

# Gavi and Multivalent Meningococcal Conjugate Vaccine

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**Conflicts of Interest: None**

# Gavi and Meningococcal Vaccines

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- **Meningococcal A Conjugate Vaccine (i.e., MenAfrivac) rollout began in 2010 with Gavi support, with 26 countries in the African meningitis belt eligible for Gavi funding support**
  - Routine immunization
  - Preventive campaigns targeting individuals 1-29 years of age
- **No meningococcal A cases identified in belt since 2018**
- **In 2018, non-A outbreaks prompted Gavi Board to authorize multivalent meningococcal conjugate vaccine, contingent on**
  - Availability of a licensed product
  - Outcomes of regulatory and technical review processes (including WHO PQ and SAGE recommendations)
  - Meeting of specific vaccine cost targets

# Meningococcal vaccination scenarios

Two broad strategies possible, uniform vs. risk-based. Within each, different scenarios considered based on dosing for routine, age group for campaigns and national/subnational scope. Not exhaustive, other scenarios possible.

	Scenario	Routine		Campaign	
		1 dose 15-18m	2 doses 9/15-18m	1 dose 1-29 yo	1 dose 5-14 yo
Uniform delivery strategy	1	✓		✓	
	2	✓			✓
	3		✓	✓	
	4		✓		✓
Risk-based strategy (not exhaustive)	5	✓		✓	
		✓			
	6	✓			✓
		✓			
	7		✓	✓	
			✓		
	8		✓		✓
			✓		
9	✓			✓(subnational)	

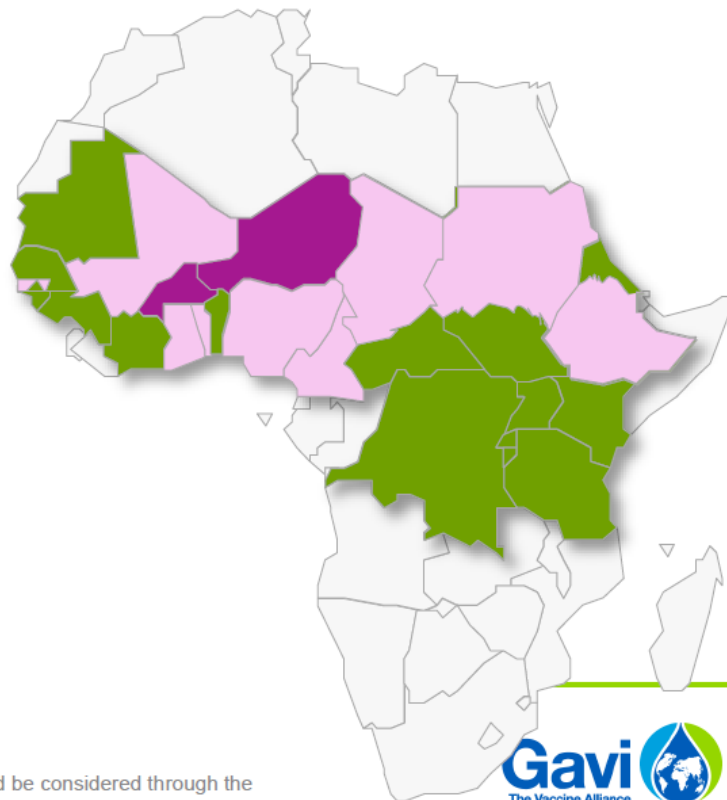
- All meningitis belt countries (N=26)
- High/Medium Incidence countries (N=11)
- Low Incidence countries (N=15)

Scenario 9 used as base for the analysis (scenario 2 as comparator)

# Potential country risk classification

- A risk-based delivery strategy would present a more cost-effective scenario by focusing on higher risk countries to introduce in routine and higher risk areas to additionally implement campaigns
- The current classification is based on the incidence of meningococcal meningitis using suspected cases, taking into account surveillance data and MenAfriVac introduction
- Pending additional data and technical recommendations from SAGE, classification of countries and higher risk areas might vary

- **High Incidence Countries (N=2):**  
Burkina Faso and Niger
- **Medium Incidence Countries (N=9):**  
Mali, Nigeria\*, Chad, Sudan, Ethiopia, Cameroon, Gambia, Ghana, Togo
- **Low Incidence Countries (N=15):**  
Senegal, Mauritania, Cote d'Ivoire, Benin, CAR, Eritrea, South Sudan, Guinea, Guinea-Bissau, DRC, Burundi, Kenya, Rwanda, Uganda, Tanzania



