Enhancing consultation time for primary paediatric care in the outpatient department

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ABSTRACT

Objective To improve the duration and quality of consultation times during paediatric ambulatory care.

Methods and analysis This, before and after study, compares consultation time and core activities. All the subjects attended the paediatric outpatient department (P-OPD) between 1 July 2013 and 31 October 2013. Initially, consultation time was recorded directly by using observer timing with a stopwatch on 10–12 patients on 3 consecutive days and estimated indirectly after the study. All subjects underwent some or all of the following assessments and interventions (core activities): danger sign detection, illness treatment and referral, growth assessment followed by appropriate dietetic advice, immunisation and parent counselling. We implemented an intervention structure that divided work among staff members and then compared core activities.

Results During the study period, 2204 patients attended the P-OPD over 108 days. Before the study, the average consultation time was less than 5 min (range 3.5–5 min), and the core activities included the treatment and referrals of illnesses and immunisation only. No treatment guidelines existed, and weight record was primarily for calculating the dose of the drug to be prescribed. The protocol did not include growth assessment and maintenance of detailed clinical records.

After implementing the core activities through effective utilisation of existing resources, on an average, 20 patients received consultations per day, and the consultation time was approximately 12 min per patient.

Conclusion The P-OPD consultation time increased from 3.5–5 min to approximately 12 min per patient. Using the structured interventions, the range of assessments and interventions, during these consultations, increased without having to hire more staff.

INTRODUCTION

The concept of primary healthcare refers to the provision of ambulatory or first-level personal healthcare services. Additionally, it refers to a comprehensive approach to health that includes promotive, protective, preventive, curative, rehabilitative and palliative care. In India, primary healthcare is delivered by state-sponsored primary health centres. Ayushman Bharat (AB), the National Health Protection Scheme, encompasses secondary and tertiary care hospitalisation.

AB aims to cover over 100 million poor and vulnerable families (approximately 500 million beneficiaries), providing coverage up to 500 000 Indian rupees per family per year; further, it subsumes the ongoing centrally sponsored schemes. Located in a rural area, our centre offers primary care at the outpatient level, and a medical college continues to provide secondary as well as tertiary care at the hospital level.

Primary care-driven health systems are effective at reducing disease, mortality, and promoting a more equitable distribution of healthcare facilities worldwide. However, there is a need to mobilise necessary resources to strengthen the primary healthcare division, which often encounters challenges like disproportionate focus on specialist hospital care, fragmentation of health systems and the proliferation of unregulated commercial care.
Short consultation times are a matter of public health concern as it results in polypharmacy, overuse of antibiotics and poor communication with patients.\(^5\) The average consultation time in India is around 1.9 min.\(^6\) The gaps in primary paediatric care emanate from poor orientation of the doctors handling the primary health centres, lack of in-service training, grossly inadequate paediatrician numbers in the public sector and unaffordable care in the private sector.

We hypothesised that consultation times could be lengthened to deliver optimum primary care in paediatric outpatient department (P-OPD) by integrating appropriate assessments and interventions. The endeavour was to achieve this with existing resources.

MATERIALS AND METHODS
The present report is a case–control study conducted between 1 July and 31 October 2013, at the P-OPD of a general hospital (GH). The GH, attached to the Maharashtra Institute of Medical Education and Research, is a rural medical college located 45 km away from the city of Pune. It caters mostly to the health needs of adjoining rural areas. The beneficiaries of the P-OPD are predominantly from a lower socioeconomic background. All participants who attended the P-OPD during the study period were enrolled for the study.

Before the study began, an observer recorded the consultation time using a stopwatch for 10–12 patients for 3 consecutive days. After the study period was over, the consultation time was estimated indirectly from the number of patients that attended P-OPD during the OPD working hours.

The P-OPD attendees participated in some or all of the following assessments and interventions: danger sign detection, illness treatment and referral, growth assessment followed by appropriate dietetic advice, immunisation, parent counselling and maintenance of records (figure 1). The work distribution among staff members was as follows: (a) anthropometry—the P-OPD assistant, (b) nutritional grade charting, dietary advice provision and immunisations—the P-OPD nurse and (c) triage, 6 case management, referrals and counseling—the consultant assisted by an intern.

Treatment of illnesses
Locally assembled protocols guided the treatment of common problems such as fever, cough and cold, and diarrhoea (figure 2). Common eye, ear and skin problems received treatment at the P-OPD, whereas participants with specific ailments received referral services. Low-cost generic medications with pharmacological effectiveness were given high priority.

