

Evaluation of input and process components of quality of child health services provided at 24 × 7 primary health centers of a district in Central Gujarat

Paragkumar Chavda¹, Shobha Misra²

¹Department of Community Medicine, Gujarat Medical Education and Research Society Medical College, Gotri, Vadodara,

²Department of Preventive and Social Medicine, Baroda Medical College, Vadodara, Gujarat, India

ABSTRACT

Context: With the critical Indian challenge on child survival and health, time is ripe to initiate focus on quality of services apart from measuring coverage, to bring about improvements. **Aims:** To assess the quality of child health services provided at 24 × 7 Primary Health Centers of Vadodara District in Gujarat in terms of Input and Process Indicators. **Settings and Design:** The study was carried out in 12 randomly chosen 24 × 7 Primary Health Centers (PHCs) of Vadodara district using a modified quality assessment checklist of the Program on District Quality Assurance for Reproductive and Child Health (RCH) services with use of scores from May 2010 to June 2011. **Subjects and Methods:** Inputs assessment was done by facility survey. Process assessment for the four child health service components used actual observation of service, review of records and interview of service providers and clients. **Results:** The mean obtained score for facilities in Input section was 65%. Highest score was obtained for Drugs and Consumables (86%) followed by Equipments and Supplies (74%). The score obtained for Infrastructure facility was 65%, Personnel and training was 56% and Essential protocols and guidelines scored 43%. The mean obtained score in the process section was 55%. Highest scores were obtained for immunization at 76%. This was followed by newborn care (52%), growth monitoring (52%), management of sick child (41%). **Conclusion:** Quality improvement efforts should focus not only on resource-intensive structural improvements, but also on cost-effective measures at improving service delivery process, especially adherence to service guidelines by providers.

Keywords: 24 × 7 PHC, child health services, Gujarat, quality of health care

Introduction

India is faced with a critical challenge in the area of child survival and health. The decline in Infant mortality rate has considerably slowed down in last two decades with the neonatal mortality being an emerging challenge.^[1] Traditionally the health-care programs, including those on child health, have focused on the coverage of the services. However, improvement in child survival and health would require attention to the quality of services as well.

Lately programs systematically addressing quality of care have been piloted such as District Quality Assurance Program for Reproductive Health Services in Gujarat and Program on Quality Assurance for District Reproductive and Child Health (RCH)

Services at the national level under the Monitoring and Evaluation strategy of RCH II.^[2,3]

Although studies evaluating individual service components of child health program in different settings have been done in India, there are few studies on systematic assessment of Quality of Child Health Services as a whole using a quality assessment framework.^[4-6] Systematic assessment of the services uses scores to measure the quality as a whole and thus helps in program monitoring and tracking of improvements over a period of time. Largely, these earlier studies have not covered the component of Newborn care at the Primary Health Centers (PHCs) which has become important now with increasing institutional deliveries.^[4-6]

Hence there is a need to document the status of the quality of comprehensive child health services provision. This study assesses the quality of child health services provided at 24 × 7

Access this article online

Quick Response Code:



Website:
www.jfmpc.com

DOI:
10.4103/2249-4863.161315

Address for correspondence: Dr. Paragkumar Dhirajlal Chavda, A-201, Shubham Residency, Near Gajanand Park, Gotri, Vadodara - 390 021, Gujarat, India.
E-mail: paragchavda@gmail.com

PHCs of Vadodara District in Gujarat comprehensively covering newborn-care, immunization, management of sick child and growth monitoring services.

Subjects and Methods

The study was carried out in Vadodara District which is situated in the eastern-central part of Gujarat. The district is divided in 12 blocks (eight rural and four tribal). The District has a total of 76 PHCs. Of these, 29 PHCs are functioning as 24 × 7 PHCs (19 Rural and 10 tribal). A facility which is designated as a 24 × 7 PHC is one which is equipped for providing round-the-clock delivery services and new born care, in addition to all the other emergencies that any PHC is required to cater to.^[7] One 24 × 7 PHC, from each block, was randomly selected for the study. Hence a total of twelve 24 × 7 PHCs were included in the study sample. Study period was from May 2010 to June 2011.

