

**Meeting of the Strategic Advisory Group of Experts on Immunization (SAGE)**  
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# **Roll out of the meningococcal A conjugate vaccine through mass vaccination campaigns in countries of the African meningitis belt**

*current status, vaccine coverage,  
epidemiological and economic impact*

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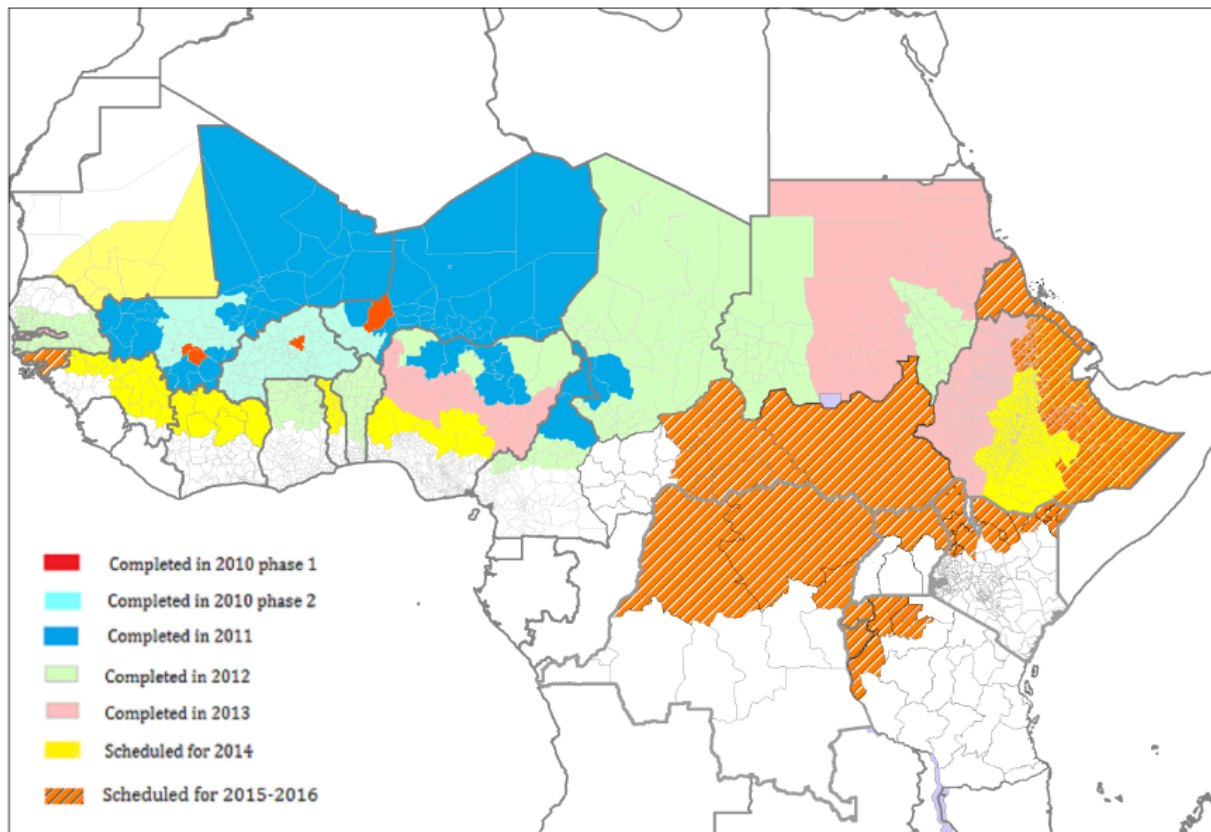


**World Health  
Organization**

# Regional Strategies for Meningitis A Elimination

- Inducing herd immunity through mass vaccination campaigns in the 26 countries of the belt (2010-2016)
- Protecting new birth cohorts through:
  - Introducing MenAfriVac in routine EPI
  - Organizing periodic follow-up campaigns in the < 5 yrs, in areas not covered by routine immunization
- Surveillance and epidemic response
- Evaluation of the impact of MenAfriVac

