Hot Topic 2 Multiple Vaccines

Parents (and providers) may be concerned that children receive too many vaccines. Such concern may surround the misconception that multiple vaccines may overwhelm or weaken an infant's immune system. The following points may help to discuss this issue with parents.

- B and T cells develop around 14 weeks gestation, and newborns can generate both humoral (antibody) and cellular (T and B cell) responses at the time of birth.
- From the time of birth an infant's immune system responds to thousands of bacteria that immediately colonise its nose, throat, and intestines.
- Newborns are capable of mounting protective immune responses to vaccines within hours of birth.
- It has been estimated that infants have the theoretical capacity to respond to more than 10,000 vaccines at any one time.
- Even if 11 vaccines were given at one time, only about 0.1% of the immune system would be "used up" - and this is soon replenished.
- The vaccines we give children now actually contain fewer antigens (immunogenic proteins and polysaccharides) than they did 20 or 40 years ago. For example, the acellular pertussis vaccine currently in use contains only 3-5 antigens, as compared with the previously used whole cell pertussis vaccine that contained ~3000 antigens.
- Children respond to multiple vaccines given at the same time in a way that is similar to individual vaccines given at separate times. Studies testing children's immune responses to new vaccines are undertaken in conjunction with receipt of already existing vaccines.
- In some ways, vaccines actually prevent "weakening" of the immune system by preventing diseases that can lead to a secondary infection, such as pneumonia following influenza, or Group A strep infections following chickenpox.

Many of the points here are discussed in the following article: P.A. Offit, J. Quarles, M.A. Gerber, et al. Addressing Parents' Concerns: Do Multiple Vaccines Overwhelm or Weaken the Infant's Immune System? Pediatrics2002; 109: 124-129. It is available to download free from: http://pediatrics.aappublications.org

The following online resources may also be useful1.
http://www.cdc.gov/nip/vacsafe/concerns/gen/multiplevac.htm

http://www.immunize.org/catg.d/4038myth.htm

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