Growth assessment
A weight-for-height (W/H) wall chart was used to calculate the weight-for-height/length percentiles of the participants. A color-coded chart printed on heavy-duty laminated paper (approximately 140×100 cm) was mounted on the wall.\(^7\) The W/H was interpreted as follows: (a) red zone represented severe acute malnutrition (SAM), (b) yellow zone represented moderate-acute malnutrition (MAM), (c) green zone represented normal nutrition. Weight-for-age (W/A) was recorded as per the Indian Academy of Pediatrics (IAP) criteria.\(^9\)

Management of SAM and MAM
Inpatient care was advised if the participant’s appetite was not good and/or a significant infection was present. A stable child with mild infection was treated as an outpatient and received antibiotics, nutritional supplements, vitamin A and iron. A ready-to-use nutritional supplement, prepared by a local self-help group, was sold in the hospital canteen on a no-profit-no-loss basis. It consisted of proportionately mixed ingredients, in roasted and ground form: wheat (30 g), Bengal gram (15 g), groundnut (5 g) and jaggery/course brown sugar (15 g). The children in the green zone were given anticipatory advice.

Immunisation
The vaccines were procured from the regional health authorities and were provided to the patients free of charge.

Parental counselling
The consultations ended with communication with the caregiver/s regarding the nature of the child’s illness and the treatment plan, in the local language without using technical jargon.

The circumstances before the study
The centre functioned as a one-stop delivery channel for the treatment of common ailments and referrals.
No treatment guidelines were used. Weight was mainly recorded for dose calculation of the drug to be prescribed. No growth assessments were made, and the patients’ length/height was not recorded. In cases of apparent severe malnutrition, unstructured nutritional advice was offered, and all caregivers had to buy vaccines from the hospital pharmacy. No clinical patient records were maintained at the hospital. The immunisation schedule was identical during both periods.

Patient and public involvement
Patients were not directly involved in the design of this study.

RESULTS
During the study period, the P-OPD operated for 108 days, excluding Sundays and public holidays, and was visited by 2204 patients. On average, 20 patients received consultations per day during the P-OPD operating hours (09:00–13:00); thus, each patient consultation was approximately 12 min. Before the study, the recorded consultation time ranged from 3.5 to 5 min.

The three most common reasons for P-OPD consultations were: immunisation (N=726, 32.9%), treatment of fever (N=332, 15.1%), and cough and cold (N=331, 15%). Diarrhoea, abdominal pain and follow-up consultations after hospital discharge, especially among newborns (table 1) were the next most common reasons. The other reasons for consultation (N=243; 11%) included specific paediatric diseases such as thalassemia, rheumatic fever, nephrotic syndrome, congenital heart defects and epilepsy.

The nutritional assessment revealed a high proportion of malnutrition. As per the W/A criteria produced by the IAP, 1716 (77.8%) participants were normally nourished (table 2), and according to the height/length-for-weight criteria created by the WHO, 59.7% of participants under 5 years old were in the normal range and in the green zone (table 3). The range of assessments and interventions performed was smaller before the study.

DISCUSSION
Short consultation times are a serious healthcare concern; approximately 50% of the world population

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**Table 1** Frequency distribution of participants’ medical condition at the P-OPD

| Serial no. | Parameter               | Number of participants | Percentage of participants |
|------------|-------------------------|------------------------|---------------------------|
| 1          | Cough and cold          | 331                    | 15.0                      |
| 2          | Immunisation            | 726                    | 32.9                      |
| 3          | Fever                   | 332                    | 15.1                      |
| 4          | Diarrhoea               | 139                    | 6.3                       |
| 5          | Eye problems            | 18                     | 0.8                       |
| 6          | Ear problems            | 6                      | 0.3                       |
| 7          | Skin problems           | 50                     | 2.3                       |
| 8          | Bites                   | 16                     | 0.7                       |
| 9          | Urinary symptoms        | 25                     | 1.1                       |
| 10         | Tuberculosis            | 12                     | 0.5                       |
| 11         | Follow-up               | 122                    | 5.5                       |
| 12         | Abdominal pain          | 100                    | 4.5                       |
| 13         | Chest pain              | 18                     | 0.8                       |
| 14         | Admissions              | 7                      | 0.3                       |
| 15         | Thalassemia             | 19                     | 0.9                       |
| 16         | Pica                    | 10                     | 0.5                       |
| 17         | Others                  | 243                    | 11.0                      |

P-OPD, paediatric outpatient department.
receives a mean consultation time of 5 min or less, which continues to decrease. Little can be achieved in less than 5 min unless the focus is mainly on the detection and management of gross disease.

By using an experimental intervention, the duration of the consultation times and the execution of the assessments and interventions became well distributed and defined among the team members. The participation of the P-OPD nurse and assistant helped widen the scope of assessments and interventions conducted, which, consequently, increased the consultation time for each patient from less than 5 min to approximately 12 min. Collaborative teamwork is a crucial part of providing high-quality care across a range of areas if the quality of care is to be improved. Additional support is required to provide preventive and promotive care to deprived populations. A senior consultant coordinated and supervised the overall functioning of P-OPD care conducted in a large room. An intern performed computer entry of the data. Nutrition-related activities, counselling and record maintenance received due attention, this occurred in addition to diagnoses and treatment advice. The caregiver/s could witness everything they expected to be done in the P-OPD. The increased duration of consultations and improved quality of time spent with healthcare professionals may also have increased caregiver satisfaction, although this was not measured in this study.

