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# CANCER THERAPY &

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## The challenge of eradicating Meningococcus outbreaks through vaccines

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About 1.0 – 1.2 million cases of cerebrospinal meningitis infections are recorded each year, with a case fatality of about 70-90% without the use of antibiotics and 10% even with the use of antibiotics. Meningococcal meningitis is the major cause of bacterial meningitis all over the world. Due to the combined problem of antibiotics resistance and the development of long-term sequelae/ complications, the use of vaccines could provide the best option for the control of bacterial meningitis. This study reviewed the vaccine strategy for the control of meningococcus and found that three vaccine strategies have been commercialized. The strategy involved vaccine production using capsular polysaccharide, capsular polysaccharide-protein conjugate and outer membrane vesicles. The study

also identified challenges of using vaccine to eradicate meningococcus. These problems include the presence of diverse serogroups, strains and clonal complexes of the bacteria inhabiting different geographic locations, lack of cross protection among different vaccines for the different serogroups and high costs of vaccination. More research is therefore required to develop a common vaccine that will protect against all serogroups, strains and clonal complexes of Nm and possibly the other two species causing bacterial meningitis i.e. *Haemophilus influenzae* type b and *Streptococcus pneumoniae*. Polyvalent vaccine produced using both capsular-protein conjugate and outer membrane vesicle is likely going to be the ideal candidate.

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