This study used Donabedian Model for quality assessment which is divided into three parts; Structure (Input), Process and Output.^[8] Out of the three, this study has focused on Input and Process assessment. The ways of assessment of Output can be by assessing the changes in morbidity and mortality profile, utilization of services or in terms of patient satisfaction. This study has used the framework of the District Quality Assurance for RCH Services Program.^[3] Within the program output has been defined as change in the utilization rates of services every quarterly over period of time. The scope of this study was only taking a cross-sectional view of the quality of services. Hence we have been able to include only input and process components. The tools for assessment were a modified form of the PHC Quality assessment checklists used in this Quality Assurance Program, necessary modifications being made after a pilot study in two PHCs. Scores given to each of the items in the checklist ranged from one to maximum three based on the relative importance of the item. A high score (3) was given to the items which were considered very essential, a middle score (2) was given to those that were necessary, and a lower score (1) to those that were either less important or were one of the many components necessary for providing a particular service. For example in input section the item on availability of a functional PHC vehicle (with driver) was given score of 3 because of its importance in transport of patients. If vehicle was available but driver was not available the obtained score on this item was considered to be zero for that PHC. The scores were added up at the end to get the total score for each sub-section. Weighted mean was used to arrive at the total section scores.

Inputs assessment

The Inputs assessment was done by Facility Survey of the selected PHCs including physical verification of the availability and functioning of items where needed as explained below.

Provider's availability and training

This included interviewing the facility staff about availability of Medical Officer (MO) and the paramedical staff and their training.

Infrastructure

This included observation of the facility for maintenance of cleanliness and availability of physical infrastructure, basic amenities and information and communication services at the facilities.

Essential protocols and guidelines

This assessment included availability of guidelines on different child health service components at the facility at the point of use.

Equipments

This assessment included physical verification of the availability and functioning of the equipments required for the child health services.

Supplies of drugs and other consumables

This assessment included physical verification of the availability of the drugs and consumables for the child health services.

Process assessment

Separate checklists were used for process assessment of the different components of Child Health services.

The checklist to study Newborn care component was based on the Essential Newborn Care Guidelines.^[9] It was divided into two sections with equal weightage of the assessment scores. The first section involved review of records of newborn-care services at selected PHCs. The second section involved observation and interview of the mother for in-patient newborn care for three newborns at each PHC. Delivery register of PHC was accessed and the last three recently delivered mothers were selected for interview.

National Guidelines for Immunization were used for assessment of immunization services.^[10,11] First section of assessment included Process observation of the immunization services during the immunization session (known as Mamta Divas in Gujarat) at PHCs for five children by systematic random sampling. Thus, a total of 60 children were observed for immunization services. The second section included assessment of cold chain management at the selected PHCs.

As Vadodara district is one of those districts where trainings on Integrated Management of Neonatal and Childhood Illness (IMNCI) has been implemented we used IMNCI guidelines for assessment of management practices for sick child at the selected PHCs.^[12] Assessment involved review of IMNCI forms filled by MOs at the PHC during the month preceding the visit. Five forms, each for Sick Young Infant (0–2 months) and Sick Child (2 months to 5 years) category, were assessed.

Growth monitoring was assessed by observation of the growth monitoring and counseling services provided by Female Health Workers (FHW) or Anganwadi workers for children up to 2 years of age during the Mamta Divas session at studied PHCs. Guidelines on Growth Monitoring for Mamta Divas were used for assessment.^[13] A total of 60 children, five from each of the 12 selected PHCs were observed.

Method of collection of relevant information for the process section included actual process observation, review of records and interview of the service providers and beneficiaries. During this entire exercise it was ensured that there was no disruption to the ongoing patient care services. All the observations for this assessment were made by single observer at all PHCs.

All the procedures followed were in accordance with the ethical standards of the institutional ethical committee. All the staff members interviewed/observed for actual process of service provision were informed about the purpose of the study beforehand and their consent taken. The mothers interviewed in the study were explained about the purpose of the study and consent was taken before starting the interview.

For assessment of IMNCI the actual process observation of management of sick child could not be done and the assessment was based on review of records. The actual assessment could have given more idea about the actual practices for management of sick child.

The classical models of quality assessment also include assessment of outcomes which was not attempted in the current study as this would have entailed a large community based survey for community awareness and services utilization.

For immunization and growth monitoring assessment, actual service provision was observed which may have introduced participation bias as the providers behavior may change in presence of an observer.

Results

The following are the findings of the Input and process assessment in the selected twelve 24 × 7 PHCs.

Input assessment

The obtained scores for various elements of Input section are shown in Table 1. Overall the mean obtained score was 65% of the maximum possible for the Input section.

