

Immunogenicity of a Single 4CMenB Vaccine Booster in Adolescents 11 Years After Childhood Immunisation

Andrew J Pollard

Christine Rollier

Meningitis Research Conference, 1-3 November 2021

License for use of 4CMenB

Table 1. Summary of posology

Age at first dose	Primary Immunisation	Intervals between Primary Doses	Booster
Infants, 2 months to 5 months ^a	Three doses each of 0.5 ml	Not less than 1 month	Yes, one dose between 12 and 15 months of age with an interval of at least 6 months between the primary series and booster dose ^{b, c}
	Two doses each of 0.5 ml	Not less than 2 months	
Infants, 6 months to 11 months	Two doses each of 0.5 ml	Not less than 2 months	Yes, one dose in the second year of life with an interval of at least 2 months between the primary series and booster dose ^c
Children, 12 months to 23 months	Two doses each of 0.5 ml	Not less than 2 months	Yes, one dose with an interval of 12 months to 23 months between the primary series and booster dose ^c
Children, 2 years to 10 years	Two doses each of 0.5 ml		booster dose should be considered in individuals at continued risk of exposure to meningococcal disease, based on official recommendations ^d
Adolescents (from 11 years) and adults*			

Unlikely to be cost-effective



4CmenB schedule in UK

Immunisation
against
infectious
disease;
Green Book

Age	Primary/Booster	Dose
Two months	Primary**	One dose – 4CMenB vaccinet
Four months	Primary**	One dose – 4CMenB vaccinet
One year	Primary (MenC) & Booster (Hib)	One dose - Hib/MenC conjugate vaccine
	Booster	One dose – 4CMenB vaccine
Around 14 years	Booster	One dose - MenACWY conjugate vaccine



UK Sept 2015 :
4CMenB 2+1
schedule in infants

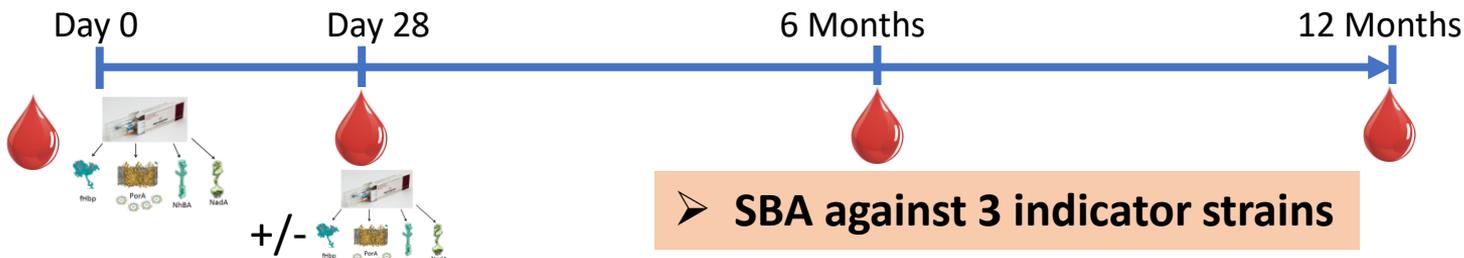
➤ From 2026, **11 years old in UK will have received 3 doses in infancy**

➤ **Sufficient memory for a single dose at that age?**

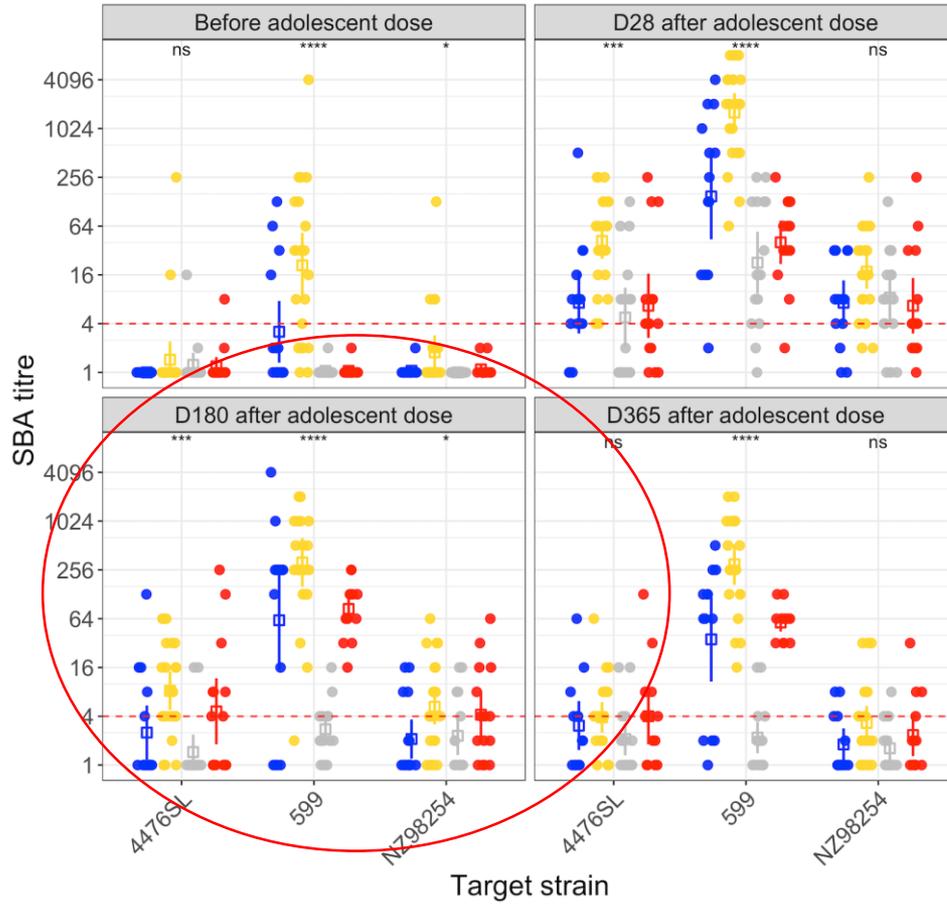
First (small) clinical trials 4CMenB infants in 2006

➤ 11 years old in 2017

Status	Number / age of doses received in childhood	Age at Last dose	Adolescent regimen tested	N
Vaccinated in infancy	1 (12M) 3 (6, 8, 12M) 4 (2, 4, 6, 12M)	12 months	1 (Day 0)	16
Vaccinated infancy + preschool	3 (12, 40, 42M) 4 (6, 8, 12, 40M) 5 (2, 4, 6, 12, 40M)	3 years of age	1	23
Naïve	0	-	1	16
Naïve	0	-	2 (Day 0 + 28)	16



Serum Bactericidal Assay : individual titers



Status and Age at Last dose	Adolescent regimen
 Vaccinated infancy, $\leq 12M$	1
 Vaccinated infancy + preschool, 3 years	1
 Naïve	1
 Naïve	2 (Day 0 + 28)

Conclusions

- Well tolerated (expected reactogenicity)
- Small sample size → descriptive study
- Poor persistence prior to dosing
- Best responses if received a preschool dose
- B cell memory responses are not adequately primed ≤ 12 months of age



Christine S Rollier

Christina Dold

Luke Blackwell

Aline Linder

Laura Silva-Reyes

Elizabeth Clutterbuck

Kimberly Davis

Karen Ford

Xinxue Liu

Daniel O'Connor

Matthew D Snape

Andrew J Pollard



Public Health
England



Vaccine Evaluation Unit, Manchester

Ann Holland

Hannah Chan

Holly Harbinson

Ray Borrow



Oxford Biomedical Research Centre
Enabling translational research through partnership