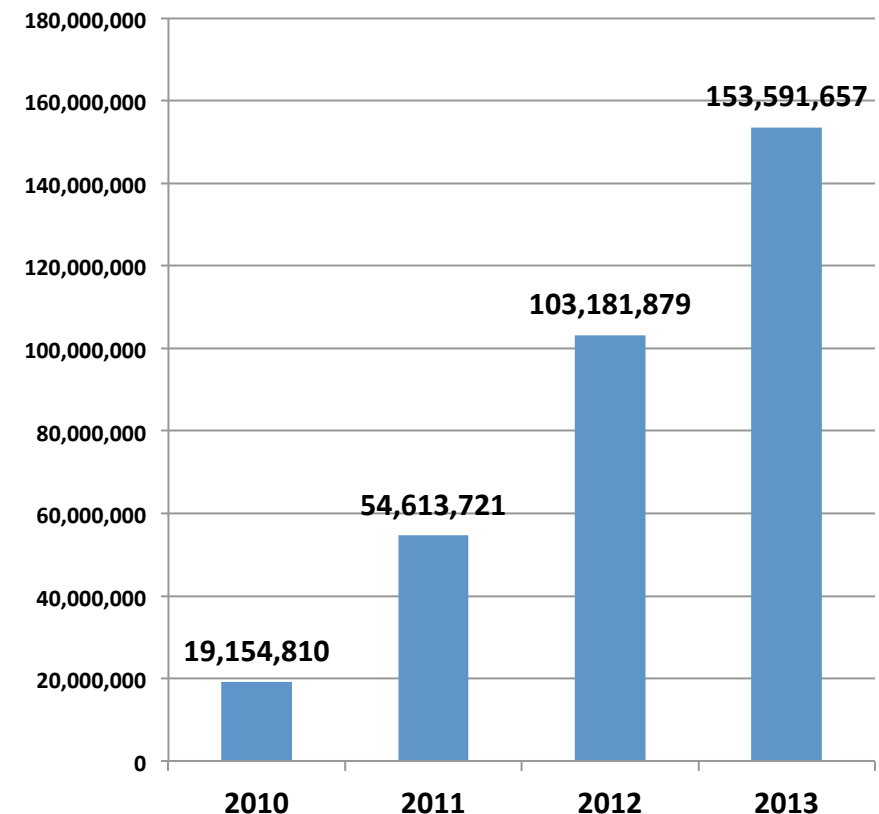
# MenAfriVac vaccine roll out 2010-2016



## 26 Target Countries:

**Burkina Faso, Mali, Niger, Nigeria, Chad, Cameroon, Sudan, Ghana, Benin, Senegal, Ethiopia, DRC, South Sudan, Cote d'Ivoire, Togo, Uganda, Guinea, The Gambia, CAR, Eritrea, Kenya, Burundi, Guinea Bissau, Mauritania, Rwanda, Tanzania**

Cumulative number of vaccinated persons 2010 - 2013



*Target population 2014 = 69,949,250*

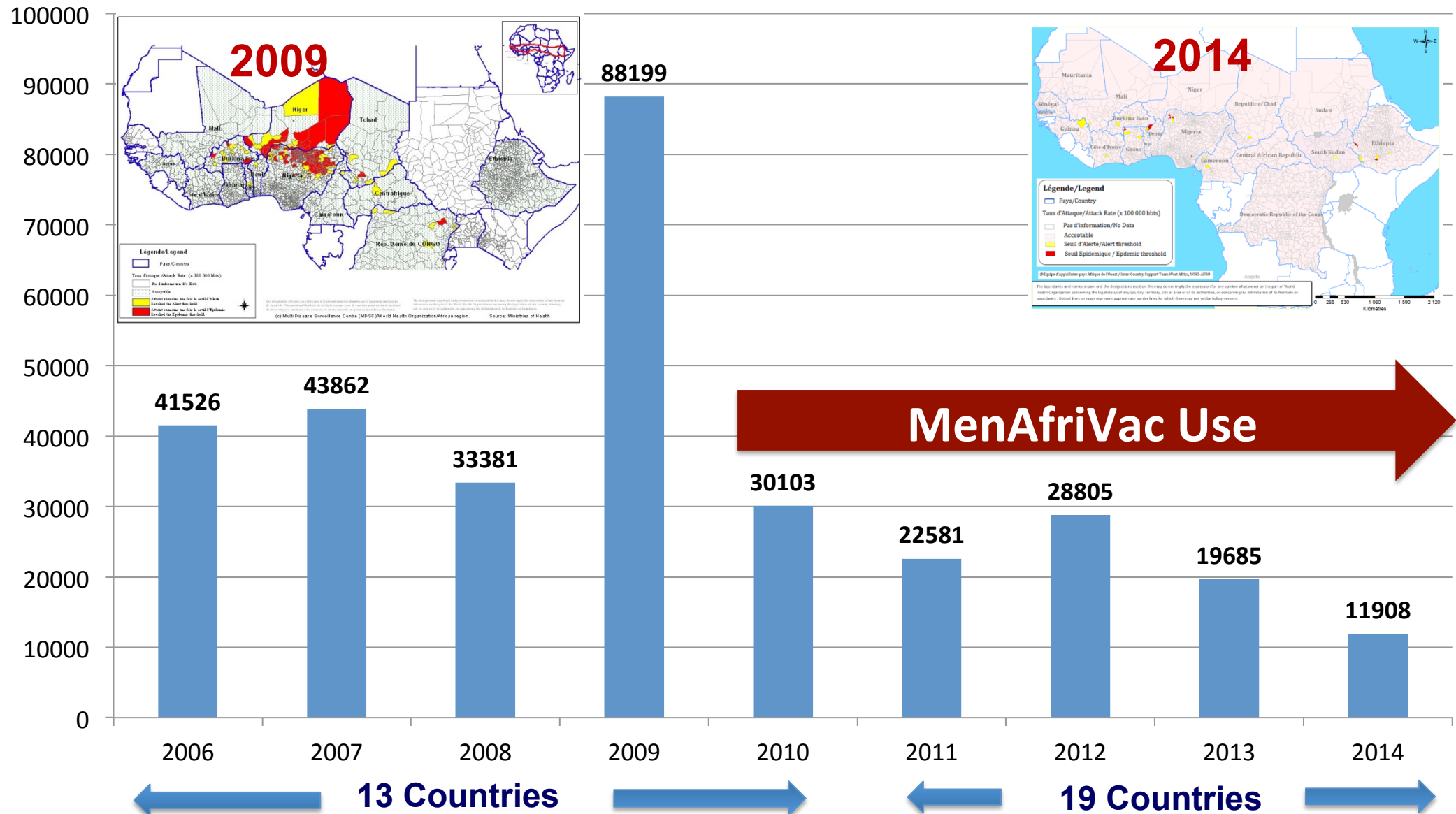
# MenAfriVac Rollout and Coverage

## 12 Countries from 2010 to 2013

Countries	Nb of regions/ States vaccinated	Target population 1-29 years old	Population Vaccinated	Administrative coverage	Vaccine coverage surveys
<b>Burkina Faso</b>	Country wide	11 133 831	11 421 502	102.58%	97.84%
<b>Mali</b>	Country wide	10 854 599	11 109 484	102.35%	96%
<b>Niger</b>	Country wide	10 870 817	10 575 365	97.49%	91%
<b>Nigeria</b>	17 N States	55 964 859	51 745 045	89.8 %	69.9%
<b>Chad</b>	Country wide	9 223 913	8 732 251	94.6 %	NA
<b>Cameroon</b>	4 N regions	6 125 854	6 510 729	112.8%	73.5%
<b>Ghana</b>	3 N regions	3 098 348	3 038 393	98.06 %	90.1%
<b>Benin</b>	5 N regions	2 595 660	2 718 459	104,73 %	96%
<b>Senegal</b>	8 regions	4 383 255	4 216 691	NA (data retention)	96.2%
<b>Sudan</b>	Country wide	24 761 871	23 670 245	96%	94%
<b>Ethiopia</b>	7 regions	18 926 853	18 625 074	98.4%	NA
<b>The Gambia</b>	Country wide	1 177 923	1 228 419	104%	96.6%
<b>TOTAL</b>		<b>159 117 783</b>	<b>153 591 657</b>	<b>96.5%</b>	

# Meningitis case counts in countries under enhanced surveillance 2006 – 2014 (Week 31)

➔ **Decrease in the magnitude of epidemics and overall number of cases**



# Bacteriological profile of meningitis cases by country, 2009

→ Large MenA epidemic in Nigeria and Niger

→ 56,128 and 13,449 out of 88199 cases; 5352 deaths overall

Countries	Number CSF	Contam'n	Negative	MenA	Men W135	Other Men	Pneumo	Hib	Other Patho
Benin	143	0	60	0	3	0	54	3	17
Burkina Faso	275	5	151	36	3	0	78	0	2
Cameroun	295	50	154	2	77	0	7	5	0
Centrafrique	85	0	83	0	0	0	1	0	1
Cote d'Ivoire	121	0	102	0	0	2	9	6	2
Ethiopia	-	-	-	-	-	-	-	-	-
Ghana	76	0	16	1	2	16	41	4	16
Mali	53	0	34	16	2	0	1	0	0
Niger	3 423	0	1 837	1 460	9	8	62	10	37
Nigeria	700	0	250	434	13	0	2	0	1
RD Congo	52	2	33	0	0	17	0	0	0
Tchad	288	0	110	45	58	0	67	8	0
Togo	177	-	-	2	0	4	36	3	0
<b>Total</b>	<b>5 688</b>	<b>57</b>	<b>2 830</b>	<b>1 996</b>	<b>167</b>	<b>47</b>	<b>358</b>	<b>39</b>	<b>76</b>

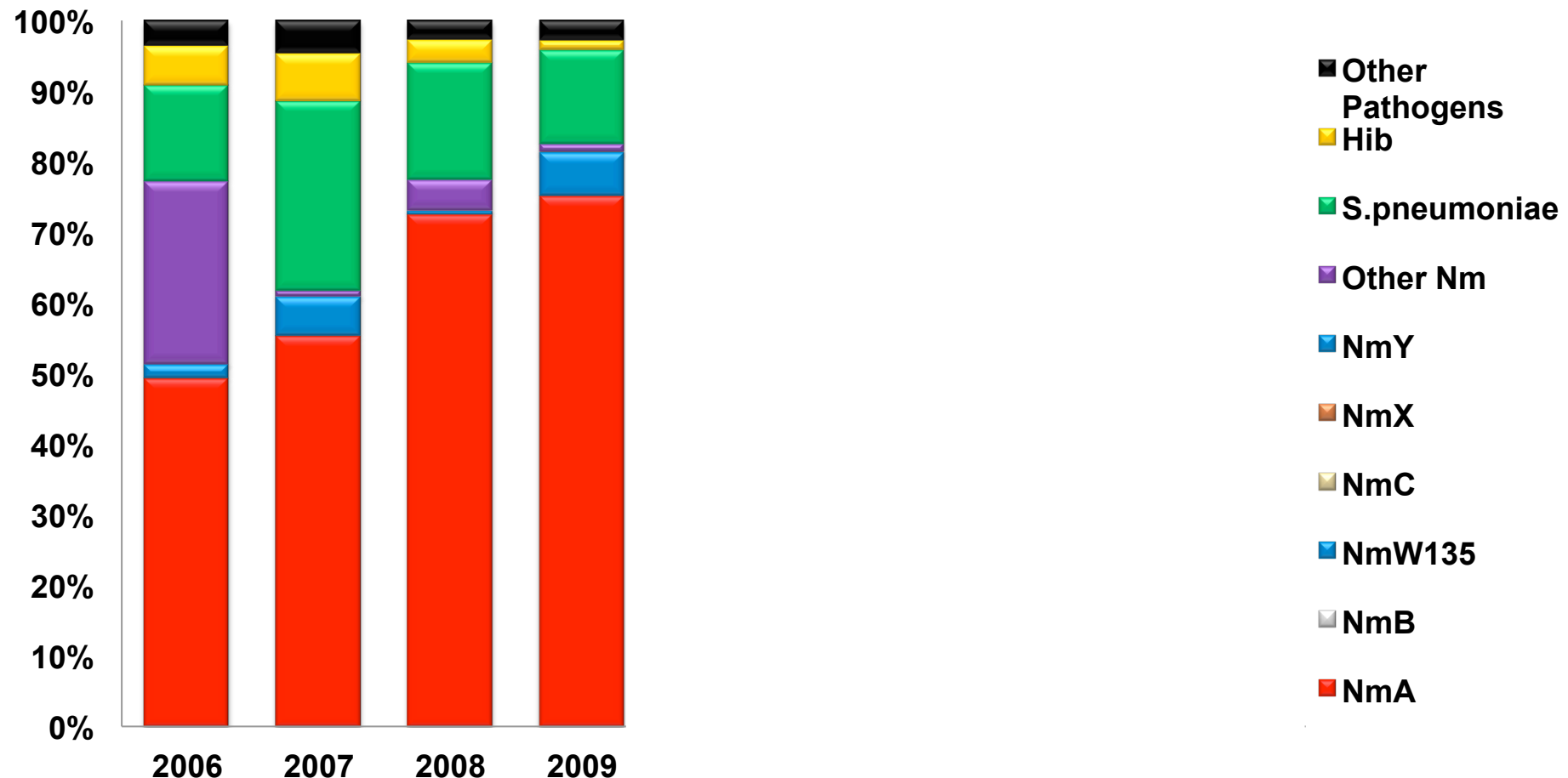
# Bacteriological profile of meningitis cases by country, 2014

- Decrease in MenA cases and elimination of MenA in vaccinated countries
- increase in the relative proportion of other bacteria, stable case counts

Countries	Number CSF	Contam' n	Negative	Men A	Men B	Men C	Men X	Men Y	Men W135	Other Nm	Pneumo	Hib	Other
Benin	79	0	71	0	0	0	0	0	4	0	3	0	1
Burkina Faso	1 895	0	1 135	0	0	0	2	0	157	15	404	9	0
Cameroun	136	0	115	0	0	0	0	0	0	0	11	0	10
Centrafrique	-	-	-	-	-	-	-	-	-	-	-	-	-
Cote d'Ivoire	-	-	-	-	-	-	-	-	-	-	-	-	-
Ethiopia	-	-	-	-	-	-	-	-	-	-	-	-	-
Ghana	332	0	247	0	2	0	0	1	42	9	29	0	2
Guinée	156	0	140	5	0	0	0	0	8	0	0	3	0
Gambia	88	0	84	0	0	0	0	0	2	0	2	0	0
Mali	157	0	126	0	0	0	3	0	2	0	22	4	0
Mauritania	-	-	-	-	-	-	-	-	-	-	-	-	-
Niger	169	1	119	0	0	8	0	0	14	0	20	3	4
Nigeria	3	0	0	0	0	3	0	0	0	0	0	0	0
RD Congo	270	3	223	0	0	1	0	0	0	1	6	1	35
Senegal	154	0	145	0	0	0	0	0	2	0	1	1	5
South Sudan	-	-	-	-	-	-	-	-	-	-	-	-	-
Sudan	49	0	22	0	0	0	0	0	0	0	2	1	1
Tchad	-	-	-	-	-	-	-	-	-	-	-	-	-
Togo	44	0	28	0	0	0	0	0	1	4	9	2	0
<b>Total</b>	<b>3 532</b>	<b>4</b>	<b>2 455</b>	<b>5</b>	<b>2</b>	<b>12</b>	<b>5</b>	<b>1</b>	<b>232</b>	<b>29</b>	<b>509</b>	<b>24</b>	<b>58</b>

# Trends in bacteriological causes of meningitis cases in the belt, 2006-2014 (Week 31)

→ MenA cases decreasing in belt countries: 2009 (75%) to 2014 (2%)



