Meningitis and Septicaemia 2019
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Updates on (1) epidemic meningitis in Sub-Saharan Africa; (2) Phase 2 trial results of a new polyvalent (ACYWX) meningococcal conjugate vaccine; (3) a summary of the planned Phase 3 trials and (4) strategies on how this new meningitis vaccine could be used.

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The public health impact that has followed the introduction of the Men A conjugate vaccine in Sub-Saharan Africa continues to be robust. During the last two years no confirmed case of Group A *meningitidis* meningitis has been reported from meningitis belt countries. African meningitis surveillance data over the last 10 years have shown a major decrease in "suspected meningitis" cases and bacteriologic studies have clearly shown the potential for Group C, W and X meningococci to cause epidemics.

Suspected cases of meningitis and pathogens identified since the introduction of the Men A conjugate vaccine (15 meningitis belt countries; WHO Meningitis Weekly Bulletin)

Year	Suspect cases	*Nm A*	*Nm C*	*Nm Y*	*Nm W*	*Nm X*
2010	30,103	439	4	0	726	55
2011	22,000	197	5	1	513	154
2012	28,805	88	4	1	1,009	138
2013	19,685	22	10	0	237	15
2014	21,641	5	48	1	286	11
2015	27,304	80*	1,224	0	545	20
2016	26,029	22*	375	6	719	68
2017	34103	2	891	2	263	333
2018	20,843	0	466	0	71	293
2019 (wk 26)	13,120	0	317	0	96	102

*Not confirmed by PCR

To meet the challenge of nonA meningococcal disease, a pentavalent meningococcal (ACYWX) vaccine has been developed and is now in Phase 3 clinical trials in India and Africa. Results of a Phase 2 study conducted at the Center for Vaccine Development in Bamako demonstrated that the vaccine is safe when given to 12-23 month olds and that high titers of bactericidal antibodies against all 5 serogroups are detected one month after inoculation. There was no enhancement in antibody response when an aluminum phosphate adjuvant was added.

Phase 3 studies in 2-29 year olds have commenced in The Gambia and Mali to test the safety and immunogenicity of the ACYWX conjugate vaccine when compared to a licensed quadrivalent (ACYW) meningococcal conjugate vaccine. A Phase 3 study in adults will begin later this year at 13 Indian sites where the safety and immunogenicity of the ACYWX conjugate vaccine will be compared to a licensed polyvalent meningococcal vaccine. Funds are currently being solicited to support an infant study to support an EPI indication.

Three Africa-specific cost effectiveness studies on the use of polyvalent meningococcal conjugate vaccines have been published. All three studies concluded that the expanded use of polyvalent meningococcal conjugate vaccines in the EPI as well as in reactive or preventive campaigns would be cost effective. Furthermore, if a new polyvalent meningococcal conjugate vaccine induces herd protection

against all vaccine serogroups there is the real possibility that epidemic meningococcal disease could be eliminated in Africa.