

# Immunisation infection disease



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Immunisation has been continually confirmed in both research trials and in the field to be one of the most successful medical interventions we have to avert disease. As Mims et al (2004: 513) outlines, the rationale of immunisation is simple: to provoke a primed status so that on initial contact with the applicable infection a quick and successful secondary immune response will be induced, leading to the avoidance of disease. A vital part of immunisation programs is the production of 'herd immunity'-that is an increase in the populations overall immunity status to the point that successful transmission cannot occur due to a lack of susceptible individuals. According to Rogers et al (1995), opposition in this field arose as early as the 19<sup>th</sup> century when vaccination was first introduced in Europe. There were instant objections on religious grounds and doubts about the effectiveness of vaccines were also articulated along with the rights of the individual to refuse immunisation. Present-day objections to mass child immunisation reverberate these early apprehensions. Below an overview is given of the sociological factors associated with non or under immunised children in developed countries. How these factors combine to explain this immunisation status is additionally discussed along with suggestions of potential efforts to increase immunisation uptake rates.

A number of studies (Brynley et al 2001 & Turner et al 2003) conducted in developed countries have identified many sociological factors that are associated with low immunisation uptake among children. Primarily these factors include unemployment, low or high maternal education, single parent status, overseas birth or late birth order and low socio-economic status. In addition to these primary factors other reasons for reduced immunisation

uptake are associated with immunisation myths, inadequate service provision or access, child gender/age, late commencement of immunisation and maternal mental instability. A child's low immunisation status may be the result of one or a combination of the above interacting factors.

There are a variety of myths circulating in the community with regards to immunisation. Begg and Nicoll(1994) noted some common myths that include: " a child with allergies should not be immunised, children taking antibiotics shouldn't be vaccinated and immunisation is now unnecessary." Although most myths have a tangible basis with traceable origins all myths should be disregarded on scientific grounds. According to Begg and Nicoll most immunisation myths emerge due to the ignorance of health professionals compounded by the propagation of conflicting material. The media has been quick to take advantage of the profession's ignorance, predominantly where there are questions about the risks coupled with immunisation. Hall (2001) thus puts forward that parents who are unresolved about child vaccination may receive medical advice which is uncertain, while receiving from those in opposition to immunisation strongly argued and seemingly well researched information. A great deal of the controversy surrounding immunisation appeals to parents' deep-founded regard for the wellbeing of their children and their trepidation principally of injections. Hall also suggested that parents may have difficulty in conveying their concerns to health professionals, and these concerns may induce parents to lean towards arguments against immunisation. Such arguments endow parents' who have immunisation reservations with rationale to oppose vaccinating of their children.

Low education can greatly disadvantage a mother making decisions concerning immunisation. Forrest et al (1998) mentioned that such a mother may not be able to read or properly comprehend vaccination information and thus not base decisions regarding their infant's health on scientific evidence. The parental response therefore to a child's immediate distress may outweigh their attitude towards future benefits from vaccination. Those struggling due to a language barrier, particularly migrants and those of ethnic origin may also encounter similar difficulties. Conversely Rogers et al (1995) explains that people with high education usually choose to oppose vaccination for other reasons. These parents' rationale is multifaceted being deduced

from a mixture of world views held about healing, the environment, holism and responsibilities of parenting combined with the reading of scientific and alternative literature which cast doubts on the effectiveness of immunisation. Lack of education may also be a barrier to individuals who are unemployed or of low socio-economic status (SES) due to the above reasons. As evident in a study conducted by Li and Taylor (1993), this may be further compounded by low financial position. With a high proportion of the unemployed or those of low SES living in temporary housing, especially in inner city districts, it may be hard for health professionals to keep track of immunisation records and provide reminders about necessary appointments. Those with low income as described by Hull et al (2001) may also not have use of a vehicle making it difficult to access immunisation services; this is a particular problem for those who live in rural areas and can lead to incomplete immunisation in infants.

Children from large families and of late birth order or those of single parents have also been found by studies conducted by Hull et al (2001) and Li and Taylor (1993), to have lower immunisation uptake. Hull et al noted that single parents may encounter greater difficulties in both organising periods off work and have monetary limitations that increase the difficulty in accessing immunisation services. Likewise as discussed by Li and Taylor, parents with many children may find it hard to access immunisation services due to busy schedules or transportation issues. Moreover parents of large families may have had previous adverse immunisation experiences with elder siblings and thus their caution or opposition to vaccination is reflected in the lack of immunisation among younger siblings. Harrington et al (2000) suggested that adverse immunisation experiences are associated with the combination of cramped clinics, long waiting times, inconvenient hours and trouble acquiring an appointment. Additionally many mothers undergo emotional distress due to the knowledge that they are party to the pain inflicted on their infant as a result of vaccination. This perhaps is integrated in the opinion articulated by some parents that health centre immunisation is intolerably forceful and callous due to the lack of compassion shown by health professionals; with evidence revealed in the study conducted by Harrington et al, that mothers prefer to have their infant vaccinated by general practitioner, in a ratio of > 4: 1, with the pre-existing relationship helpful during immunisation visits.

A study conducted on factors associated with low immunisation uptake (Hull et al 2001) also demonstrated a strong association between late immunisation commencement and low overall immunisation uptake. A late

commencement of immunisation may echo a parent's attitude to vaccination or reflect a lack of knowledge regarding immunisation as a whole or its schedule. Hull et al also noted that illness is the primary cause for late commencement with many parents believing that there is an increased risk coupled to vaccination during this time. The decision to vaccinate may be further confused by dissenting personal attitudes towards vaccination. Similarly a study conducted by Turner et al (2003) found that women suffering from mental health problems including depression and anxiety, several months after birth were between 3 and 5 times more likely to have commenced the immunisation schedule late or not at all. Mothers with mental instability may find the seemingly normal task's associated with motherhood difficult. With the maintenance of a normal day a challenge the importance of immunisation may be decreased.

Gender can also affect immunisation uptake however as illustrated by Markuzzi et al (1997), this is dependant on the specific disease to which vaccination may confer protection. For example Markuzzi et al noted that in the UK it has until recently been considered that boys do not require vaccination against rubella. Therefore the live attenuated vaccine was only administered to adolescent girls to protect them from developing the disease while pregnant and transmitting it to the foetus resulting in congenital rubella syndrome. Consent is an additional problem which may affect vaccination rates, especially for overseas visitors or those from minority ethnic groups who may not understand the language of the country in which they now reside. Even with parental consent (Forrest et al 1998) a child cannot be vaccinated unless they are willing. Vandermeulen et al 2007 notes

that adolescents are particularly hard age group to reach as many have a poor perception of risk leading to a greater fear of the initial pain of immunisation than the associated disease. Deferral of appointments for seemingly inadequate reasons such as social commitments also hinders this age bracket.

Although in Australia national immunisation coverage levels may surpass 90 percent ( *Childhood Immunisation Coverage* 2007), there is a considerably lower level of protection among certain subgroups of the population. These pockets of under vaccinated individuals make the population susceptible to major outbreaks. As further suggested by *Childhood Immunisation Coverage* , monitoring the coverage at smaller geographic levels helps ensure that these impending pockets of children are recognised by target interventions and decrease the threat of potential disease outbreaks. Additional efforts to boost immunisation rates in the community should thus focus on increasing service accessibility. As recommended by Forrest et al (1998) and Li and Taylor (1993) this could be achieved via facilitating immunisation session times that parents find easy to attend, the use of mobile vans or other home vaccination methods and the provision of opportunistic immunisations when children appear at hospitals, general practices or health clinics for different reasons. Moreover Li and Taylor also note that attempts should be made to enhance the services provided by health care clinics by the extension of crèche facilities for siblings and the continual education of health providers. This education should focus upon details concerning new vaccinations and current circulatory immunization myths, including there rebuttal. As advised by Harrington et al 2000, health practitioners should also be further

encouraged to listen and treat parents concerns seriously . In addition to the education of health practitioners, efforts to increase immunisation uptake should include community education. Enhanced community immunisation education could be achieved, as suggested by Harrington et al, by the increased provision of information packages that are culturally appropriate in a variety of languages to expectant mothers. Furthermore television campaigns depicting children with various diseases could counteract various immunisation myths by forcing parents to understand to painful reality of potential outbreaks as a result of vaccination opposition. In addition to the above, Turner et al (2003) notes that postnatal strategies aimed at increasing mother psychosocial health should better their immunisation patterns for their infants.

As a public health measure, immunisation has had a significant role in decreasing the burden of disease. It is of public health concern to increase immunisation uptake rates, as this decreases the possibility of disease transmission, and hence complications arising from infectious disease outbreaks. It is therefore vital that equity is aspired to via efforts to increase vaccination rates among target subgroups that are affected by the sociological factors discussed above.

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