Much effort went into creating structured records for clinical assessment, nutritional assessment and advice, treatment guidelines and work distribution. The consultant made critical decisions about inpatient care and referrals. Growth monitoring must accompany community-based health and nutrition interventions to reduce child malnutrition and mortality. A previous study indicated that there was no national consensus on the charts to be used. In all the recommendations, the comparators are different. We followed the traditional method of W/A, which is best suited to detect undernutrition, commonly found in the study population.

Integrating immunisation with other health interventions and surveillance in the health systems context is among the four strategic areas of the Global Immunisation Vision and Strategy. Therefore, the children who visited the P-OPD for illness had their growth monitored and immunisation status checked. A single-window approach that combines such health interventions leads to the pooling of human and financial resources and reduces intervention-specific costs. We recommend that an effort be made to compress the full version of activities to a feasible one based on patient load and doctors’ availability, especially, because the ward assistants’ participation is voluntary. For example, in case of staff shortage, W/A may be preferred to height/length-for-age as a parameter for growth monitoring.

A limitation of our study is that the consultation time was recorded using two different methods pre-study (10–12 consultation times measured with a stopwatch over 3 days) and post-study (number of consultations divided by opening hours over 108 days). Second, the seasonal variations of diseases may not have been represented in this study.

To summarise, by streamlining primary paediatric assessments and interventions in the P-OPD, we increased the consultation time from less than 5 min per patient to approximately 12 min per patient without having to hire more staff.

| Table 2 Distribution of participants’ nutrition status by weight-for-age (IAP criteria) |
|---------------------------------|-----------------|-----------------|
| Nutrition grade | Number of participants | Percentage of participants |
|-----------------|-----------------------|---------------------------|
| I               | 292                   | 13.2                      |
| II              | 85                    | 3.9                       |
| III             | 22                    | 1.0                       |
| IV              | 2                     | 0.1                       |
| N               | 1716                  | 77.8                      |
| NA              | 87                    | 3.9                       |
| Total           | 2204                  | 100.0                     |

IAP, Indian Academy of Pediatrics; NA, not available (missing data); N, normal.

| Table 3 Distribution of participants’ nutrition status by height/length-for-weight among children under 5 (WHO criteria) |
|---------------------------------|-----------------|-----------------|
| Serial no. | Zone | Number of participants | Percentage of participants |
|------------|------|-----------------------|---------------------------|
| 1          | Red  | 105                   | 7.1                       |
| 2          | Yellow | 336                  | 22.8                      |
| 3          | Green | 1030                  | 70.0                      |
| Total      | Total | 1471                  | 100.0                     |

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REFERENCES

1. World Health Organization. The World Health Report 2008 - Primary Health Care (Now More Than Ever), 2008. Available: https://www.who.int/whr/2008/en/

2. World Health Organization. Primary health care, 2019. Available: https://www.who.int/news-room/fact-sheets/detail/primary-health-care

3. Ayushman Bharat: National health protection mission, n.d. Available: https://www.india.gov.in/spotlight/ayushman-bharat-national-health-protection-mission

4. Starfield B, Shi L, Macinko J. Contribution of primary care to health systems and health. Milbank Q 2005;83:457–502.

5. Wilson AD, Childs S. Effects of interventions aimed at changing the length of primary care physicians' consultation. Cochrane Database Syst Rev 2006;CD003540.

6. Irving G, Neves AL, Dambha-Miller H, et al. International variations in primary care physician consultation time: a systematic review of 67 countries. BMJ Open 2017;7:e017902.

7. World Health Organization. Integrated management of childhood illness (IMCI), n.d. Available: https://www.who.int/maternal_child_adolescent/topics/child/imci/en/

8. World Health Organization. Interpreting growth indicators, 2008. Available: https://www.who.int/childgrowth/training/module_c_interpreting_indicators.pdf

9. Anon. Nutrition sub-committee, Indian Academy of Pediatrics. The workshop on ‘infant foods industry and pediatricians’. Indian Pediatr 1975;12:54–5.

10. Campbell SM, Hann M, Hacker J, et al. Identifying predictors of high quality care in English general practice: observational study. BMJ 2001;323:784–7.

11. Ashworth A, Shrimpton R, Jamil K. Growth monitoring and promotion: review of evidence of impact. Matern Child Nutr 2008;4 Suppl 1:86–117.

12. Khadilkar V, Phanse S. Growth charts from controversy to consensus. Indian J Endocrinol Metab 2012;16:S185–7.

13. World Health Organization. GIVS: global immunization vision and strategy 2006-2015, 2005. Available: https://apps.who.int/iris/bitstream/handle/10665/69146/WHO_IVB_05.05.pdf;jsessionid=4C3D4BD25FACA84F5C5B9A9A5F568DDA?sequence=1