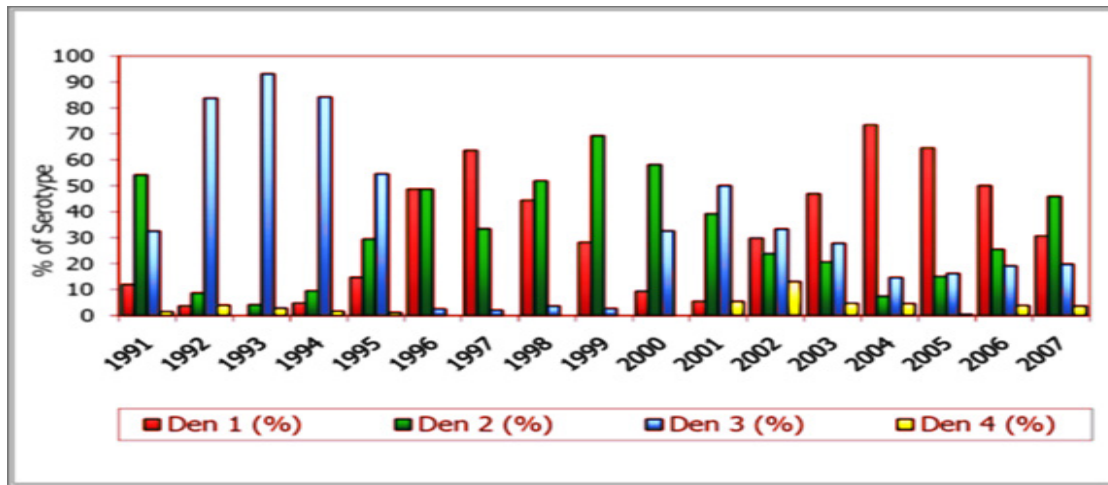


## 2. VIROLOGY



**Figure 5:** Sample serotype prevalence, 1991-2007 adapted from <sup>2</sup>

Dengue infection is caused by dengue virus which is a mosquito-borne flavivirus. It is transmitted by *Aedes aegypti* and *Aedes albopictus*. There are four distinct serotypes, DEN-1, 2, 3 and 4. Each episode of infection induces a life-long protective immunity to the homologous serotype but confers only partial and transient protection against subsequent infection by the other three serotypes. Secondary infection (by another serotype) is a major risk factor for DHF, mainly due to antibody induced enhancement (see [section 3.3](#)). Epidemiologic studies have identified young age, female sex, high body-mass index, virus strain or virulence and genetics of the human host e.g. major histocompatibility complex class I related sequence B and phospholipase C epsilon 1 genes as risk factors for severe dengue.<sup>4, 5, 6, 7</sup>

All four serotypes may be circulating in the population at any one time but from the experience in the south-east Asia it appears that the predominant circulating dengue virus will show a sinusoidal pattern – with a peak to peak interval of 6-7 years ([Figure5](#)). It is likely that this interval allows a buildup of immuno-naïve population of children.