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## Ages and Stages Questionnaire – A Developmental Screening Test

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**D**evelopmental delays occur in 15% children under five years of age [1]. Early recognition of developmental delay facilitates the implementation of prevention and intervention programs and results in improvement in cognitive, behavioral, academic and adaptive functioning [2]. Hence, it is important that early identification of delayed development be done using standardized developmental tests, especially during the follow up of premature and “high risk” infants.

The American Academy of Pediatrics (AAP) has recommended a regular developmental assessment using standardized tools at the ages of 9, 18, 30 months. But their surveys have shown that a minority of pediatricians perform routine screening using standardized tools. This may be due to several factors like inadequate time and remuneration, conflicting reports on accuracy of available screening tests. It has been estimated that only about half of the children with developmental problems are detected before they join school [3]. Parents are usually the first to pick up signs of possible developmental delay, and any concern that the parents have about their child’s development should always be taken seriously. On the other hand, the absence of parental concern does not necessarily mean that all is well. Parents’ reports of current

attainment of developmental tasks have been shown to be accurate and reliable [4].

Developmental surveillance is defined as a flexible, longitudinal, continuous process through which potential risk factors for developmental and behavioral disorders can be identified [5-7]. In a busy practice, obtaining parents’ reports of development is a good ‘first line screen’, and an efficient and effective way of selecting out children who require a more detailed assessment and/or referral.

There are a variety of screening tests to choose from, many of which are completed by parents and require only a short period of time to administer and score. These questionnaire-based screening forms are convenient, as there are no directly administered test items and scoring requires only minimal training. For example, the Parents’ Evaluation of Developmental Status (PEDS) is a parent interview form that provides an algorithm to guide the need for referral, more screening, or continued surveillance [8]. The Ages and Stages Questionnaire (ASQ), is a parent completed questionnaire that may be used as a general developmental screening tool, evaluating five developmental domains: communication, gross motor, fine motor, problem-solving, and personal adaptive skills, for children from the ages of 4 to 60 months [9].

In this issue, Juneja, *et al.* [10] have evaluated a Hindi translation of the Ages and Stages Questionnaire on Indian infants. They confirmed their results by assessing the same children by the Development Assessment Scales for Indian Infants (DASII), which is considered the gold standard. They found a fairly high sensitivity (83.3%) and good specificity (75.4%) at 18-24 months of age. This test can be translated in other Indian languages and more studies can be done to validate it even further. It can help in identifying developmental delays in both the high risk and low risk children, who can then be referred for more definitive diagnosis.

Considering the prevalence of developmental delays, the primary care provider must be vigilant in identifying those children who require further evaluation and referral. Early identification leads to early treatment and ultimately improved long-term outcomes.

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## Prevention of Rotavirus Diarrhea in India: Is Vaccination the Only Strategy?

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Diarrheal diseases continue to be an important cause of morbidity and mortality in under-fives in India despite various preventive and standardized case management strategies [1]. It was estimated that in 2005, 302000 children age 1- 59 months died due to diarrheal diseases giving a mortality rate of 11.1 per 1000 live births [1]. The WHO and UNICEF have proposed a 7-point action plan to reduce the childhood diarrheal morbidity and mortality [2]. The treatment package of this plan includes: (i) fluid replacement to prevent dehydration and (ii) zinc treatment, while the prevention package includes (iii) rotavirus and measles vaccinations, (iv) promotion of

early and exclusive breastfeeding and vitamin A supplementation, (v) promotion of hand washing with soap, (vi) improved water supply quantity and quality, including treatment and safe storage of household water, and (vii) community-wide sanitation promotion.

The etiology of childhood diarrhea has been determined in a few studies in India, most of which have been hospital based. In this issue of the journal, Kahn, *et al.* review the epidemiology and prevention of rotavirus gastroenteritis in India, with main focus on the issue of introduction of a vaccine to help control rotavirus disease [3]. This review adds to the previous publications of the