The element of personnel and training received 56% score. 6 PHCs were manned by single MBBS Medical Officer (MO), another 2 by AYUSH MOs whereas remaining four had both MBBS and AYUSH MO. Out of the total 12, only half of the PHCs had a MO (MBBS) available round the clock. Though all

Table 1: Scores for the elements of input section

Elements of input section	Mean obtained score (%)	Maximum Score
Personnel and training	6.8 (56)	12
Infrastructure and facilities	13.9 (65)	21
Essential protocols and guidelines	6.8 (43)	16
Equipments and supplies	20.3 (74)	28
Drugs and consumables	43 (86)	50

medical officers were trained in IMNCI, none were trained in essential newborn care.

A paramedical person for emergency obstetric and newborn care was available at 11 of the 12 PHCs. However, a Staff Nurse was present at only six of the PHCs, of which four had only one staff nurse available against the requirement of three. Moreover these staff nurses were also expected to perform duties other than RCH services. At the PHCs where there were no staff nurses, the obstetric and newborn care services were being provided with the help of FHWs, who were put on rotating Labor Room (LR) duties. At two places male candidates were appointed as Staff Nurses and did not contribute to service delivery as practically the LHV or FHWs were attending the deliveries at these places. With regard to training, only one PHC had paramedical staff trained in essential newborn care.

The obtained score for Infrastructure was at a moderate 65%. In this element, the score for cleanliness was 58% whereas that of the essential amenities was high at 94%. Other essential facilities scored 52% while the information and communication facilities scored 75%. With regard to the transport services at PHCs, it was found that only four of the 12 PHCs had their own Ambulance and driver whereas the others were utilizing 108 services for sending the patient to the referral center.

The element on Essential Protocols and Guidelines obtained only 43% score which was lowest among all elements of Inputs section. The IMNCI guidelines were available at 8 out of 12 PHCs. While the guidelines on Mamta Divas, immunization chart, growth chart, as well as waste management and hand washing guidelines were available at only half to one third of the PHCs. Essential newborn care (ENBC) guideline was available at none of the PHCs.

The full equipments for growth monitoring were available at seven out of 12 PHCs while complete examination tray for IMNCI was available at only one PHC. All equipments for newborn-care were available at two third of PHCs except radiant warmers which were available at only two PHCs. Equipments for cold chain were available at almost all of the centers. The overall score for equipments was higher at 74%.

The element on drugs and consumables obtained 86% score which was the highest score among all elements of Inputs section. All IMNCI drugs and vaccines were available at nearly all PHCs.

However, only half of the PHCs had disinfectant available at the point of use.

Process assessment

The obtained scores for four child health services are shown in Table 2. Overall the mean obtained score was 55% for the process section.

Newborn care

All PHCs had cleanliness maintained in labor room. The skilled attendance at birth was poor as only four PHCs used detailed case sheets for newborn while none had records of APGAR score or birth asphyxia management. Delivery was conducted by nurses/FHWs in 75% instances and by trained *dais* in 22% instances. This was especially during the night time. The postnatal stay of 48 hours was ensured at only four out of 12 PHCs.

Nearly 90% of the newborns received normal care such as timely initiation and exclusive breast feeding, hypothermia prevention, cord care and vaccination. Only half of the low birth weight (LBW) newborns were explained about Kangaroo Mother Care and only 11% newborns received advice on danger signs. Completely filled discharge card was given to only one fifth of the newborns.

Immunization

Immunization service obtained the maximum score among all four services. The cold chain management was appropriate at majority of the PHCs and the sessions. But correct placement of vaccines in the Ice Lined Refrigerator was found at only one third and correct placement of icepacks in the Deep Freeze at none of the PHCs. Nearly 80–100% of the observed children received vaccination at appropriate age with correct dose, route and site. Correct segregation of biomedical waste was done at only two of the 12 sessions whereas chemical disinfection of the same was not done at any session. None of the sessions insisted on observing the child for half-an-hour for immediate adverse reactions. Not all mothers were given four key messages viz. the vaccine given, side effects, follow-up date and card safety.

Management of sick child

Although all the selected PHCs had IMNCI trained MOs, only one third of them were using IMNCI form for management of sick children. Review of these available forms of 'sick young infant' category revealed that only one fourth of the forms were completely filled. Similarly less than half of these forms had correct classification, treatment and advice mentioned in them. In the 'sick child' category, only one third forms were completely filled. Less than half of the forms had correct classification, treatment and advice. Overall the services for management of sick child obtained 41% of the maximum possible scores.

Growth monitoring

Only five out of 12 sessions offered growth monitoring to all the eligible children, the rest frequently missed out children

especially siblings of the children who came for vaccination. Almost three fourth of children were correctly weighed and their weight correctly plotted among those who were offered growth monitoring. Nearly 80% of the mothers were informed regarding current weight of their child; however, only 25% were told regarding their child's progress. The workers were observed for feeding assessment and/or advice for children in yellow or red zone on growth chart. Nearly 80% of the children up to 6 months of age were advised about the breastfeeding frequency, however few were inquired on any difficulty in breastfeeding or advised exclusive breastfeeding. Only half of the children in the age 6 months to 2 years were advised to continue breastfeeding till 2 years of age though almost all received advice on complementary feeding. Only one fourth received advice on the correct amount, density and frequency of complementary feeds. Advice on active feeding and hygiene were never given. 'Check understanding' was also never practiced. Overall obtained score for growth monitoring was 52% of the maximum possible score.

Table 3 summarizes the findings of the study in the form of strengths and weaknesses of the current practices in child health services in the studied PHCs.

Discussion

With regard to the Inputs the highest scores were obtained for Drugs and Consumables followed by Equipments and Supplies. A similar study on child health services by Agarwal *et al.*, also observed highest score for availability of drugs and vaccine at 90% followed by basic equipment at 61%.^[6]

The component on availability of service provider and training had obtained a low score. It is important that the 24-hour PHCs

Table 2: Scores for services in process section

Child health services	Mean obtained score (%)	Maximum score
Newborn care	21.3 (52)	41
Immunization	46.3 (76)	61
Management of sick child	24.6 (41)	60
Growth monitoring	8.3 (52)	16

Table 3: Summary of findings

Areas with good score	Areas that need improvement
Infrastructure	24 hour availability of doctors at 24×7 PHCs
Cleanliness	Essential Newborn Care training
Basic amenities	Availability of guidelines at point of use
Equipment and supplies	Biomedical waste management
Drugs and consumables	Adherence to guidelines for newborn examination and records for newborn care
Cold chain management and technical quality of immunization	Adherence to IMNCI
	Communication with the mother/care taker

have adequate numbers of MOs, staff nurses or ANMs posted at the PHC as well as staying within the premises to ensure round the clock availability of the services. The guidelines on operationalizing 24 × 7 PHCs issued by Ministry of Health and Family Welfare also mentions that two MOs posted and working at the PHC is must.^[7] Yet, our study finds that only half of the studied PHCs had a MO available round the clock. The data on availability of health personnel at 24 × 7 PHCs in India are not available separately. The data available from the National Facility Survey Report states that though 80% of the surveyed PHCs have at least one MO available only 64% of the PHCs had the MO staying at the PHC.^[14] A recent study on quality assurance program in Gujarat found that 94% of the studied PHCs have one MO available but only at 58% of the PHCs the MO stays at PHC.^[15] The alternative strategies have to be put in place to ensure the availability of doctors at PHCs.

More efforts are also needed to ensure availability of staff nurses at 24 × 7 PHCs. An important issue observed in this study was the practice of putting FHWs on rotating labor room duties. These FHWs are also expected to perform their routine duties at the sub-center apart from the LR duty. Technically they are also expected to conduct deliveries at their respected sub-centers. Hence, such an arrangement would serve only a short term purpose. Thus dedicated paramedical staff for care at birth is necessary for 24 × 7 PHCs. Also, technically at least two skilled attendants, a doctor and a paramedical staff, are needed at the time of delivery wherein one is involved in care of the mother and the second attends to the newborn.

With regard to training of the available personnel the ENBC trainings are the need of the hour. Out of all the child health service components the Newborn care is relatively new and the last to gain attention. The other components are in place for quite some time and with the results of these efforts now the mortality due to these factors has come down with the neonatal mortality now contributing a major proportion of infant mortality. In this context it is important that the forthcoming ENBC trainings preferentially train doctors and paramedics from the 24 × 7 PHCs.

