was totally absent in rural areas and at health posts. According to Facility Survey (2003), reported that 31% had separate LR, 55% had separate toilet with running water, 56.1% had drinking water facility at CHC level.

At FRUs, 53.3% separate aseptic L.R, 62.6% separate toilet with running water and 50.9% of water facility. In the present study at PHCs level only 60% facilities had bed with mattresses, rubber cover and sheets for the clients. At all India level (2003, facility survey), reported 48.4% having LR, 66.5% water supply, 52.3% toilet facility and 71.3% had at least one bed at PHCs.

In Assam, 85.02% having water supply, 56.21% LR facility, 37.59% and 41.70% having at least one bed at PHCs (Facility Survey, 2003). The toilet facility and curtain on windows to ensure privacy for the clients comfort had been observed in 70% of the Sub-centres in this study. None of the S/Cs had the electricity facility with backup.

The sitting arrangements and drinking water facilities were available in all the S/Cs. By facility survey 2003, reported 78.8% having drinking water facility, 73.6% toilet facility, 43.1% had electricity facility at S/Cs level. In the present study, the infection prevention supplies at CHCs and PHCs were available. Sharma P et al [18] also in their study reported non-availability of disposable gloves and antiseptic solutions at the health facilities.

In the present study, it had been observed that all the CHCs and PHCs had well maintained the immunization service delivery. The post immunization advice regarding side effects and follow up were observed in only 66.66% of CHCs and 60% of PHCs. The vaccines logistics and supplies were available in all the health care facilities.

Agarwal M et al, 2004 reported only 30% of clients were advised about importance of completing vaccination schedule in comparison to 73.3% among urban clients, only 2/3rd clients were reminded about the next visit.

Similar findings reported by Gulati et al<sup>17</sup>, that a greater proportion of mothers of rural area as compared to that of urban areas were ignorant about the benefits of immunization.

Aswar et al [12] also reported mothers were not knowing the importance of immunization and immunization schedule. Perrey H [13] et al 1998 in their study for assessment of quality of immunization service found that the knowledge of immunization schedule of health worker was good. Steer land PH et al (1999) 12 in their study found that immunization cards were absent in many of the centres in Bangladesh.

Availability of an immunization document is the best proof of the child being immunized K Suresh (2000) [19]. Cutts F T et al 1990, [15] in their study observed that only half of the clients whose children were vaccinated were informed about the vaccine reactions or about the name of the vaccine received. Full course of potent vaccines given at right age and at right interval, by right technique with a valid documentation constitutes the quality criteria for vaccination services (Tapare VS, Borle PS 2006) [16].

At the S/cs, the immunization service delivery also found to be satisfactory. The advice on immunization and follow up visits as well as updated immunization card was also found to be 100% at all the S/cs. The drop out rates were also traced by the ANM. Anganwadi workers and ASHA also were found to be participated during the immunization sessions at all the Sub-centres. In the present study, the availability of equipments and supplies such as BP apparatus and stethoscope, infant and adult weighing machine were available in all the CHCs and PHCs.

The autoclave/ boiler were available in 66.66% of CHCs and 60% of PHCs. The complete delivery kits were available in all the CHCs and PHCs. The sterile MVA syringes were available in 66.66% of CHCs and none of the PHCs. The functional EVA syringes were not available in the health care facilities. The paediatric resuscitation kits were available in all the health care facilities. The suction apparatus were available in all the CHCs and 60% of the PHCs.

The oxygen cylinder with tubing wrench, disposable masks were available in all the CHCs and only 40% of PHCs. In the present study, it had been observed that 90% of S/Cs had BP apparatus and stethoscope and 100% of weighing machine were available at S/Cs.

None of the S/C s had the available supply of paediatric resuscitation kit, labour table, step stool. In a study conducted by Agarwal M et al in 2001, stated that only 66.66% had stethoscope and BP instruments, weighing machine available at S/cs.

By facility survey 2003, reported 86.7% & 84.9% had infant & adult weighing machine, 65.9% BP apparatus, 79.5% stethoscope available at S/Cs in India. Steefland et al (1999) 14 in a multicounty study for assessment of EPI services found shortages of needles in two out of seven centres and syringes in four out of seven centres in Phillipines. The assessment of client satisfaction is inevitably subjective, because of educational, social, economic and linguistic differences between health professional and their clients.

The perception of quality varies from person to person according to individual's knowledge, values and resources (Humberto de Novaes, 1993). In this study, most of the patients were satisfied with child health care services at the health care facilities. By B S Akoijam et al (2007) [21] reported that most of the patients were satisfied with overall care received by the health care provider at the tertiary care hospital.

By Banerjee B (2003) [20] in their study found that the main deficiency regarding days and timing of the availability of specific services and the location of different service outlets within the centre by the clients.

## Conclusion

The present study concluded that the quality of child health services were average at CHCs, PHCs and S/C level. The child health care activities that observed at the CHCs and PHCs in areas of immunization services and cold chain maintenance was found to be satisfactory.

**Recommendation:** Based on the studies the following findings are recommended-

- The infrastructure gap of S/C,PHC,CHC should be met.
- Available untrained manpower should be trained and vacancy should be filled-up.
- There must be periodical orientation of medical as well as paramedical staffs at the health care facilities.

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