Immunization Status of Children in Goa

We conducted a study to review the immunization status of children in Goa, to identify risk factors for underimmunization and to suggest measures to improve immunization coverage, A pilot study was carried out in Pediatric ward of Department of Pediatrics, Goa Medical College for a period of one year followed by a study using the WHO 30 cluster method)n different parts of Goa over a period of 6 months from December 2000 to May 2001.

The study sample consisted of 362 children with 12 children from each cluster in 12-23 months age group. A child was said to be fully immunized if he/she had received one dose of BCG, 3 doses of OPV and DPT and one dose of measles at the end of 12 months age. Anything less was considered as partial immunization and if the child had not received any immunization, he was considered as unimmunized.

The immunization coverage for Goa can be summarized as 85.35% children fully immunized, 11.87% children partially immunized and 2.76% children unimmunized. The coverage for individual vaccines was BCG (94.7%), OPV1 (96.7%), OPV2 (95.8%), OPV3 (9o.6%), DPTl (96.1%), DPT2 (95%), DPT3 (90.6%), Measles (88%), Hepatitis B (19%), MMR (5%). The immunization coverage levels by individual characteristics are presented in *Table I*.

The main reasons for non immunization were found to be lack of information and obstacles to immunization.

The results of our study are comparable to some of the other recent studies in Goa who found a similar coverage(2,3), but were in

TABLE I– *Coverage level by Background Characteristics (%)*

Characteristics	Fully immuni-zed	Partially immuni-zed	Un-immunized
Total	85.3	11.9	2.3
Gender			
Male	84.6	13.8	1.6
Female	86.2	9.8	4
Birth Order			
1	86.6	12.2	1.1
2	88.8	9	2
3	69.2	23	7.6
4	75	0	25
Religion			
Hindu	83.7	13.9	2.4
Christian	97.8	2.2	0
Muslim	56	28	16
Residence			
Rural	80	16.7	3.3
Urban	90.6	7.1	2.3
Mother's education			
Uneducated	70.8	22.1	7
Primary	91.2	6.8	1.9
Secondary	90.7	9.2	0
Graduate	100	0	0
Father's education			
Uneducated	56	20.6	23.5
Primary	75.3	21.9	8.7
Secondary	89.8	10.2	0
Graduate	98.5	1.4	0
Socio-economic status			
Class I	100	0	0
Class II	95.8	4.2	0
Class III	92.1	7.9	0
Class IV	81.7	15.6	2.6
Class V	48.6	32.4	19
Household size			
<3	98.4	0.6	0
3-6	85.4	12.3	2.3
>6	68	23	

sharp contrast to the reported figures of 100% coverage by the Health Services(4). This shows that the reported figures are a gross overestimation of the actual immunization coverage. This also stresses the need for coverage surveys from time to time to assess immunization coverage instead of relying on the reported coverage.

In our study we found that children with high birth order, Muslim religion, those residing in rural areas, children with low parent education and socioeconomic status and those from high household size had significantly low immunization coverage levels compared to children from other groups ($P < 0.05$). Also a trend analysis showed improvement in immunization status with improvement in parent education, socio-economic status and decreasing family size.

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A Bedside Dipstick Method to Detect *Plasmodium falciparum*

The paper by Shah and Deshmukh(1) describes their evaluation of a dipstick test to diagnose falciparum malaria. The test itself is not new, having already found its place in standard manuals(2). While the effort to evaluate the test in children is appreciated, some shortcomings have reduced the usefulness of this study. It is hoped that the comments will be accepted as helpful and constructive. The question of sensitivity in infants below 6 months has been raised by the authors but not satisfactorily answered since the sample size was too small. It would have been ideal to measure not only the sensitivity but also specificity, without which positive and negative predictive values cannot be calculated. By confining the study sample to those with positive blood smears, the investigators lost their ability to measure specificity and also to 'blind' the observer(s) of the test.

The trademark name of a test kit should be so identified with the symbol ® or ™, and the source specified, when it is first introduced in scientific communications. Thereafter, the name may be repeated without such details. Thus the proper way to introduce the test is: