

**Clinical trial results:**

**A phase IV, open, multicenter, multicountry study to assess the long-term antibody persistence of a booster dose of GlaxoSmithKline (GSK) Biologicals' Haemophilus influenzae type b – meningococcal serogroup C conjugate (Hib-MenC) vaccine given at 12-15 months of age to subjects who were primed in primary study 103974 (HIB-MENC-TT-012) and boosted in study 104056 (HIB-MENC-TT-013 BST:012).**

Due to a system error, the data reported in v1 is not correct and has been removed from public view.

**Summary**

EudraCT number	2006-006460-32
Trial protocol	GB
Global end of trial date	18 May 2010

**Results information**

Result version number	v2 (current)
This version publication date	17 June 2016
First version publication date	29 May 2015
Version creation reason	• Correction of full data set Data correction due to a system error in EudraCT – Results

**Trial information****Trial identification**

Sponsor protocol code	109664,109666,109668
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**Additional study identifiers**

ISRCTN number	-
ClinicalTrials.gov id (NCT number)	NCT00454987
WHO universal trial number (UTN)	-

Notes:

**Sponsors**

Sponsor organisation name	GlaxoSmithKline Biologicals
Sponsor organisation address	Rue de l'Institut 89, Rixensart, Belgium, B-1330
Public contact	Clinical Trials Call Center, GlaxoSmithKline Biologicals, 044 2089-904466, GSKClinicalSupportHD@gsk.com
Scientific contact	Clinical Trials Call Center, GlaxoSmithKline Biologicals, 044 2089-904466, GSKClinicalSupportHD@gsk.com

Notes:

**Paediatric regulatory details**

Is trial part of an agreed paediatric investigation plan (PIP)	No
Does article 45 of REGULATION (EC) No 1901/2006 apply to this trial?	No
Does article 46 of REGULATION (EC) No 1901/2006 apply to this trial?	Yes

Notes:

## Results analysis stage

Analysis stage	Final
Date of interim/final analysis	10 March 2008
Is this the analysis of the primary completion data?	No
Global end of trial reached?	Yes
Global end of trial date	18 May 2010
Was the trial ended prematurely?	No

Notes:

## General information about the trial

Main objective of the trial:

In all evaluable subjects of groups HibMenC and LicMenC at 12 months after the booster vaccination; in all evaluable subjects of groups HibMenC and LicMenC at 24 months after the booster vaccination; in all evaluable subjects of group NoBoost at 40-43 months of age; and in all evaluable subjects of groups HibMenC and LicMenC at 48 months after the booster vaccination:

- To evaluate the persistence of meningococcal C antibodies
- To evaluate the persistence of Haemophilus influenzae type b antibodies.

In all UK evaluable subjects\* of groups HibMenC and LicMenC:

- To evaluate the persistence of anti-pertussis antibodies prior to Infanrix-IPV preschool booster and the response to Infanrix-IPV preschool booster 24 months later.

\* UK pediatric vaccination schedule recommends a DTP booster at the moment of Visit 2 (24 months after study booster vaccination) of our study; the Polish pediatric vaccination schedule recommends a DTP booster before Visit 1 of our study.

Protection of trial subjects:

Vaccines were administered by qualified and trained personnel. Vaccines were administered only to eligible subjects that had no contraindications to any components of the vaccines.

Background therapy: -

Evidence for comparator: -

Actual start date of recruitment	16 May 2007
Long term follow-up planned	Yes
Long term follow-up rationale	Safety, Efficacy
Long term follow-up duration	4 Years
Independent data monitoring committee (IDMC) involvement?	No

Notes:

## Population of trial subjects

### Subjects enrolled per country

Country: Number of subjects enrolled	United Kingdom: 192
Country: Number of subjects enrolled	Poland: 286
Worldwide total number of subjects	478
EEA total number of subjects	478

Notes:

<b>Subjects enrolled per age group</b>	
In utero	0
Preterm newborn - gestational age < 37 wk	0
Newborns (0-27 days)	0
Infants and toddlers (28 days-23 months)	0
Children (2-11 years)	478
Adolescents (12-17 years)	0
Adults (18-64 years)	0
From 65 to 84 years	0
85 years and over	0

## Subject disposition

### Recruitment

Recruitment details: -

### Pre-assignment

Screening details:

During the screening the following steps occurred: check for inclusion/exclusion criteria, contraindications/precautions, medical history of the subjects and signing informed consent forms.

### Period 1

Period 1 title	Booster phase
Is this the baseline period?	Yes
Allocation method	Non-randomised - controlled
Blinding used	Double blind
Roles blinded	Subject, Investigator

Blinding implementation details:

Partially double-blind: The primary phase of the study will be open with respect to the treatment administered, but double-blind with respect to the Hib-MenC and DTPa-IPV lots. The booster phase will be double-blind with respect to the Hib-MenC lots.

### Arms

Are arms mutually exclusive?	Yes
<b>Arm title</b>	Menitorix Group
Arm description: -	
Arm type	Experimental
Investigational medicinal product name	Menitorix™
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Injection
Routes of administration	Intramuscular use

Dosage and administration details:

Menitorix co-administered with Priorix. Menitorix was administered intramuscularly in the deltoid region of the right arm.

Investigational medicinal product name	Priorix-Tetra™
Investigational medicinal product code	
Other name	Priorix TM
Pharmaceutical forms	Injection
Routes of administration	Subcutaneous use

Dosage and administration details:

One dose of Priorix was co-administered with Menitorix. Priorix was administered subcutaneously in the left arm.

<b>Arm title</b>	Meningitec Group
Arm description: -	
Arm type	Active comparator
Investigational medicinal product name	Meningitec™
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Injection
Routes of administration	Intramuscular use

Dosage and administration details:

Meningitec, 0.5 ml, was administered intramuscularly in the right thigh.

Investigational medicinal product name	Pediacel™
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Injection
Routes of administration	Intramuscular use

Dosage and administration details:

Pediacel, 0.5 ml, was administered intramuscularly, in the left thigh.

Investigational medicinal product name	Menitorix™
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Injection
Routes of administration	Intramuscular use

Dosage and administration details:

Menitorix was co-administered with Priorix. One dose of Menitorix was administered in the deltoid region of the right arm.

Investigational medicinal product name	Priorix-Tetra™
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Injection
Routes of administration	Subcutaneous use

Dosage and administration details:

One dose of Priorix was co-administered with Menitorix. Priorix was administered subcutaneously in the left arm.

<b>Number of subjects in period 1<sup>[1]</sup></b>	Menitorix Group	Meningitec Group
Started	359	117
Completed	357	116
Not completed	2	1
Consent withdrawn by subject	1	1
Adverse event, non-fatal	1	-

Notes:

[1] - The number of subjects reported to be in the baseline period are not the same as the worldwide number enrolled in the trial. It is expected that these numbers will be the same.

Justification: Subjects were taken into account even if they missed study visits. The number of subjects started depends on the actual rate of return.

## Period 2

Period 2 title	Year 1
Is this the baseline period?	No
Allocation method	Non-randomised - controlled
Blinding used	Not blinded

## Arms

Are arms mutually exclusive?	Yes
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<b>Arm title</b>	Menitorix Group
Arm description: -	
Arm type	Experimental
Investigational medicinal product name	Menitorix™
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Injection
Routes of administration	Intramuscular use
Dosage and administration details:	
Menitorix was co-administered with Priorix. One dose of Menitorix was administered in the deltoid region of the right arm.	
Investigational medicinal product name	Infanrix™ IPV
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Injection
Routes of administration	Intramuscular use
Dosage and administration details:	
Infanrix IPV was administered according to the manufacturer's instructions to UK subjects at 40 to 43 months of age.	
Investigational medicinal product name	Priorix-Tetra™
Investigational medicinal product code	
Other name	Priorix TM
Pharmaceutical forms	Injection
Routes of administration	Subcutaneous use
Dosage and administration details:	
Priorix, 0.5 ml, was administered in opposite limbs (right or left arm) subcutaneously.	
<b>Arm title</b>	Meningitec Group
Arm description: -	
Arm type	Active comparator
Investigational medicinal product name	Meningitec™
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Injection
Routes of administration	Intramuscular use
Dosage and administration details:	
Meningitec, 0.5 ml, was administered intramuscularly in the right thigh.	
Investigational medicinal product name	Pediacel™
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Injection
Routes of administration	Intramuscular use
Dosage and administration details:	
Pediacel, 0.5 ml, was administered intramuscularly, in the left thigh.	
Investigational medicinal product name	Menitorix™
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Injection
Routes of administration	Intramuscular use
Dosage and administration details:	
Menitorix was only administered to subjects of the group NoBoost at 40 to 43 months of age.	

Investigational medicinal product name	Priorix-Tetra™
Investigational medicinal product code	
Other name	Priorix TM
Pharmaceutical forms	Injection
Routes of administration	Subcutaneous use

Dosage and administration details:

Priorix, 0.5 ml, was administered in opposite limbs (right or left arm) subcutaneously.

<b>Number of subjects in period 2<sup>[2]</sup></b>	Menitorix Group	Meningitec Group
Started	221	67
Completed	221	67

Notes:

[2] - The number of subjects starting the period is not consistent with the number completing the preceding period. It is expected the number of subjects starting the subsequent period will be the same as the number completing the preceding period.

Justification: Subjects were taken into account even if they missed study visits. The number of subjects started depends on the actual rate of return.

### Period 3

Period 3 title	Year 2
Is this the baseline period?	No
Allocation method	Non-randomised - controlled
Blinding used	Not blinded

### Arms

Are arms mutually exclusive?	Yes
<b>Arm title</b>	Menitorix Group

Arm description: -

Arm type	Experimental
Investigational medicinal product name	Menitorix™
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Injection
Routes of administration	Intramuscular use

Dosage and administration details:

Menitorix was only administered to subjects of the group NoBoost at 40 to 43 months of age.

Investigational medicinal product name	Infanrix™ IPV
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Injection
Routes of administration	Intramuscular use

Dosage and administration details:

Infanrix IPV was administered according to the manufacturer's instructions to UK subjects at 40 to 43 months of age.

Investigational medicinal product name	Priorix-Tetra™
Investigational medicinal product code	
Other name	Priorix TM

Pharmaceutical forms	Injection
Routes of administration	Subcutaneous use

Dosage and administration details:

Priorix, 0.5 ml, was administered in opposite limbs (right or left arm) subcutaneously.

<b>Arm title</b>	Meningitec Group
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Arm description: -

Arm type	Active comparator
Investigational medicinal product name	Meningitec™
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Injection
Routes of administration	Intramuscular use

Dosage and administration details:

Meningitec, 0.5 ml, was administered intramuscularly in the right thigh.

Investigational medicinal product name	Pediacel™
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Injection
Routes of administration	Intramuscular use

Dosage and administration details:

Pediacel, 0.5 ml, was administered intramuscularly, in the left thigh.

Investigational medicinal product name	Menitorix™
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Injection
Routes of administration	Intramuscular use

Dosage and administration details:

Menitorix was only administered to subjects of the group NoBoost at 40 to 43 months of age.

Investigational medicinal product name	Priorix-Tetra™
Investigational medicinal product code	
Other name	Priorix TM
Pharmaceutical forms	Injection
Routes of administration	Subcutaneous use

Dosage and administration details:

Priorix, 0.5 ml, was administered in opposite limbs (right or left arm) subcutaneously.

<b>Number of subjects in period 3</b>	Menitorix Group	Meningitec Group
Started	221	67
Completed	235	77

Joined	14	10
Late return for study visit	14	10

<b>Period 4</b>	
Period 4 title	Year 4
Is this the baseline period?	No
Allocation method	Non-randomised - controlled
Blinding used	Not blinded
<b>Arms</b>	
Are arms mutually exclusive?	Yes
<b>Arm title</b>	Menitorix Group
Arm description: -	
Arm type	Experimental
Investigational medicinal product name	Menitorix™
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Injection
Routes of administration	Intramuscular use
Dosage and administration details:	
Menitorix was only administered to subjects of the group NoBoost at 40 to 43 months of age.	
Investigational medicinal product name	Infanrix™ IPV
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Injection
Routes of administration	Intramuscular use
Dosage and administration details:	
Infanrix IPV was administered according to the manufacturer's instructions to UK subjects at 40 to 43 months of age.	
Investigational medicinal product name	Priorix-Tetra™
Investigational medicinal product code	
Other name	Priorix TM
Pharmaceutical forms	Injection
Routes of administration	Subcutaneous use
Dosage and administration details:	
Priorix, 0.5 ml, was administered in opposite limbs (right or left arm) subcutaneously.	
<b>Arm title</b>	Meningitec Group
Arm description: -	
Arm type	Active comparator
Investigational medicinal product name	Meningitec™
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Injection
Routes of administration	Intramuscular use
Dosage and administration details:	
Meningitec, 0.5 ml, was administered intramuscularly in the right thigh.	
Investigational medicinal product name	Pediacel™
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Injection
Routes of administration	Intramuscular use

Dosage and administration details:

Pediacel, 0.5 ml, was administered intramuscularly, in the left thigh.

Investigational medicinal product name	Menitorix™
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Injection
Routes of administration	Intramuscular use

Dosage and administration details:

Menitorix was only administered to subjects of the group NoBoost at 40 to 43 months of age.

Investigational medicinal product name	Priorix-Tetra™
Investigational medicinal product code	
Other name	Priorix TM
Pharmaceutical forms	Injection
Routes of administration	Subcutaneous use

Dosage and administration details:

Priorix, 0.5 ml, was administered in opposite limbs (right or left arm) subcutaneously.

Number of subjects in period 4 <sup>[3]</sup>	Menitorix Group	Meningitec Group
Started	206	62
Completed	206	62

Notes:

[3] - The number of subjects starting the period is not consistent with the number completing the preceding period. It is expected the number of subjects starting the subsequent period will be the same as the number completing the preceding period.

Justification: Subjects were taken into account even if they missed study visits. The number of subjects started depends on the actual rate of return.

## Baseline characteristics

### Reporting groups

Reporting group title	Menitorix Group
Reporting group description: -	
Reporting group title	Meningitec Group
Reporting group description: -	

Reporting group values	Menitorix Group	Meningitec Group	Total
Number of subjects	359	117	476
Age categorical Units: Subjects			
In utero			0
Preterm newborn infants (gestational age < 37 wks)			0
Newborns (0-27 days)			0
Infants and toddlers (28 days-23 months)			0
Children (2-11 years)			0
Adolescents (12-17 years)			0
Adults (18-64 years)			0
From 65-84 years			0
85 years and over			0
Age continuous Units: months			
arithmetic mean	12.8	12.8	
standard deviation	± 0.75	± 0.78	-
Gender categorical Units: Subjects			
Female	179	62	241
Male	180	55	235

## End points

### End points reporting groups

Reporting group title	Menitorix Group
Reporting group description: -	
Reporting group title	Meningitec Group
Reporting group description: -	
Reporting group title	Menitorix Group
Reporting group description: -	
Reporting group title	Meningitec Group
Reporting group description: -	
Reporting group title	Menitorix Group
Reporting group description: -	
Reporting group title	Meningitec Group
Reporting group description: -	
Reporting group title	Menitorix Group
Reporting group description: -	
Reporting group title	Meningitec Group
Reporting group description: -	
Subject analysis set title	NoBoost Group
Subject analysis set type	Full analysis

Subject analysis set description:

Subjects enrolled only in the UK (at Visit 2), primed (according to the routine UK immunization schedule) with 3 doses of a MenC conjugate vaccine and a Hib containing vaccine before the age of 8 months without booster dose at 12 months of age. Those subjects received a catch-up dose of Hib-MenC in study 109666.

### Primary: Number of subjects with rSBA-MenC antibody titers $\geq 1:8$

End point title	Number of subjects with rSBA-MenC antibody titers $\geq 1:8$ <sup>[1]</sup>
End point description:	

End point type	Primary
End point timeframe:	
Up to Year 1	

Notes:

[1] - No statistical analyses have been specified for this primary end point. It is expected there is at least one statistical analysis for each primary end point.

Justification: The scope of this primary endpoint was descriptive, no statistical analyses were conducted.

End point values	Menitorix Group	Meningitec Group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	204	64		
Units: Subjects				
rSBS-MenC (Pre-Primary) [N=204;60]	12	3		
rSBS-MenC (Post-Primary) [N=202;63]	200	63		
rSBS-MenC (Pre-Booster) [N=202;62]	163	39		
rSBS-MenC (Post-Booster) [N=203;64]	201	61		
rSBS-MenC PIV (M12) [N=200;59]	178	41		

## Statistical analyses

No statistical analyses for this end point

### Primary: Number of subjects with rSBA-MenC antibody titers $\geq 1:128$

End point title	Number of subjects with rSBA-MenC antibody titers $\geq 1:128$ <sup>[2]</sup>
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End point description:

End point type	Primary
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End point timeframe:

Up to Year 1

Notes:

[2] - No statistical analyses have been specified for this primary end point. It is expected there is at least one statistical analysis for each primary end point.

Justification: The scope of this primary endpoint was descriptive, no statistical analyses were conducted.

End point values	Menitorix Group	Meningitec Group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	204	64		
Units: Subjects				
rSBS-MenC (Pre-Primary) [N=204;60]	3	0		
rSBS-MenC (Post-Primary) [N=202;63]	189	63		
rSBS-MenC (Pre-Booster) [N=202;62]	94	19		
rSBS-MenC (Post-Booster) [N=203;64]	199	56		
rSBS-MenC PIV (M12) [N=200;59]	109	17		

## Statistical analyses

No statistical analyses for this end point

### Primary: rSBA-MenC antibody titres

End point title	rSBA-MenC antibody titres <sup>[3]</sup>
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End point description:

End point type	Primary
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End point timeframe:

Up to Year 1

Notes:

[3] - No statistical analyses have been specified for this primary end point. It is expected there is at least one statistical analysis for each primary end point.

Justification: The scope of this primary endpoint was descriptive, no statistical analyses were conducted.

End point values	Menitorix Group	Meningitec Group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	204	64		
Units: Titre				
geometric mean (confidence interval 95%)				
rSBS-MenC (Pre-Primary) [N=204;60]	4.8 (4.3 to 5.3)	4.3 (3.9 to 4.8)		
rSBS-MenC (Post-Primary) [N=202;63]	624.7 (530.7 to 735.4)	1000 (778.8 to 1284.2)		
rSBS-MenC (Pre-Booster) [N=202;62]	67.1 (52.8 to 85.3)	32.4 (20.3 to 51.6)		
rSBS-MenC (Post-Booster) [N=203;64]	2540.3 (2058 to 3135.5)	517.4 (346.7 to 772)		
rSBS-MenC PIV (M12) [N=200;59]	123 (98.9 to 153)	35.7 (23.4 to 54.5)		

## Statistical analyses

No statistical analyses for this end point

### Primary: Number of subjects with rSBA-MenC antibody titers $\geq 1:8$

End point title	Number of subjects with rSBA-MenC antibody titers $\geq 1:8$ <sup>[4]</sup>
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End point description:

End point type	Primary
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End point timeframe:

Up to Year 2

Notes:

[4] - No statistical analyses have been specified for this primary end point. It is expected there is at least one statistical analysis for each primary end point.

Justification: The scope of this primary endpoint was descriptive, no statistical analyses were conducted.

End point values	Menitorix Group	Meningitec Group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	228	76		
Units: Subjects				
rSBS-MenC (Pre-Primary) [N=227;70]	16	2		
rSBS-MenC (Post-Primary) [N=224;73]	222	73		
rSBS-MenC (Pre-Booster) [N=226;72]	175	48		
rSBS-MenC (Post-Booster M1) [N=228;76]	227	73		
rSBS-MenC (Post-Booster M12) [N=184;53]	164	37		
rSBS-MenC (Post-Booster M24) [N=219;74]	147	30		

## Statistical analyses

No statistical analyses for this end point

### Primary: Number of subjects with rSBA-MenC antibody titers $\geq 1:8$

End point title	Number of subjects with rSBA-MenC antibody titers $\geq 1:8$ <sup>[5]</sup>
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End point description:

End point type	Primary
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End point timeframe:

Up to Year 2

Notes:

[5] - No statistical analyses have been specified for this primary end point. It is expected there is at least one statistical analysis for each primary end point.

Justification: The scope of this primary endpoint was descriptive, no statistical analyses were conducted.

End point values	NoBoost Group			
Subject group type	Subject analysis set			
Number of subjects analysed	68			
Units: Subjects				
Subjects with no booster administered	30			

### Statistical analyses

No statistical analyses for this end point

### Primary: Number of subjects with rSBA-MenC antibody titers $\geq 1:128$

End point title	Number of subjects with rSBA-MenC antibody titers $\geq 1:128$ <sup>[6]</sup>
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End point description:

End point type	Primary
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End point timeframe:

Up to Year 2

Notes:

[6] - No statistical analyses have been specified for this primary end point. It is expected there is at least one statistical analysis for each primary end point.

Justification: The scope of this primary endpoint was descriptive, no statistical analyses were conducted.

End point values	Menitorix Group	Meningitec Group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	228	76		
Units: Subjects				
rSBS-MenC (Pre-Primary) [N=227;70]	5	0		
rSBS-MenC (Post-Primary) [N=224;73]	208	73		
rSBS-MenC (Pre-Booster) [N=226;72]	96	22		
rSBS-MenC (Post-Booster M1) [N=228;76]	225	66		
rSBS-MenC (Post-Booster M12) [N=184;53]	98	15		
rSBS-MenC (Post-Booster M24) [N=219;74]	86	10		

## Statistical analyses

No statistical analyses for this end point

### Primary: Number of subjects with rSBA-MenC antibody titers $\geq 1:128$ <sup>[7]</sup>

End point title	Number of subjects with rSBA-MenC antibody titers $\geq 1:128$ <sup>[7]</sup>
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End point description:

End point type	Primary
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End point timeframe:

Up to Year 2

Notes:

[7] - No statistical analyses have been specified for this primary end point. It is expected there is at least one statistical analysis for each primary end point.

Justification: The scope of this primary endpoint was descriptive, no statistical analyses were conducted.

End point values	NoBoost Group			
Subject group type	Subject analysis set			
Number of subjects analysed	68			
Units: Subjects				
Subjects with no booster administered	11			

## Statistical analyses

No statistical analyses for this end point

### Primary: rSBA-MenC antibody titres<sup>[8]</sup>

End point title	rSBA-MenC antibody titres <sup>[8]</sup>
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End point description:

End point type	Primary
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End point timeframe:

Up to Year 2

Notes:

[8] - No statistical analyses have been specified for this primary end point. It is expected there is at least one statistical analysis for each primary end point.

Justification: The scope of this primary endpoint was descriptive, no statistical analyses were conducted.

End point values	Menitorix Group	Meningitec Group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	228	76		
Units: Titre				
geometric mean (confidence interval 95%)				
rSBS-MenC (Pre-Primary) [N=227;70]	5 (4.4 to 5.6)	4.2 (3.9 to 4.5)		
rSBS-MenC (Post-Primary) [N=224;73]	592.3 (507.3 to 691.5)	1075.6 (859.8 to 1345.5)		
rSBS-MenC (Pre-Booster) [N=226;72]	58.6 (46.4 to 73.9)	35 (23.1 to 53)		
rSBS-MenC (Post-Booster M1) [N=228;76]	2320.8 (1926.2 to 2796.2)	520.9 (367.9 to 737.6)		
rSBS-MenC (Post-Booster M12) [N=184;53]	122.3 (97.5 to 153.4)	35.9 (22.9 to 56)		
rSBS-MenC (Post-Booster M24) [N=219;74]	48 (36.8 to 62.6)	14.4 (9.7 to 21.6)		

## Statistical analyses

No statistical analyses for this end point

### Primary: rSBA-MenC antibody titres

End point title	rSBA-MenC antibody titres <sup>[9]</sup>
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End point description:

End point type	Primary
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End point timeframe:

Up to Year 2

Notes:

[9] - No statistical analyses have been specified for this primary end point. It is expected there is at least one statistical analysis for each primary end point.

Justification: The scope of this primary endpoint was descriptive, no statistical analyses were conducted.

End point values	NoBoost Group			
Subject group type	Subject analysis set			
Number of subjects analysed	68			
Units: Titre				
geometric mean (confidence interval 95%)				
Subjects with no booster administered	15.9 (10.3 to 24.3)			

## Statistical analyses

No statistical analyses for this end point

### Primary: Number of subjects with rSBA-MenC antibody titers $\geq 1:8$

End point title	Number of subjects with rSBA-MenC antibody titers $\geq 1:8$ <sup>[10]</sup>
End point description:	
End point type	Primary
End point timeframe:	
Up to Year 4	

Notes:

[10] - No statistical analyses have been specified for this primary end point. It is expected there is at least one statistical analysis for each primary end point.

Justification: The scope of this primary endpoint was descriptive, no statistical analyses were conducted.

End point values	Menitorix Group	Meningitec Group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	195	58		
Units: Subjects				
rSBS-MenC (Pre-Primary) [N=194;53]	10	2		
rSBS-MenC (Post-Primary) [N=194;55]	192	55		
rSBS-MenC (Pre-Boost) [N=195;55]	156	34		
rSBS-MenC (Post-Boost M1) [N=195;58]	194	56		
rSBS-MenC (Post-Boost M12) [N=166;45]	148	30		
rSBS-MenC (Post-Boost M24) [N=187;56]	123	20		
rSBS-MenC (Post-Boost M48) [N=194;58]	115	26		

## Statistical analyses

No statistical analyses for this end point

### Primary: Number of subjects with rSBA-MenC antibody titers $\geq 1:128$

End point title	Number of subjects with rSBA-MenC antibody titers $\geq 1:128$ <sup>[11]</sup>
End point description:	
End point type	Primary
End point timeframe:	
Up to Year 4	

Notes:

[11] - No statistical analyses have been specified for this primary end point. It is expected there is at least one statistical analysis for each primary end point.

Justification: The scope of this primary endpoint was descriptive, no statistical analyses were conducted.

End point values	Menitorix Group	Meningitec Group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	195	58		
Units: Subjects				
rSBS-MenC (Pre-Primary) [N=194;53]	2	0		
rSBS-MenC (Post-Primary) [N=194;55]	182	55		
rSBS-MenC (Pre-Boost) [N=195;55]	87	17		

rSBS-MenC (Post-Boost M1) [N=195;58]	193	50		
rSBS-MenC (Post-Boost M12) [N=166;45]	88	11		
rSBS-MenC (Post-Boost M24) [N=187;56]	78	6		
rSBS-MenC (Post-Boost M48) [N=194;58]	58	5		

## Statistical analyses

No statistical analyses for this end point

### Primary: rSBA-MenC antibody titers

End point title rSBA-MenC antibody titers<sup>[12]</sup>

End point description:

End point type Primary

End point timeframe:

Up to Year 4

Notes:

[12] - No statistical analyses have been specified for this primary end point. It is expected there is at least one statistical analysis for each primary end point.

Justification: The scope of this primary endpoint was descriptive, no statistical analyses were conducted.

End point values	Menitorix Group	Meningitec Group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	195	58		
Units: Titre				
geometric mean (confidence interval 95%)				
rSBS-MenC (Pre-Primary) [N=194;53]	4.7 (4.2 to 5.2)	4.2 (3.9 to 4.6)		
rSBS-MenC (Post-Primary) [N=194;55]	616.1 (521.3 to 728.2)	983.9 (742.6 to 1303.7)		
rSBS-MenC (Pre-Boost) [N=195;55]	64.3 (50.3 to 82.4)	30.8 (18.8 to 50.4)		
rSBS-MenC (Post-Boost M1) [N=195;58]	2537 (2071.9 to 3106.5)	507 (338.3 to 759.8)		
rSBS-MenC (Post-Boost M12) [N=166;45]	124.1 (97.5 to 158)	30.6 (18.7 to 50.1)		
rSBS-MenC (Post-Boost M24) [N=187;56]	47.9 (35.7 to 64.3)	12.1 (7.7 to 18.8)		
rSBS-MenC (Post-Boost M48) [N=194;58]	30.4 (22.9 to 40.4)	11.3 (7.7 to 16.5)		

## Statistical analyses

No statistical analyses for this end point

### Primary: Number of subjects with anti-polyribosylribitol phosphate (anti-PRP)

**antibodies  $\geq 0.15$   $\mu\text{g/mL}$  and  $\geq 1$   $\mu\text{g/mL}$** 

End point title	Number of subjects with anti-polyribosylribitol phosphate (anti-PRP) antibodies $\geq 0.15$ $\mu\text{g/mL}$ and $\geq 1$ $\mu\text{g/mL}$ <sup>[13]</sup>
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End point description:

End point type	Primary
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End point timeframe:

Up to Year 1

Notes:

[13] - No statistical analyses have been specified for this primary end point. It is expected there is at least one statistical analysis for each primary end point.

Justification: The scope of this primary endpoint was descriptive, no statistical analyses were conducted.

End point values	Menitorix Group	Meningitec Group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	206	64		
Units: Subjects				
Anti-PRP $\geq 0.15$ $\mu\text{g/mL}$ (Pre-Primary) [N=206;63]	84	25		
Anti-PRP $\geq 1.0$ $\mu\text{g/mL}$ (Pre-Primary) [N=206;63]	20	11		
Anti-PRP $\geq 0.15$ $\mu\text{g/mL}$ (Post-Primary) [N=204;63]	204	58		
Anti-PRP $\geq 1.0$ $\mu\text{g/mL}$ (Post-Primary) [N=204;63]	198	43		
Anti-PRP $\geq 0.15$ $\mu\text{g/mL}$ (Pre-Boost) [N=204;64]	199	45		
Anti-PRP $\geq 1.0$ $\mu\text{g/mL}$ (Pre-Boost) [N=204;64]	120	19		
Anti-PRP $\geq 0.15$ $\mu\text{g/mL}$ (Post-Boost) [N=203;63]	203	63		
Anti-PRP $\geq 1.0$ $\mu\text{g/mL}$ (Post-Boost) [N=203;63]	203	63		
Anti-PRP $\geq 0.15$ $\mu\text{g/mL}$ PIV (M12) [N=198;63]	198	63		
Anti-PRP $\geq 1.0$ $\mu\text{g/mL}$ PIV (M12) [N=198;63]	188	52		

**Statistical analyses**

No statistical analyses for this end point

**Primary: Concentration of anti-PRP antibodies**

End point title	Concentration of anti-PRP antibodies <sup>[14]</sup>
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End point description:

End point type	Primary
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End point timeframe:

Up to Year 1

Notes:

[14] - No statistical analyses have been specified for this primary end point. It is expected there is at least one statistical analysis for each primary end point.

Justification: The scope of this primary endpoint was descriptive, no statistical analyses were conducted.

End point values	Menitorix Group	Meningitec Group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	206	64		
Units: µg/mL				
geometric mean (confidence interval 95%)				
Anti-PRP (Pre-Primary) [N=206;63]	0.16 (0.137 to 0.186)	0.178 (0.13 to 0.243)		
Anti-PRP (Post-Primary) [N=204;63]	12.413 (10.688 to 14.417)	2.473 (1.557 to 3.928)		
Anti-PRP (Pre-Boost) [N=204;64]	1.293 (1.095 to 1.528)	0.441 (0.309 to 0.627)		
Anti-PRP (Post-Boost) [N=203;63]	88.667 (74.609 to 105.373)	39.024 (30.588 to 49.786)		
Anti-PRP PIV (M12) [N=198;63]	7.153 (6.029 to 8.486)	3.162 (2.316 to 4.318)		

## Statistical analyses

No statistical analyses for this end point

## Primary: Number of subjects with anti-polyribosylribitol phosphate (anti-PRP) antibodies ≥0.15 µg/mL and ≥1 µg/mL

End point title	Number of subjects with anti-polyribosylribitol phosphate (anti-PRP) antibodies ≥0.15 µg/mL and ≥1 µg/mL <sup>[15]</sup>
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End point description:

End point type	Primary
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End point timeframe:

Up to Year 2

Notes:

[15] - No statistical analyses have been specified for this primary end point. It is expected there is at least one statistical analysis for each primary end point.

Justification: The scope of this primary endpoint was descriptive, no statistical analyses were conducted.

End point values	Menitorix Group	Meningitec Group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	230	75		
Units: Subjects				
Anti-PRP ≥0.15 µg/mL (Pre-Primary) [N=230;73]	93	30		
Anti-PRP ≥1.0 µg/mL (Pre-Primary) [N=230;73]	18	9		
Anti-PRP ≥0.15 µg/mL (Post-Primary) [N=227;73]	227	66		

Anti-PRP $\geq 1.0$ $\mu\text{g/mL}$ (Post-Primary) [N=227;73]	222	52		
Anti-PRP $\geq 0.15$ $\mu\text{g/mL}$ (Pre-Boost) [N=229;74]	222	53		
Anti-PRP $\geq 1.0$ $\mu\text{g/mL}$ (Pre-Boost) [N=229;74]	134	21		
Anti-PRP $\geq 0.15$ $\mu\text{g/mL}$ (Post-Boost M1) [N=228;75]	228	75		
Anti-PRP $\geq 1.0$ $\mu\text{g/mL}$ (Post-Boost M1) [N=228;75]	228	75		
Anti-PRP $\geq 0.15$ $\mu\text{g/mL}$ (Post-Boost M12) [N=182;57]	182	57		
Anti-PRP $\geq 1.0$ $\mu\text{g/mL}$ (Post-Boost M12) [N=182;57]	172	48		
Anti-PRP $\geq 0.15$ $\mu\text{g/mL}$ (Post-Boost M24) [N=228;75]	227	74		
Anti-PRP $\geq 1.0$ $\mu\text{g/mL}$ (Post-Boost M24) [N=228;75]	203	56		

## Statistical analyses

No statistical analyses for this end point

## Primary: Number of subjects with anti-polyribosylribitol phosphate (anti-PRP) antibodies $\geq 0.15$ $\mu\text{g/mL}$ and $\geq 1$ $\mu\text{g/mL}$

End point title	Number of subjects with anti-polyribosylribitol phosphate (anti-PRP) antibodies $\geq 0.15$ $\mu\text{g/mL}$ and $\geq 1$ $\mu\text{g/mL}$ <sup>[16]</sup>
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End point description:

End point type	Primary
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End point timeframe:

Up to Year 2

Notes:

[16] - No statistical analyses have been specified for this primary end point. It is expected there is at least one statistical analysis for each primary end point.

Justification: The scope of this primary endpoint was descriptive, no statistical analyses were conducted.

End point values	NoBoost Group			
Subject group type	Subject analysis set			
Number of subjects analysed	72			
Units: Subjects				
Anti-PRP $\geq 0.15$ $\mu\text{g/mL}$ (Subjects with no booster)	62			
Anti-PRP $\geq 1.0$ $\mu\text{g/mL}$ (Subjects with no booster)	28			

## Statistical analyses

No statistical analyses for this end point

## Primary: Concentration of anti-PRP antibodies

End point title	Concentration of anti-PRP antibodies <sup>[17]</sup>
End point description:	
End point type	Primary
End point timeframe:	
Up to Year 2	

Notes:

[17] - No statistical analyses have been specified for this primary end point. It is expected there is at least one statistical analysis for each primary end point.

Justification: The scope of this primary endpoint was descriptive, no statistical analyses were conducted.

End point values	Menitorix Group	Meningitec Group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	230	75		
Units: µg/mL				
geometric mean (confidence interval 95%)				
Anti-PRP (Pre-Primary) [N=230;73]	0.153 (0.134 to 0.176)	0.163 (0.125 to 0.213)		
Anti-PRP (Post-Primary) [N=227;73]	12.794 (11.159 to 14.669)	2.396 (1.58 to 3.635)		
Anti-PRP (Pre-Boost) [N=229;74]	1.26 (1.08 to 1.469)	0.425 (0.31 to 0.582)		
Anti-PRP (Post-Boost M1) [N=228;75]	91.981 (78.7 to 107.503)	44.002 (34.546 to 56.048)		
Anti-PRP (Post-Boost M12) [N=182;57]	7.107 (5.931 to 8.516)	3.456 (2.488 to 4.799)		
Anti-PRP (Post-Boost M24) [N=228;75]	4.79 (4.065 to 5.644)	2.339 (1.798 to 3.042)		

## Statistical analyses

No statistical analyses for this end point

## Primary: Concentration of anti-PRP antibodies

End point title	Concentration of anti-PRP antibodies <sup>[18]</sup>
End point description:	
End point type	Primary
End point timeframe:	
Up to Year 2	

Notes:

[18] - No statistical analyses have been specified for this primary end point. It is expected there is at least one statistical analysis for each primary end point.

Justification: The scope of this primary endpoint was descriptive, no statistical analyses were conducted.

End point values	NoBoost Group			
Subject group type	Subject analysis set			
Number of subjects analysed	72			
Units: µg/mL				
geometric mean (confidence interval 95%)				
Anti-PRP (Subjects with no booster)	0.668 (0.467 to 0.956)			

## Statistical analyses

No statistical analyses for this end point

### Primary: Number of subjects with anti-polyribosylribitol phosphate (anti-PRP) antibodies $\geq 0.15$ µg/mL and $\geq 1$ µg/mL

End point title	Number of subjects with anti-polyribosylribitol phosphate (anti-PRP) antibodies $\geq 0.15$ µg/mL and $\geq 1$ µg/mL <sup>[19]</sup>
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End point description:

End point type	Primary
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End point timeframe:

Up to Year 4

Notes:

[19] - No statistical analyses have been specified for this primary end point. It is expected there is at least one statistical analysis for each primary end point.

Justification: The scope of this primary endpoint was descriptive, no statistical analyses were conducted.

End point values	Menitorix Group	Meningitec Group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	197	58		
Units: Subjects				
Anti-PRP $\geq 0.15$ µg/mL (Pre-Primary) [N=197;56]	77	24		
Anti-PRP $\geq 1.0$ µg/mL (Pre-Primary) [N=197;56]	14	9		
Anti-PRP $\geq 0.15$ µg/mL (Post-Primary) [N=196;55]	196	48		
Anti-PRP $\geq 1.0$ µg/mL (Post-Primary) [N=196;55]	191	33		
Anti-PRP $\geq 0.15$ µg/mL (Pre-Boost) [N=197;57]	191	38		
Anti-PRP $\geq 1.0$ µg/mL (Pre-Boost) [N=197;57]	119	14		
Anti-PRP $\geq 0.15$ µg/mL (Post-Boost M1) [N=195;57]	195	57		
Anti-PRP $\geq 1.0$ µg/mL (Post-Boost M1) [N=195;57]	195	57		
Anti-PRP $\geq 0.15$ µg/mL (Post-Boost M12) [N=164;48]	164	48		
Anti-PRP $\geq 1.0$ µg/mL (Post-Boost M12) [N=164;48]	157	40		
Anti-PRP $\geq 0.15$ µg/mL (Post-Boost M24) [N=194;56]	193	55		

Anti-PRP $\geq 1.0$ $\mu\text{g/mL}$ (Post-Boost M24) [N=194;56]	174	40		
Anti-PRP $\geq 0.15$ $\mu\text{g/mL}$ (Post-Boost M48) [N=197;58]	197	58		
Anti-PRP $\geq 1.0$ $\mu\text{g/mL}$ (Post-Boost M48) [N=197;58]	171	36		

## Statistical analyses

No statistical analyses for this end point

### Primary: Concentration of anti-PRP antibodies

End point title	Concentration of anti-PRP antibodies <sup>[20]</sup>
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End point description:

End point type	Primary
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End point timeframe:

Up to Year 4

Notes:

[20] - No statistical analyses have been specified for this primary end point. It is expected there is at least one statistical analysis for each primary end point.

Justification: The scope of this primary endpoint was descriptive, no statistical analyses were conducted.

End point values	Menitorix Group	Meningitec Group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	197	58		
Units: $\mu\text{g/mL}$				
geometric mean (confidence interval 95%)				
Anti-PRP (Pre-Primary) [N=197;56]	0.149 (0.129 to 0.173)	0.18 (0.13 to 0.25)		
Anti-PRP (Post-Primary) [N=196;55]	12.715 (10.945 to 14.771)	1.776 (1.058 to 2.979)		
Anti-PRP (Pre-Boost) [N=197;57]	1.276 (1.08 to 1.508)	0.38 (0.263 to 0.55)		
Anti-PRP (Post-Boost M1) [N=195;57]	90.101 (76.087 to 106.697)	39.105 (29.506 to 51.825)		
Anti-PRP (Post-Boost M12) [N=164;48]	7.455 (6.176 to 8.998)	3.557 (2.45 to 5.165)		
Anti-PRP (Post-Boost M24) [N=194;56]	4.928 (4.135 to 5.873)	2.083 (1.524 to 2.847)		
Anti-PRP (Post-Boost M48) [N=197;58]	3.824 (3.218 to 4.543)	1.673 (1.215 to 2.305)		

## Statistical analyses

No statistical analyses for this end point

**Primary: Number of subjects with anti-serogroup C polysaccharide (anti-PSC) antibody concentrations  $\geq 0.3 \mu\text{g/mL}$  and  $\geq 2 \mu\text{g/mL}$** 

End point title	Number of subjects with anti-serogroup C polysaccharide (anti-PSC) antibody concentrations $\geq 0.3 \mu\text{g/mL}$ and $\geq 2 \mu\text{g/mL}$ <sup>[21]</sup>
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End point description:

End point type	Primary
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End point timeframe:

Up to Year 1

Notes:

[21] - No statistical analyses have been specified for this primary end point. It is expected there is at least one statistical analysis for each primary end point.

Justification: The scope of this primary endpoint was descriptive, no statistical analyses were conducted.

End point values	Menitorix Group	Meningitec Group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	206	64		
Units: Subjects				
Anti-PSC $\geq 0.3 \mu\text{g/mL}$ (Pre-Primary) [N=206;63]	19	4		
Anti-PSC $\geq 2 \mu\text{g/mL}$ (Pre-Primary) [N=206;63]	8	1		
Anti-PSC $\geq 0.3 \mu\text{g/mL}$ (Post-Primary) [N=202;63]	202	63		
Anti-PSC $\geq 2 \mu\text{g/mL}$ (Post-Primary) [N=202;63]	201	63		
Anti-PSC $\geq 0.3 \mu\text{g/mL}$ (Pre-Booster) [N=201;64]	170	56		
Anti-PSC $\geq 2 \mu\text{g/mL}$ (Pre-Booster) [N=201;64]	27	10		
Anti-PSC $\geq 0.3 \mu\text{g/mL}$ (Post-Booster) [N=205;64]	205	64		
Anti-PSC $\geq 2 \mu\text{g/mL}$ (Post-Booster) [N=205;64]	183	47		
Anti-PSC $\geq 0.3 \mu\text{g/mL}$ (PIV [M12]) [N=193;59]	119	29		
Anti-PSC $\geq 2 \mu\text{g/mL}$ (PIV [M12]) [N=193;59]	19	2		

**Statistical analyses**

No statistical analyses for this end point

**Primary: Concentration of anti-PSC antibodies**

End point title	Concentration of anti-PSC antibodies <sup>[22]</sup>
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End point description:

End point type	Primary
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End point timeframe:

Up to Year 1

Notes:

[22] - No statistical analyses have been specified for this primary end point. It is expected there is at least one statistical analysis for each primary end point.

Justification: The scope of this primary endpoint was descriptive, no statistical analyses were conducted.

End point values	Menitorix Group	Meningitec Group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	206	64		
Units: µg/mL				
geometric mean (confidence interval 95%)				
Anti-PSC (Pre-Primary) [N=206;63]	0.18 (0.17 to 0.2)	0.17 (0.15 to 0.18)		
Anti-PSC (Post-Primary) [N=202;63]	9.52 (8.68 to 10.45)	11.2 (9.42 to 13.33)		
Anti-PSC (Pre-Booster) [N=201;64]	0.77 (0.67 to 0.88)	0.84 (0.66 to 1.06)		
Anti-PSC (Post-Booster) [N=205;64]	7.36 (6.46 to 8.39)	3.51 (2.84 to 4.32)		
Anti-PSC (PIV [M12]) [N=193;59]	0.47 (0.4 to 0.55)	0.32 (0.26 to 0.4)		

## Statistical analyses

No statistical analyses for this end point

## Primary: Number of subjects with anti-serogroup C polysaccharide (anti-PSC) antibody concentrations $\geq 0.3$ µg/mL and $\geq 2$ µg/mL

End point title	Number of subjects with anti-serogroup C polysaccharide (anti-PSC) antibody concentrations $\geq 0.3$ µg/mL and $\geq 2$ µg/mL <sup>[23]</sup>
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End point description:

End point type	Primary
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End point timeframe:

Up to Year 2

Notes:

[23] - No statistical analyses have been specified for this primary end point. It is expected there is at least one statistical analysis for each primary end point.

Justification: The scope of this primary endpoint was descriptive, no statistical analyses were conducted.

End point values	Menitorix Group	Meningitec Group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	230	76		
Units: Subjects				
Anti-PSC $\geq 0.3$ µg/mL (Pre-Primary) [N=229;73]	26	6		
Anti-PSC $\geq 2$ µg/mL (Pre-Primary) [N=229;73]	12	1		
Anti-PSC $\geq 0.3$ µg/mL (Post-Primary) [N=225;72]	225	72		
Anti-PSC $\geq 2$ µg/mL (Post-Primary) [N=225;72]	224	72		

Anti-PSC $\geq$ 0.3 $\mu$ g/mL (Pre-Booster) [N=226;74]	188	66		
Anti-PSC $\geq$ 2 $\mu$ g/mL (Pre-Booster) [N=226;74]	27	13		
Anti-PSC $\geq$ 0.3 $\mu$ g/mL (Post-Booster [M1]) [N=230;76]	230	76		
Anti-PSC $\geq$ 2 $\mu$ g/mL (Post-Booster [M1]) [N=230;76]	210	59		
Anti-PSC $\geq$ 0.3 $\mu$ g/mL (Post-Booster [M12]) [N=178;54]	110	26		
Anti-PSC $\geq$ 2 $\mu$ g/mL (Post-Booster [M12]) [N=178;54]	16	2		
Anti-PSC $\geq$ 0.3 $\mu$ g/mL (Post-Booster [M24]) [N=226;75]	76	17		
Anti-PSC $\geq$ 2 $\mu$ g/mL (Post-Booster [M24]) [N=226;75]	5	0		

## Statistical analyses

No statistical analyses for this end point

### Primary: Number of subjects with anti-serogroup C polysaccharide (anti-PSC) antibody concentrations $\geq$ 0.3 $\mu$ g/mL and $\geq$ 2 $\mu$ g/mL

End point title	Number of subjects with anti-serogroup C polysaccharide (anti-PSC) antibody concentrations $\geq$ 0.3 $\mu$ g/mL and $\geq$ 2 $\mu$ g/mL <sup>[24]</sup>
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End point description:

End point type	Primary
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End point timeframe:

Up to Year 2

Notes:

[24] - No statistical analyses have been specified for this primary end point. It is expected there is at least one statistical analysis for each primary end point.

Justification: The scope of this primary endpoint was descriptive, no statistical analyses were conducted.

End point values	NoBoost Group			
Subject group type	Subject analysis set			
Number of subjects analysed	72			
Units: Subjects				
Anti-PSC $\geq$ 0.3 $\mu$ g/mL (Subjects with no booster)	4			
Anti-PSC $\geq$ 2 $\mu$ g/mL (Subjects with no booster)	0			

## Statistical analyses

No statistical analyses for this end point

### Primary: Concentration of anti-PSC antibodies

End point title	Concentration of anti-PSC antibodies <sup>[25]</sup>
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End point description:

End point type	Primary
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End point timeframe:

Up to Year 2

Notes:

[25] - No statistical analyses have been specified for this primary end point. It is expected there is at least one statistical analysis for each primary end point.

Justification: The scope of this primary endpoint was descriptive, no statistical analyses were conducted.

End point values	Menitorix Group	Meningitec Group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	230	76		
Units: µg/mL				
geometric mean (confidence interval 95%)				
Anti-PSC (Pre-Primary) [N=229;73]	0.2 (0.18 to 0.22)	0.17 (0.15 to 0.18)		
Anti-PSC (Post-Primary) [N=225;72]	9.35 (8.56 to 10.22)	12.29 (10.5 to 14.39)		
Anti-PSC (Pre-Booster) [N=226;74]	0.74 (0.65 to 0.84)	0.87 (0.69 to 1.1)		
Anti-PSC (Post-Booster [M1]) [N=230;76]	7.41 (6.59 to 8.33)	3.91 (3.19 to 4.79)		
Anti-PSC (Post-Booster [M12]) [N=178;54]	0.47 (0.4 to 0.55)	0.32 (0.25 to 0.4)		
Anti-PSC (Post-Booster [M24]) [N=226;75]	0.25 (0.23 to 0.28)	0.21 (0.18 to 0.24)		

## Statistical analyses

No statistical analyses for this end point

## Primary: Concentration of anti-PSC antibodies

End point title	Concentration of anti-PSC antibodies <sup>[26]</sup>
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End point description:

End point type	Primary
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End point timeframe:

Up to Year 2

Notes:

[26] - No statistical analyses have been specified for this primary end point. It is expected there is at least one statistical analysis for each primary end point.

Justification: The scope of this primary endpoint was descriptive, no statistical analyses were conducted.

End point values	NoBoost Group			
Subject group type	Subject analysis set			
Number of subjects analysed	72			
Units: µg/mL				
geometric mean (confidence interval 95%)				

Anti-PSC (Subjects with no booster)	0.16 (0.15 to 0.18)			
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## Statistical analyses

No statistical analyses for this end point

### Primary: Number of subjects with anti-serogroup C polysaccharide (anti-PSC) antibody concentrations $\geq 0.3 \mu\text{g/mL}$ and $\geq 2 \mu\text{g/mL}$

End point title	Number of subjects with anti-serogroup C polysaccharide (anti-PSC) antibody concentrations $\geq 0.3 \mu\text{g/mL}$ and $\geq 2 \mu\text{g/mL}$ <sup>[27]</sup>
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End point description:

End point type	Primary
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End point timeframe:

Up to Year 4

Notes:

[27] - No statistical analyses have been specified for this primary end point. It is expected there is at least one statistical analysis for each primary end point.

Justification: The scope of this primary endpoint was descriptive, no statistical analyses were conducted.

End point values	Menitorix Group	Meningitec Group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	197	58		
Units: Subjects				
Anti-PSC $\geq 0.3 \mu\text{g/mL}$ (Pre-Primary) [N=197;56]	19	3		
Anti-PSC $\geq 2 \mu\text{g/mL}$ (Pre-Primary) [N=197;56]	7	1		
Anti-PSC $\geq 0.3 \mu\text{g/mL}$ (Post-Primary) [N=194;54]	194	54		
Anti-PSC $\geq 2 \mu\text{g/mL}$ (Post-Primary) [N=194;54]	193	54		
Anti-PSC $\geq 0.3 \mu\text{g/mL}$ (Pre-Boost) [N=194;57]	163	52		
Anti-PSC $\geq 2 \mu\text{g/mL}$ (Pre-Boost) [N=194;57]	24	9		
Anti-PSC $\geq 0.3 \mu\text{g/mL}$ (Post-Boost [M1]) [N=197;58]	197	58		
Anti-PSC $\geq 2 \mu\text{g/mL}$ (Post-Boost [M1]) [N=197;58]	179	43		
Anti-PSC $\geq 0.3 \mu\text{g/mL}$ (Post-Boost [M12]) [N=161;45]	101	22		
Anti-PSC $\geq 2 \mu\text{g/mL}$ (Post-Boost [M12]) [N=161;45]	15	2		
Anti-PSC $\geq 0.3 \mu\text{g/mL}$ (Post-Boost [M24]) [N=193;56]	69	10		
Anti-PSC $\geq 2 \mu\text{g/mL}$ (Post-Boost [M24]) [N=193;56]	5	0		
Anti-PSC $\geq 0.3 \mu\text{g/mL}$ (Post-Boost [M48]) [N=192;56]	38	4		
Anti-PSC $\geq 2 \mu\text{g/mL}$ (Post-Boost [M48]) [N=192;56]	6	0		

## Statistical analyses

No statistical analyses for this end point

### Primary: Concentration of anti-PSC antibodies

End point title	Concentration of anti-PSC antibodies <sup>[28]</sup>
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End point description:

End point type	Primary
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End point timeframe:

Up to Year 4

Notes:

[28] - No statistical analyses have been specified for this primary end point. It is expected there is at least one statistical analysis for each primary end point.

Justification: The scope of this primary endpoint was descriptive, no statistical analyses were conducted.

End point values	Menitorix Group	Meningitec Group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	197	58		
Units: µg/mL				
geometric mean (confidence interval 95%)				
Anti-PSC (Pre-Primary) [N=197;56]	0.19 (0.17 to 0.21)	0.16 (0.15 to 0.18)		
Anti-PSC (Post-Primary) [N=194;54]	9.41 (8.55 to 10.36)	11.88 (9.75 to 14.46)		
Anti-PSC (Pre-Boost) [N=194;57]	0.76 (0.66 to 0.87)	0.85 (0.66 to 1.09)		
Anti-PSC (Post-Boost [M1]) [N=197;58]	7.46 (6.55 to 8.49)	3.76 (2.94 to 4.8)		
Anti-PSC (Post-Boost [M12]) [N=161;45]	0.48 (0.41 to 0.57)	0.34 (0.26 to 0.45)		
Anti-PSC (Post-Boost [M24]) [N=193;56]	0.27 (0.23 to 0.3)	0.19 (0.16 to 0.22)		
Anti-PSC (Post-Boost [M48]) [N=192;56]	0.21 (0.19 to 0.23)	0.17 (0.15 to 0.19)		

## Statistical analyses

No statistical analyses for this end point

### Primary: Number of subjects with anti-pertussis toxoid (anti-PT), anti-filamentous haemagglutinin (anti-FHA) and anti-pertactin (anti-PRN) antibody concentrations $\geq$ 5.0 EL.U/mL

End point title	Number of subjects with anti-pertussis toxoid (anti-PT), anti-filamentous haemagglutinin (anti-FHA) and anti-pertactin (anti-
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End point description:

Up to Year 2

End point type Primary

End point timeframe:

Up to Year 2

Notes:

[29] - No statistical analyses have been specified for this primary end point. It is expected there is at least one statistical analysis for each primary end point.

Justification: The scope of this primary endpoint was descriptive, no statistical analyses were conducted.

End point values	Menitorix Group	Meningitec Group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	67	23		
Units: Subjects				
Anti-PT Pre-Primary [N=64;18]	11	3		
Anti-PT Post-Primary (M3) [N=63;20]	63	20		
Anti-PT Post-Primary (M10) [N=66;21]	34	10		
Anti-PT Pre-Boost [N=67;23]	8	3		
Anti-FHA Pre-Primary [N=65;19]	40	12		
Anti-FHA Post-Primary (M3) [N=63;20]	63	20		
Anti-FHA Post-Primary (M10) [N=65;21]	65	21		
Anti-FHA Pre-Boost [N=64;22]	47	13		
Anti-PRN Pre-Primary [N=64;19]	22	4		
Anti-PRN Post-Primary (M3) [N=63;20]	63	20		
Anti-PRN Post-Primary (M10) [N=66;21]	53	14		
Anti-PRN Pre-Boost [N=67;23]	34	7		

## Statistical analyses

No statistical analyses for this end point

### Primary: Concentration of anti-PT, anti-FHA and anti-PRN antibodies

End point title Concentration of anti-PT, anti-FHA and anti-PRN antibodies<sup>[30]</sup>

End point description:

End point type Primary

End point timeframe:

Up to Year 2

Notes:

[30] - No statistical analyses have been specified for this primary end point. It is expected there is at least one statistical analysis for each primary end point.

Justification: The scope of this primary endpoint was descriptive, no statistical analyses were conducted.

End point values	Menitorix Group	Meningitec Group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	67	23		
Units: EL.U/mL				
geometric mean (confidence interval 95%)				
Anti-PT Pre-Primary [N=64;18]	3.2 (2.8 to 3.7)	3.3 (2.4 to 4.6)		
Anti-PT Post-Primary (M3) [N=63;20]	44.8 (39.1 to 51.2)	40.1 (31.7 to 50.8)		
Anti-PT Post-Primary (M10) [N=66;21]	4.9 (4.1 to 5.9)	4.5 (3.3 to 6.1)		
Anti-PT Pre-Boost [N=67;23]	2.9 (2.6 to 3.2)	3 (2.4 to 3.6)		
Anti-FHA Pre-Primary [N=65;19]	6.5 (5.2 to 8.2)	7.8 (4.7 to 13)		
Anti-FHA Post-Primary (M3) [N=63;20]	223.5 (194.6 to 256.7)	160.2 (123.1 to 208.6)		
Anti-FHA Post-Primary (M10) [N=65;21]	30.4 (25.7 to 35.9)	25.8 (19 to 34.9)		
Anti-FHA Pre-Boost [N=64;22]	15.1 (9.5 to 24)	20.3 (8 to 51.8)		
Anti-PRN Pre-Primary [N=64;19]	4.2 (3.4 to 5.2)	3.1 (2.5 to 3.9)		
Anti-PRN Post-Primary (M3) [N=63;20]	116.3 (93.7 to 144.5)	46.1 (31 to 68.5)		
Anti-PRN Post-Primary (M10) [N=66;21]	12.5 (9.5 to 16.2)	6.6 (4.4 to 9.9)		
Anti-PRN Pre-Boost [N=67;23]	5.9 (4.5 to 7.7)	4.3 (2.8 to 6.5)		

## Statistical analyses

No statistical analyses for this end point

## Primary: Number of subjects with anti-pertussis toxoid (anti-PT), anti-filamentous haemagglutinin (anti-FHA) and anti-pertactin (anti-PRN) antibody concentrations $\geq$ 5.0 EL.U/mL

End point title	Number of subjects with anti-pertussis toxoid (anti-PT), anti-filamentous haemagglutinin (anti-FHA) and anti-pertactin (anti-PRN) antibody concentrations $\geq$ 5.0 EL.U/mL <sup>[31]</sup>
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End point description:

End point type	Primary
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End point timeframe:

Up to Year 4

Notes:

[31] - No statistical analyses have been specified for this primary end point. It is expected there is at least one statistical analysis for each primary end point.

Justification: The scope of this primary endpoint was descriptive, no statistical analyses were conducted.

End point values	Menitorix Group	Meningitec Group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	44	14		
Units: Subjects				
Anti-PT Pre-Primary [N=41;12]	9	2		
Anti-PT Post-Primary (M3) [N=42;11]	42	11		

Anti-PT Post-Primary (M10) [N=44;13]	24	5		
Anti-PT Pre-Boost ( M32) [N=43;14]	6	2		
Anti-PT Post-Boost ( M24) [N=44;13]	30	9		
Anti-FHA Pre-Primary [N=42;12]	27	9		
Anti-FHA Post-Primary (M3) [N=42;11]	42	11		
Anti-FHA Post-Primary (M10) [N=44;13]	43	13		
Anti-FHA Pre-Boost ( M32) [N=41;13]	29	10		
Anti-FHA Post-Boost ( M24) [N=41;14]	41	14		
Anti-PRN Pre-Primary [N=41;12]	13	3		
Anti-PRN Post-Primary (M3) [N=42;11]	42	11		
Anti-PRN Post-Primary (M10) [N=44;13]	36	8		
Anti-PRN Pre-Boost ( M32) [N=43;14]	25	4		
Anti-PRN Post-Boost ( M24) [N=44;14]	43	14		

## Statistical analyses

No statistical analyses for this end point

### Primary: Concentration of anti-PT, anti-FHA and anti-PRN antibodies

End point title	Concentration of anti-PT, anti-FHA and anti-PRN antibodies <sup>[32]</sup>
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End point description:

End point type	Primary
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End point timeframe:

Up to Year 4

Notes:

[32] - No statistical analyses have been specified for this primary end point. It is expected there is at least one statistical analysis for each primary end point.

Justification: The scope of this primary endpoint was descriptive, no statistical analyses were conducted.

End point values	Menitorix Group	Meningitec Group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	44	14		
Units: EL.U/mL				
geometric mean (confidence interval 95%)				
Anti-PT Pre-Primary [N=41;12]	3.4 (2.8 to 4.1)	3.4 (2.1 to 5.5)		
Anti-PT Post-Primary (M3) [N=42;11]	45.2 (37.2 to 54.8)	36.5 (26.1 to 51.1)		
Anti-PT Post-Primary (M10) [N=44;13]	5.1 (4.1 to 6.4)	3.9 (2.7 to 5.6)		
Anti-PT Pre-Boost ( M32) [N=43;14]	3 (2.5 to 3.5)	3.1 (2.3 to 4.1)		
Anti-PT Post-Boost ( M24) [N=44;13]	8.2 (6.1 to 10.9)	7.2 (3.9 to 13.4)		
Anti-FHA Pre-Primary [N=42;12]	7.2 (5.2 to 10)	9.1 (4.7 to 17.6)		
Anti-FHA Post-Primary (M3) [N=42;11]	229.9 (188.5 to 280.4)	169.8 (127 to 227)		
Anti-FHA Post-Primary (M10) [N=44;13]	27.2 (22.1 to 33.5)	22.8 (15.6 to 33.3)		
Anti-FHA Pre-Boost ( M32) [N=41;13]	16.7 (9 to 30.9)	33.1 (9.6 to 113.8)		

Anti-FHA Post-Boost ( M24) [N=41;14]	164.7 (119.4 to 227.1)	66.8 (43.8 to 101.7)		
Anti-PRN Pre-Primary [N=41;12]	3.9 (3.1 to 4.9)	3.1 (2.4 to 4.1)		
Anti-PRN Post-Primary (M3) [N=42;11]	135.6 (106 to 173.4)	50.4 (26 to 97.6)		
Anti-PRN Post-Primary (M10) [N=44;13]	12.2 (8.9 to 16.7)	5.6 (3.6 to 8.8)		
Anti-PRN Pre-Boost ( M32) [N=43;14]	6.6 (4.5 to 9.5)	4.9 (2.4 to 9.8)		
Anti-PRN Post-Boost ( M24) [N=44;14]	102.8 (67.1 to 157.3)	23.4 (15.1 to 36.2)		

## Statistical analyses

No statistical analyses for this end point

## Primary: Number of subjects with Serious Adverse Events (SAEs)

End point title	Number of subjects with Serious Adverse Events (SAEs) <sup>[33]</sup>
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End point description:

End point type	Primary
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End point timeframe:

Up to Month 12 (Booster vaccination)

Notes:

[33] - No statistical analyses have been specified for this primary end point. It is expected there is at least one statistical analysis for each primary end point.

Justification: The scope of this primary endpoint was descriptive, no statistical analyses were conducted.

End point values	Menitorix Group	Meningitec Group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	359	117		
Units: Subjects				
Any SAE(s)	0	0		

## Statistical analyses

No statistical analyses for this end point

## Primary: Number of subjects with SAEs

End point title	Number of subjects with SAEs <sup>[34]</sup>
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End point description:

End point type	Primary
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End point timeframe:

Up to Month 24 (Booster vaccination)

Notes:

[34] - No statistical analyses have been specified for this primary end point. It is expected there is at least one statistical analysis for each primary end point.

Justification: The scope of this primary endpoint was descriptive, no statistical analyses were conducted.

End point values	Menitorix Group	Meningitec Group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	359	117		
Units: Subjects				
Any SAE(s)	0	0		

## Statistical analyses

No statistical analyses for this end point

### Primary: Number of subjects with SAEs

End point title	Number of subjects with SAEs <sup>[35]</sup>
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End point description:

End point type	Primary
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End point timeframe:

Up to Month 48 (Booster vaccination)

Notes:

[35] - No statistical analyses have been specified for this primary end point. It is expected there is at least one statistical analysis for each primary end point.

Justification: The scope of this primary endpoint was descriptive, no statistical analyses were conducted.

End point values	Menitorix Group	Meningitec Group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	359	117		
Units: Subjects				
Any SAE(s)	1	0		

## Statistical analyses

No statistical analyses for this end point

### Primary: Number of UK subjects with SAEs

End point title	Number of UK subjects with SAEs <sup>[36]</sup>
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End point description:

End point type	Primary
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End point timeframe:

Within (31-Days) post vaccination at Year 2

Notes:

[36] - No statistical analyses have been specified for this primary end point. It is expected there is at least one statistical analysis for each primary end point.

Justification: The scope of this primary endpoint was descriptive, no statistical analyses were conducted.

<b>End point values</b>	Menitorix Group	Meningitec Group	NoBoost Group	
Subject group type	Reporting group	Reporting group	Subject analysis set	
Number of subjects analysed	70	23	72	
Units: Subjects				
Any SAE(s)	1	0	0	

### Statistical analyses

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No statistical analyses for this end point

## Adverse events

### Adverse events information<sup>[1]</sup>

Timeframe for reporting adverse events:

Serious adverse events (SAEs) occurring from the last study contact of the booster study until the end of the persistence study. Serious adverse events (SAEs) occurring within 31 days of administration of the DTPa-IPV and Hib-MenC vaccines in UK.

Assessment type	Systematic
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### Dictionary used

Dictionary name	MedDRA
Dictionary version	10.1

### Reporting groups

Reporting group title	Menitorix Group (Booster)
Reporting group description: -	
Reporting group title	Meningitec Group (Booster)
Reporting group description: -	
Reporting group title	Menitorix Group (Year 2)
Reporting group description: -	
Reporting group title	Meningitec Group (Year 2)
Reporting group description: -	
Reporting group title	NoBoost Group
Reporting group description: -	

Notes:

[1] - There are no non-serious adverse events recorded for these results. It is expected that there will be at least one non-serious adverse event reported.

Justification: No information about unsolicited adverse events was collected during this study.

Serious adverse events	Menitorix Group (Booster)	Meningitec Group (Booster)	Menitorix Group (Year 2)
Total subjects affected by serious adverse events			
subjects affected / exposed	1 / 359 (0.28%)	0 / 117 (0.00%)	1 / 70 (1.43%)
number of deaths (all causes)	0	0	0
number of deaths resulting from adverse events			
General disorders and administration site conditions			
Pyrexia			
subjects affected / exposed	1 / 359 (0.28%)	0 / 117 (0.00%)	0 / 70 (0.00%)
occurrences causally related to treatment / all	0 / 1	0 / 0	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Respiratory, thoracic and mediastinal disorders			
Asthma			
alternative assessment type: Non-systematic			
subjects affected / exposed	0 / 359 (0.00%)	0 / 117 (0.00%)	1 / 70 (1.43%)
occurrences causally related to treatment / all	0 / 0	0 / 0	0 / 1
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0

<b>Serious adverse events</b>	Meningitec Group (Year 2)	NoBoost Group	
Total subjects affected by serious adverse events			
subjects affected / exposed	0 / 23 (0.00%)	0 / 72 (0.00%)	
number of deaths (all causes)	0	0	
number of deaths resulting from adverse events			
General disorders and administration site conditions			
Pyrexia			
subjects affected / exposed	0 / 23 (0.00%)	0 / 72 (0.00%)	
occurrences causally related to treatment / all	0 / 0	0 / 0	
deaths causally related to treatment / all	0 / 0	0 / 0	
Respiratory, thoracic and mediastinal disorders			
Asthma			
alternative assessment type: Non-systematic			
subjects affected / exposed	0 / 23 (0.00%)	0 / 72 (0.00%)	
occurrences causally related to treatment / all	0 / 0	0 / 0	
deaths causally related to treatment / all	0 / 0	0 / 0	

Frequency threshold for reporting non-serious adverse events: 5 %

<b>Non-serious adverse events</b>	Menitorix Group (Booster)	Meningitec Group (Booster)	Menitorix Group (Year 2)
Total subjects affected by non-serious adverse events			
subjects affected / exposed	0 / 359 (0.00%)	0 / 117 (0.00%)	0 / 70 (0.00%)

<b>Non-serious adverse events</b>	Meningitec Group (Year 2)	NoBoost Group	
Total subjects affected by non-serious adverse events			
subjects affected / exposed	0 / 23 (0.00%)	0 / 72 (0.00%)	

## More information

### Substantial protocol amendments (globally)

Were there any global substantial amendments to the protocol? Yes

Date	Amendment
26 October 2009	<p>Amendment 3.</p> <p>The protocol was amended to enlarge the age window at Visit 3 from 60-64 months of age to 56-64 months of age.</p> <p>About 40% of the subjects of groups HibMenC and LicMenC had a Hib and/or MenC suboptimal response at 2 years after administration of the Hib-MenC booster dose (i.e. blood sample taken in study 109666 Hib-MenC-TT-028 EXT:013 M24) and will be offered an extra dose of a Hib and/or MenC licensed vaccine.</p> <p>Since administration of an extra dose of Hib and/or MenC vaccine since the previous long term persistence visit is an exclusion criterion for the ATP cohort for persistence Year 4, 40% of the subjects would be lost for the analysis on that cohort. To allow administration of an extra dose of Hib and/or MenC vaccine as soon as possible after the blood sampling of study 109668 (Hib-MenC-TT-029 EXT: 013 M48) this protocol amendment allows Visit 3 to take place 4 months earlier than originally planned (at 56-64 months of age instead of at 60- 64 months of age). In addition, an error was detected in the study vaccine number for GlaxoSmithKline (GSK) Biologicals. Haemophilus influenzae type b (Hib) - meningococcal serogroup C (MenC) - tetanus toxoid conjugate (Hib-MenC) vaccine mentioned in Protocol</p> <p>Amendment 2. The correct vaccine number is 811936. The reference to Edition 3 of the Hib-MenC-TT Investigator Brochure was removed since a more recent version is available.</p>

Notes:

### Interruptions (globally)

Were there any global interruptions to the trial? No

### Limitations and caveats

None reported