In our study the low score in Infrastructure facility was due to poor arrangements for biomedical waste management, non availability of oral rehydration therapy corners and lack of hand washing facility in labor room. Lack of emergency transport mechanism was also important to note. A functional emergency transportation system to manage referrals at any time is an important requirement at 24 × 7 PHC. The practice of depending on EMRI ambulance service (popularly known by the name '108 ambulance' in Gujarat) for sending the patient from PHC to the referral center needs to be changed. A '108 ambulance' is designed to transport a patient from field to the medical facility; we should not expect it to transport a patient from one medical facility to the referral center. So having a dedicated transport facility of its own and driver at 24 × 7 PHCs is very much essential.

The low score in availability of essential protocols and guidelines is easy to improve as it requires only one time investment in making the guidelines available at the point of use; actually it also consumes fewer amounts of monetary resources as compared to the other inputs.

With regard to the four services included in present study, immunization and growth monitoring are oldest running programs whereas IMNCI and newborn care are relatively new entrants. This may explain the highest scores immunization service has received in the present study and other similar studies by Lal *et al.*, and Agarwal *et al.*, since improvements in service provision can be expected in any program running for such a long time.^[4,6] Further immunization has received much attention, rightly so, among all child health services till now. But the low score in growth monitoring is particularly important to note. For a program which is running since so long and yet there is so much of improvement which needs to be brought about in growth monitoring. Indeed achieving only coverage in terms of number of children weighed is not enough. It is rather wasteful use of resources if we fail to offer subsequent counseling to mothers where required.

As regards new born care, the lack of training of the staff in ENBC would explain non adherence to the guidelines, yet in absence of ENBC training the PHCs can certainly make use of IMNCI guidelines and forms for in-patient newborn care. An important observation in this study about deliveries being conducted by trained dais at PHCs was also corroborated by Raman *et al.*^[16] Ensuring adequate postnatal stay of the mother and baby was also found to be challenging in this study. It is especially important for LBW babies. But as Raman *et al.*, also observes in their study on 24 × 7 PHCs in Gujarat that most mothers were being discharged within 4 hours.^[16]

While earlier studies by Agarwal *et al.*, and Lal *et al.*, which also observes not so good scores for services for management of sick child, were done before introduction of IMNCI.^[4,6] The lacunae they observed were related to those points which required good communication with the care taker by the service provider for management of under-five morbidities. In this study also it was observed that while the MOs invariably filled up the part of the IMNCI form on presenting morbidities; the breastfeeding assessment, information on vaccination and the date for next immunization as well as temperature and weight record were frequently missing. Agarwal *et al.*, also observed there was no practice of recording weight for children with diarrhea and temperature for those with Acute Respiratory Infection.^[6]

This issue of communication and counseling is worth alluding as adequate emphasis on this was found to be lacking for all child health service components in this study. Communication about danger signs for newborn and Kangaroo Mother Care for low birth weight newborns, the four key messages for immunization, counseling component for growth monitoring were all problem areas. It is important to note that this neglect of effective communication was happening across the whole

range of providers, from doctors to paramedical staff to the Anganwadi workers. The studies by Banerjee and Agarwal *et al.*, both corroborate these findings.^[6,17] Indeed, this component of communication with the mother or care taker needs special attention by service providers.

Finally, the Input section, which deals with the structural attributes, fares better than the process section. This finding was corroborated by Agarwal *et al.*, in their study where the structural attributes were graded as 'good' with overall 63% scores whereas process component was graded as 'average' with overall 43% scores.^[6] A study by Ehiri *et al.*, on quality of child health services in Nigeria also found that inadequacy in the quality of child health services in PHC was a product of failures in a range of quality measures viz. structure (lack of equipment and essential drugs), process failure (non-use of the national case management algorithm and lack of a protocol of systematic supervision of health workers).^[18] The findings of the initial assessment in the pilot on quality assurance program for RCH services in Ahamadnagar district of Maharashtra have also shown similar results where many facilities scored good in the inputs assessment, but were lagging behind in the process section.^[19]

Ramani observes that in developing countries, there is an inherent importance given to structural components of quality, stemming from a long history of structural inadequacies.^[20] However, even while accepting the importance of structural measurements, we need to understand the limitations of using structural measures alone as a proxy for measuring quality. For example, the Indian Public Health Standards largely addresses the structural lacunae such as the availability of medicines, equipment, etc. For the measurement of output component also we already have in place large scale studies like National Family Health Survey. What is lacking is the focus on process as a quality measure.

Conclusion

Thus quality is not completely structure dependent. If we use only structural measures of quality, there is a danger of blaming the lack of quality entirely on the lack of structure in spite of the existence of several deficiencies in the quality of care that are unrelated to structure (Inputs). The present study observes that the deficit is higher for process as compared to inputs. Hence adequate emphasis needs to be put on the process as well. Thus efforts to improve the quality of child health services, provided by PHCs in the study setting, should focus not only on resource-intensive structural improvements, but also on cost-effective measures that address actual delivery of services (process), especially the proper use of guidelines for various services and a meaningful supervision to ensure adherence to the same.

References

1. Government of India, Ministry of Health and Family Welfare. National Program Implementation Plan RCH Phase II-Program Document; 2005.
2. Government of Gujarat. District Quality Assurance Programme for Reproductive Health Services, An operational manual. Gandhinagar: Ministry of Health and Family Welfare, Government of Gujarat; 2006.
3. Government of India. Quality Assurance for District Reproductive and Child Health Services in Public Health System, An Operational Manual. New Delhi: Ministry of Health and Family Welfare, Government of India; 2008.
4. Lal S, Kapoor S, Vashisht B, Punia M. Coverage and quality of maternal and child health services at subcentre level. *Indian J Community Med* 2001;26:16.
5. Rashmi, Vijaykumar B. Quality assessment of child care services in primary health care settings of central karnataka (davangere district). *Indian J Community Med* 2010;35:24-8.
6. Agarwal M, Idris M, Ahmed N. Quality of Child Health Services at Primary Care Level (Rural vs Urban) in Lucknow District. *Indian J Community Med* 2004;29:192-5.
7. Govt of India. Guidelines for Operationalising a Primary Health Centre for Providing 24-Hour Delivery and Newborn Care Under RCH-II. NEW DELHI: Maternal Health Division, Department of Family Welfare, Ministry of Health and Family Welfare; 2005.
8. Donabedian A. The quality of care: How can it be assessed? *JAMA* 1988;260:1743-8.
9. Government of India. Guidelines for Pregnancy Care and Management of Common Obstetric Complications by Medical Officers. New Delhi: Maternal Health Division, Department of Family Welfare, Ministry of Health and Family Welfare, Government of India; 2005.
10. Government of India. Immunization Handbook for Health Workers. New Delhi: Ministry of Health and Family Welfare, Government of India; 2006.
11. Government of India. Immunization Handbook for Medical Officers. New Delhi: Department of Family Welfare, Ministry of Health and Family Welfare, Government of India; 2009.
12. Government of India. Integrated Management of Neonatal and Childhood Illness. New Delhi: Ministry of Health and Family Welfare, Government of India; 2003.
13. Government of Gujarat. MAMTA Abhiyan Guidelines. Gandhinagar: Ministry of Health and Family Welfare, Government of Gujarat; 2006.
14. International Institute for Population Sciences (IIPS) and Macro International. National Family Health Survey (NFHS-3), 2005-06. Mumbai: IIPS 2007.
15. Kantharia S, Misra S, Patel D. Assessment of quality assurance program of dept of health and family welfare - Gujarat state. Department of Preventive and Social Medicine, Medical College, Baroda; 2009.
16. Raman PS, Sharma B, Mavalankar D, Upadhyaya M. Assessing the regional and district capacity for operationalizing emergency obstetric care through first referral units in Gujarat W. P. No. 2009-04-01 Indian Institute of Management, Ahmedabad April 2009.
17. Banerjee B. Information, Education, and Communication Services in MCH Care Provided at an Urban Health Center. *Indian J Community Med* 2009;34:298-300.
18. Ehiri JE, Oyo-Ita AE, Anyanwu EC, Meremikwu MM, Ikpeme MB. Quality of child health services in primary

health care facilities in south-east Nigeria. Child Care Health Dev 2005;31:181-91.

19. Khan ME, Mishra A, Sharma V, Varkey LC. "Development of a Quality Assurance Procedure for Reproductive Health Services for District Public Health Systems: Implementation and Scale-up in the State of Gujarat" FRONTIERS Final Report: Washington DC, Population Council April 2008.
20. Ramani S. Can we transplant conceptual frameworks of healthcare quality evaluation from developed countries

to developing countries? Indian J Community Med 2009;34:87-8.

How to cite this article: Chavda P, Misra S. Evaluation of input and process components of quality of child health services provided at 24 × 7 primary health centers of a district in Central Gujarat. J Family Med Prim Care 2015;4:352-8.

Source of Support: Nil. **Conflict of Interest:** None declared.