# Summary of health impact, cost, and value for money (2021-2035)

**Nigeria excluded**

*Cost projections are unconstrained. Values do not account for anticipated introduction of current portfolio and other VIS candidate vaccines that may reduce the number of planned multivalent meningococcal introductions.*

Impact scenarios: routine 1 or 2 dose at 9 and/or 15-18 mo., campaign 5-14 yo. (risk based) or routine 1 or 2 dose at 9 and/or 15-18 mo., campaign 1-29 yo. ( uniform delivery) <sup>3,4</sup>

		Risk-based	Uniform delivery	Meningitis A (current portfolio) <sup>1</sup>
<b>Impact</b>	Fully vaccinated persons	~196M	~461M	~228M
	Total future deaths averted	~50-106K	~70-242K	~262K
<b>Cost <sup>4</sup></b>	Gavi procurement costs	\$463M	\$1,708M	\$153M
	Gavi operational costs	\$108M	\$522M	\$4M
	Total Gavi cost	\$571M	\$2,230M	\$157M
	Country procurement costs	\$213M	\$546M	\$70M
	Country operational costs	\$24M	\$242M	Not estimated in VIS
	Country recurrent delivery costs	\$88M	\$176M	Not estimated in VIS
	Total Country cost	\$325M	\$965M	Not estimated in VIS
	<i>Total cost</i>	<i>\$895M</i>	<i>\$3,195M</i>	Not estimated in VIS
<b>Value for money</b>	Cost per death averted <sup>2</sup>	~\$6,363-13,383	~\$9,305-32,117	~\$859

Note: Cost projections are unconstrained. Values do not account for anticipated introduction of current portfolio and other VIS candidate vaccines that may reduce the number of planned multivalent meningococcal vaccine introductions.

1. Impact and cost projections only through 2030; 2. Calculated using procurement cost only

22 3. Cambridge & IPM model; multiple scenarios due to unknown product characteristics and recommended vaccination strategy: 1-dose or 2-dose schedule, introduction into routine for high and medium-risk countries with campaign at time of introduction for either 5-14 yo. or 1-29 yo.

4. Cost presented in risk based scenario reflects a 1 dose 15-18 m schedule and campaign at introduction for 5-14 yo. in only high and medium-risk countries; costs presented in uniform delivery scenario reflects a 1 dose 15-18 m schedule and campaign at introduction for 1-29 yo. in

VACCINE	2016–2020			2021–2025			Approximate Expenditure / Death Averted
	Expenditure in US\$ millions	Number immunised	Deaths averted	Expenditure in US\$ millions	Number immunised	Deaths averted	
Pneumococcal	2,402	190m	500k	1,304	280m	~700k	1900
Rotavirus	668	140m	90k	558	220m	~150k	3700
Pentavalent <sup>a</sup>	544	310m	3.5m	348	210m	~2.8m	120
IPV <sup>b</sup>	495	210m	-	800	190m	-	
Measles and rubella <sup>b</sup>	376	690m	1.7m	294	490m	~1.4m	200
HPV <sup>b,c</sup>	206	14m	300k	516	50m	~950k	500
Typhoid <sup>d</sup>	41	40m	20k	302	250m	~150k	2000
Yellow Fever <sup>b</sup>	263	150m	650k	424	240m	~700k	600
Meningitis A <sup>b</sup>	169	140m	150k	115	80m	~100k	1200
Japanese encephalitis <sup>b</sup>	9	19m	8k	9	13m	~5k	1800
Ebola	20	140m	-	150	-	-	
Cholera <sup>e</sup>	133	19m	-	32	-	-	
VIS vaccines <sup>f</sup>	46	-	-	360	180m	~40–90k	
Other <sup>g</sup>	39	-	-	55	-	-	
CEPI outbreak vaccines <sup>h</sup>	77	-	-	0	-	-	
<b>TOTAL</b>	<b>5.5 billion</b>		<b>~7 million</b> original forecast: 5–6 million	<b>5.3 billion</b>		<b>7–8 million</b>	

Risk-based  
MMCV: \$6,300 to  
\$13,400 per  
death averted