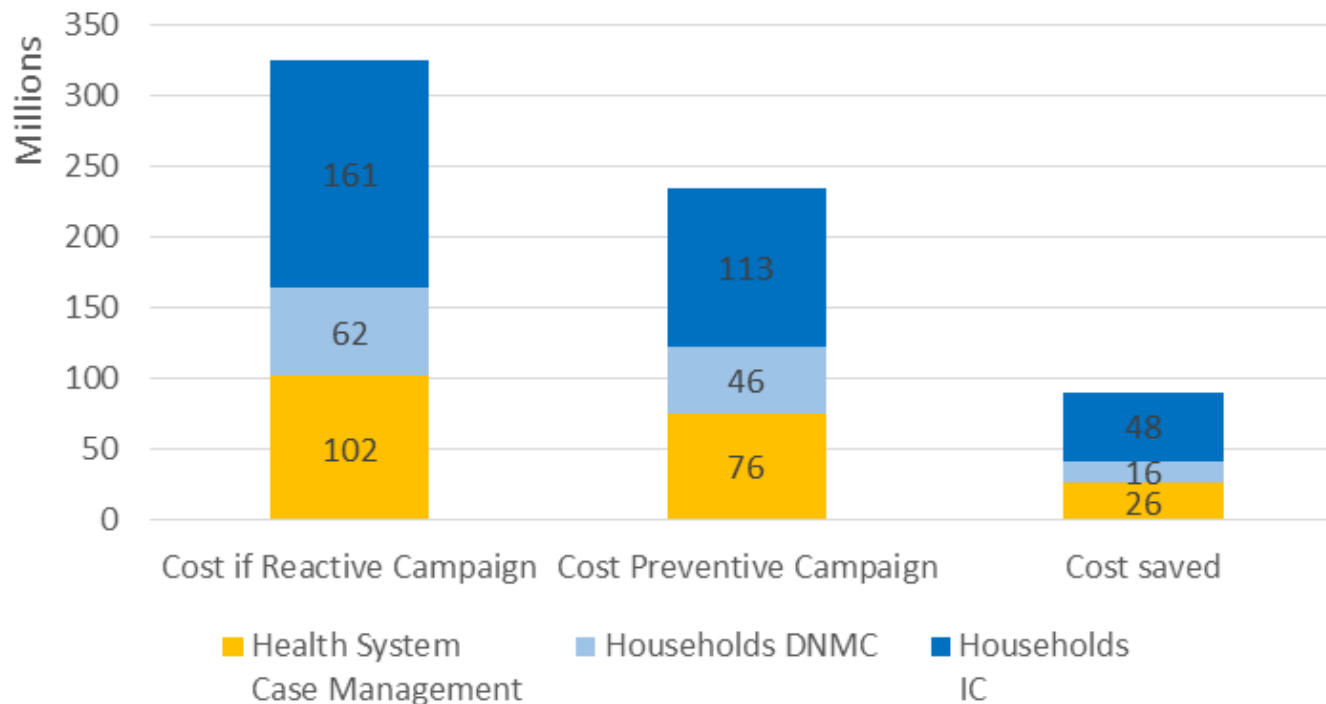


# Changing Epidemiology → Adapted Strategies

- ❑ Decrease in the number of MenA cases in vaccinated areas
  - ❑ 99% reduction in risk of menA disease in Burkina Faso (Novak et al., Lancet Infect Dis 2012)
  - ❑ 94% reduction in meningitis incidence in Chad, evidence of herd protection (Daugla et al., Lancet 2014)
- ❑ Elimination of MenA carriage after MenAfriVac vaccination
  - ❑ Burkina Faso (Kristiansen et al, CID 2013)
  - ❑ Chad (Daugla et al, Lancet 2014)
- ❑ Decrease in the overall number of meningitis suspect cases, and increase in the **proportion** of cases due to other Nm (W, X, Y) and other bacteria (Spn, Hib)
- ❑ → Case Based Surveillance & Lab confirmation +++
- ❑ → Ongoing revision of the definition of meningitis alert and epidemic thresholds, and of the meningitis outbreak response strategies

# Short term Economic Impact of Preventive Vaccination Campaigns, 2010-2016

Economic Impact of preventive campaign with  
MenAfrivac, 2010-2016



*From 2010 to 2016, MenAfrivac preventive campaigns will save:*

- \$16 million (households)
- \$48 million (loss of income & assets)
- \$26 million (health system case management costs)
- Data collection ongoing for vaccination costs savings

# Follow-up & Routine 2015-2017

(Total routine demand 30 million doses / year in the long run)

- Routine 2015 : Burkina Faso, Mali, Niger, Nigeria, Chad, Cameroun, Ghana
- Routine 2016 : Benin, CAR, DRC, Ethiopia, Gambia, Kenya, Senegal, Sudan, Uganda
- Routine 2017: Burundi, RCI, Eritrea, Guinea, Guinea Bissau, Mauritania, Rwanda, South Sudan, Tanzania, Togo

