Outbreaks continue to occur even in highly vaccinated populations as a result of vaccine failure and also under vaccination of susceptible persons [4]. Also, though immunity appears to be long lasting, studies from the UK and the recent epidemic in the USA suggest that both antibody levels and vaccine effectiveness may decline, contributing to outbreaks mumps of in older vaccinated populations [3]. This is the basis of giving the second dose of mumps at 5 years, a practice followed all over the world. We must give mumps at 15 months and 5 years or face a massive outbreak of mumps in the older population due to waning immunity.

The case for rubella is equally interesting. Rubella vaccine should not be administered to infants younger than one year of age because persisting maternal antibodies may interfere with seroconversion [5]. Furthermore, a resurgence of rubella and congenital rubella syndrome in 1989-1991 forced the American authorities to introduce a second dose of rubella at 5 years. Once again the effort was to delay the second dose with aim of long lasting protection [6]. If our first dose of rubella vaccine at 9 months does not work and the second dose is given as early as 15 months, we may be staring at a massive outbreak of congenital rubella syndrome in the older population who has a waning immunity as seen in the West many years ago.

In a nutshell, the recommendations have been shortsighted in looking at the immediate seroconversion, and not at the long term immunity and consequences. In the private sector where families tend to follow the immunization schedule religiously, compliance becomes a relative nonissue. In this setting, should I not continue with measles vaccine at 9 months, and MMR at 15 months and 5 years?

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MMR at 9 Months: Rushing in Where Others Fear to Tread?

We read with interest the IAP Committee on Immunization (IAPCOI) recommendation on MMR vaccine at 9 months of age [1]. In this context, we studied the 2014 immunization practices across 121 countries, including 4 countries in Africa, 34 in the Americas, 13 in the Eastern Mediterranean region, 51 in Europe, 15 Western Pacific countries and 4 South East Asian countries. In none of these countries is MMR given at 9 months, except Mongolia and Thailand. Germany uses it between 11-14 months and others give it after 1 year of age. Japan does not recommend MMR vaccine at any age.

We now know that the age at which MMR is given may have a bearing on adverse effects. On 28 September 2014, CNN announced news about a US Center for Disease Control (CDC) whistle blower - William Thompson [2] who had formerly co-authored a paper, that there is no link between the age of MMR vaccination and subsequent diagnosis of autism [3]. Thompson has now revealed that there was indeed greater risk of autism in

African-American children vaccinated under 2 years of age compared to those vaccinated after 3 years. The statistically significant difference was deliberately omitted from the paper. Brian Hooker re-analyzed the raw data from this study and confirmed a 3.4 [fold increase in risk in children vaccinated prior to the age of 2 years [4]. The article suggests that there may be genetic and racial susceptibility to adverse events and administration of the vaccine at an early age could precipitate it.

The IAPCOI quotes seven studies to support their claim that vaccination at 9 months is safe. These are small trials looking mostly at antibody titers following vaccination. It is difficult to base safety claims or make general recommendations to a population as a whole, on these short term studies.

Many pediatricians follow the CoI recommendations rather than the Government's National schedule. From the precautionary practice perspective, given the Thompson revelations, the CoI may need to reconsider their recommendation.

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MMR Vaccine at 9 months: Author's Reply

I thank both group of authors for sharing their views on recent change in the recommendations on MMR vaccination. The reasons and the evidence behind changing the schedule are discussed in the IAP Position Paper on Measles and Rubella Elimination Strategies [1] and subsequent recommendations on IAP Immunization Schedule [2]. As mentioned in these papers, the main reason was Government of India (GoI) decision to include rubella immunization as bivalent MR vaccine at 9 months of age in place of standalone measles vaccine in its Universal Immunization Program (UIP). The Academy has been arguing for inclusion of MMR instead of MR in the UIP also. The committee considers the decision of using MR as 'unethical' and a sort of 'missed opportunity' when three instead of two vaccine preventable diseases (VPDs) can be targeted simultaneously with almost similar logistics and efforts. The main reason why government has not included mumps in their immunization schedule is lack of documentation of existing burden of the mumps in the community. So, the recommendation of giving MMR in place of measles vaccine should be viewed in this background. The new recommendations will not only emphasize the need of targeting mumps also at least for control, but will ultimately pave the way for its inclusion in to the UIP at a later date. The stand-alone measles vaccine would become redundant and shall not be available for routine use in near future. Further, the new recommendations would also improve uptake and coverage of MMR vaccine even in the private sector. Though there is no authentic data available on the coverage rates of MMR at 4-6 years of age in the private health sector, the general impression is that it is not satisfactory.

There is adequate evidence, from the country and from outside, on the effectiveness of MMR when employed before 12 months of age [2]. An analysis of these studies would indicate that there is no change in the seroconversion of rubella when utilized below 12 months of age, and only some reduction in the seroconversion of measles and mumps in a couple of studies [2]. According to the meta-analysis and a systematic review done on effectiveness of measles vaccine, two doses of the vaccines are found to be more than 98% effective for adequate protection against measles [3,4]. The success of global initiative of measles elimination is hinged entirely on the provision of administering two doses of measles-containing vaccine to the target population. On the other hand, a single dose of rubella is considered adequate not only for seroconversion but also for long term protection