

## Utilization of Preventive and Curative Services in Five Rural Blocks in Vellore, India

This health utilization survey of 720 children (age <2 y) from 5 rural blocks in Vellore district identified that 80% used government facilities for preventive care while >80% used private facilities for curative services. Only 0.7% were home deliveries, 46% reported illness in the two-week recall, and 83% sought care for these illness.

**Keywords:** Health utilization, Immunization, Public health

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**H**ealth-seeking behavior of children is influenced by multiple factors [1,2]. Novel methods are used to increase awareness and acceptance of preventive and curative health services of which the financially incentivised Muthulakshmi Reddy Maternity Benefit Scheme (MRMBS) by Tamil Nadu government is one [3], and the Chief Minister's Health Insurance (CMCHIS) is another [4]. Many incur out-of-pocket expenditure (OOPE) while seeking health care even among the insured, with nearly 60% incurring OOPE during illness [5]. We assessed the health-seeking behavior of children below the age of 2 years for preventive intervention and selected common illnesses as a part of a larger survey.

We carried out a health sub-center-wise 60 cluster sampling [6] of 720 children (<2y) living in five rural blocks of Vellore health unit district (total population 6,86,335). The interviewer administered a semi-structured questionnaire to the mother/primary caregiver to document the health-seeking behavior. Immunization, illness in preceding 4 weeks, treatment, hospitalization and specific hypothetical questions on health care preferences for future illnesses were also documented.

Among the 720 children, only five (0.7%) were home births. Government health facilities were preferred for immunizations (**Table I**); 335 (46%) reported illness during prior two-week recall and 278 (83%) sought care. Of 720, 175 (24.3%) reported illness in the 3rd & 4th week recall, and 166 (94%) sought treatment. Thirty-six children (5%) were hospitalized in the preceding year with median (IQR) duration 5 (3, 9) days.

**TABLE I** HEALTH-SEEKING BEHAVIOR FOR CHILDREN BELOW THE AGE OF TWO YEARS

	Government health care facilities, No (%)	Private health care facilities, No (%)
Births (n=720)	588 (81.7)	127 (17.6)
Immunization (n=718)	603 (84)	115 (16)
Health facility visited during illness in prior 2 week recall (n=262)	74 (26.6)	188 (67)
Health facility visited during illness in prior 3-4 week recall (n=166)	37 (22)	129 (78)
Children hospitalized in the previous 12 mo (n=36)	21 (58)	15 (42)

For hypothetical mild illnesses in the future, 634/720 responded; 59% said they would seek treatment, 372 (52%) preferred private and 262 (36%) government facility, 76 (10%) home remedy, 8 non-medical treatment at local mosque, and 11 said native treatment. For severe illnesses, all nearly parents (712/720) preferred a health facility visit (113, 18% government; 582, 82% private).

Preventive public health services have a high acceptability among people while the reluctance to visit the Government-run curative services is apparent in this survey. Preference for private health care over government set-up has led to an exponential increase in private health care in India [7], to keep pace with increased demand. In response to MRMBS, the vast majority of the mothers preferred government immunization services, including financial support which compensated OOPE. This has impacted on good ANC and immunization services coverage and reducing morbidity, mortality and protecting households from financial burden. CMCHIS seeks to mitigate financial burden of curative services and has benefitted over 1.5 crore families since inception (2009) [8]. Improving standards and quality of care in Government-run curative services and better marketing strategy could improve acceptance of the public sector curative services leading to a better utilization of the tax payers' money.

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## Factors Affecting Outcome in Children with Dengue in Kolkata

This observational, descriptive study was conducted on 260 dengue patients diagnosed as per the revised 2009 WHO guidelines in a tertiary-care hospital of eastern India between June and November 2015. Children were evaluated for clinical symptoms, signs, and laboratory parameters. Clinical variables viz., rash, nausea/vomiting, bleeding, oliguria, capillary leak and liver enlargement; and laboratory variables viz., rising haemoglobin, haematocrit, thrombocytopenia, blood urea, serum Creatinine, ALT, hypo albuminemia and cholesterol were found to be significantly associated with outcome.

**Keywords:** *Clinical features, Complications, Dengue virus.*

Children with dengue often present late with serious complications. Most of the previous studies in children have been done using the older WHO classification of dengue [1,2]. We analyzed the clinic-epidemiological profile and the determinant factors affecting outcome in children admitted to Institute of Child Health, Kolkata between 1st June and 30th November, 2015.

This observational study on 260 children, aged 2 months to 15 years, admitted to hospital, was based on the revised WHO 2009 case definition [3]. All children were confirmed to be having dengue by ELISA. Ethical

approval was obtained from the Institute Ethics Committee and informed written consent was obtained from the parent or guardian. Patients were divided in three groups [3] - Dengue without warning signs (DF), Dengue with warning signs (DWS) and Severe Dengue (SD). Children were evaluated for clinical symptoms (Headache, nausea/vomiting, cough, abdominal pain, bleeding, rash), signs (Oliguria, hepatomegaly >2cm, capillary leak), pathological (Haemoglobin (Hb), haematocrit, total leucocyte count (TLC), platelet count), biochemical (Urea, creatinine, C-reactive protein, albumin, cholesterol, alanine aminotransferase (ALT)) and radiological (pleural effusion/ascites from chest X-ray/Ultrasonography) parameters. We also documented demography, body mass index (BMI) and outcome.

Discrete variables were analyzed by Chi-Square test, and continuous variables by ANOVA. Statistical analysis was performed on SPSS 20.0. *P* value less than 0.05 was considered significant.

Final analysis was performed on 257 children as 3 of them left against medical advice; 2 deaths were recorded during this period. 47% were diagnosed with DF and 42% with DWS. The mean age at presentation was 69 months. Children between 2-8 years were the most commonly affected. Of these, 23% were positive by NS1 ELISA, 14% were positive by IgM ELISA, 38% were positive both for NS1Ag and IgM, 21% were positive both with IgM and IgG and 4% were positive with all NS1Ag, IgM and IgG