

THE LANCET

Child & Adolescent Health

Supplementary appendix

This appendix formed part of the original submission and has been peer reviewed.
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Supplement to: Williams TC, Marlow R, Cunningham S, et al. Bivalent pertussis
vaccination in pregnancy and respiratory syncytial virus hospitalisation in
infants in the UK: results of a multicentre, test-negative, case-control study.
Lancet Child Adolesc Health 2025; published online July 18. [https://doi.org/10.1016/
S2352-4642\(25\)00155-5](https://doi.org/10.1016/S2352-4642(25)00155-5).

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Table S1. PERUKI & BronchStart Collaboration Site Leads and Co-Leads.

SITE	SITE LEAD(S)	CO-LEAD(S)
ROYAL ABERDEEN CHILDREN'S HOSPITAL	Catriona Middleton, Maggie Connon	Jill Paxton, Nicola Thomson
ADDENBROOKE'S HOSPITAL	James Baker	Susie Hardwick, Karena Fraser, Kathryn Kimber, Asa French
ALDER HEY CHILDREN'S HOSPITAL NHS FOUNDATION TRUST	Meriel Tolhurst-Cleaver, Sarah Siner	Stephen Fletcher, Karen Geoghegan, Laura Tremarco, Kelly Curran
BARNET HOSPITAL	Cynthia Diaba	Chidinma Iheanetu-Oguejiofor, Lobsong Dolma, Stephen Ruo, Richard Berg, Sarah Farah, Elena Kehtarnavaz
THE ROYAL LONDON HOSPITAL (BARTS HEALTH NHS TRUST)	Abigail Whitehouse	Grace Wild, Sobia Siraj, Ioannis Kyrgios
ROYAL BELFAST HOSPITAL FOR SICK CHILDREN	Tom Waterfield, Shaun O'Hagan	
BRISTOL ROYAL HOSPITAL FOR CHILDREN	Robin Marlow	Elizabeth Ledger, Ruth Bonsor, Katy Lillie, Robert Eggen
COUNTESS OF CHESTER NHS FOUNDATION TRUST	Stephen Brearey	Caroline Burchett, Sarah de-Beger
COLCHESTER HOSPITAL	Mat Stuart	Chiara De Leonardis
CROSSHOUSE HOSPITAL (KILMARNOCK)	Claire Bell	Lawrence Armstrong
DONCASTER AND BASSETLAW EAST CHESHIRE NHS TRUST	Babu Benjamin	Sarah Farmer
RHCYP EDINBURGH	Dr Mudiyyur Gopi	Natalie Keenan
EVELINA LONDON CHILDREN'S HOSPITAL	Jen Browning, Caroline Blackstock	Rachel O'Brien
ST GEORGE'S UNIVERSITY HOSPITALS NHS FOUNDATION TRUST	Gracita Woods	Sylvester Gomes, Dilini Vasanthakumar, Kayleigh Kanhai
RHC GLASGOW	Heather Jarman, Zee Karame	
IPSWICH HOSPITAL	Steve Foster, Susanne Cathcart	Louise Edwards, James Poole-Cowley
LEICESTER ROYAL INFIRMARY	David Hartin	Rebecca Francis, Genevieve Nguya, Deborah Beeby
LEICESTER ROYAL INFIRMARY	Damian Roland	Samantha Hunt
LEIGHTON HOSPITAL, MID-CHESHIRE MEDWAY HOSPITAL NHS FOUNDATION TRUST	Joanne Tomlinson	Jo Tillet, Simon Dowson
NINEWELLS HOSPITAL, DUNDEE	Surendra Singham	Perpetual Palmer
NORTHERN LINCOLNSHIRE AND GOOLE	Eilidh Grant	Pauline Miller
NORTHUMBRIA HEALTHCARE NHS FOUNDATION TRUST	Kelum Perera	Jasmine Stares, Manuela Brazil
NEWHAM HOSPITAL (BARTS HEALTH TRUST)	Lee Tubman, Sunil Bhopal	Jessica Reynolds, Gabrielle Larkin
MERSEY AND WEST LANCASHIRE TEACHING HOSPITALS NHS TRUST- ORMSKIRK HOSPITAL	Ivone Lancoma-Malcolm	
OXFORD CHILDREN'S HOSPITAL	Sharryn Gardner	Kerri Bowness, Moira Morrison
	Nicholas Richens	

POOLE HOSPITAL	Heather Deall	Jemma Parratt, Stephanie Grigsby, Nina Vanner, Francesca Diaz
ROYAL DERBY HOSPITAL	Graham Johnson	Jonathan Riley, Alison Fletcher, Alison Matthews, Lianne Hufton, Alison Rockey, REMEDY Research Team
ROYAL FREE HOSPITAL	Cynthia Diaba	Chidinma Iheanetu-Oguejiofor, Lobsong Dolma, Stephen Ruo, Katie Bub. Elena Kehtarnavaz
ROTHERHAM NHS FOUNDATION TRUST	George Hamson	Hannah Randall
SALISBURY NHS FOUNDATION TRUST	Jessica Evans, Sebastian J Gray	Ginny Griffiths, Sarah Diment
SHEFFIELD CHILDREN'S NHS FOUNDATION TRUST	Nikki Furness	Stuart Gormley, Rebecca Scott, Victoria Bamber, Kathryn Jones, Megan Wilcock
MERSEY AND WEST LANCASHIRE TEACHING HOSPITALS NHS TRUST-WHISTON HOSPITAL	Clare O'Leary	Kerri Bowness
SUNDERLAND ROYAL HOSPITAL	Louise Fairlie	Rophy Nunes, Niall Mullen
WATFORD GENERAL HOSPITAL (WEST HERTFORDSHIRE TEACHING HOSPITALS NHS TRUST)	Richard Burrige	Katrina Hall
WHITTINGTON HEALTH NHS TRUST	Lily Kirkpatrick	Leanne Taylor, Lily Kirkpatrick, Erum Jamall
WHIPPS CROSS HOSPITAL (BARTS HEATH NHS TRUST)	Amutha Anpananthar, Aydin Koksall	Nosheen Khalid

Table S2. RSV testing modality by recruitment site.

SITE	RSV TESTING MODALITY
ROYAL ABERDEEN CHILDREN'S HOSPITAL	rRT-PCR via NPA
ADDENBROOKE'S HOSPITAL	rRT-PCR via NPA
ALDER HEY CHILDREN'S HOSPITAL NHS FOUNDATION TRUST	rRT-PCR (Biofire FilmArray) via NPA or NPS
BARNET HOSPITAL	rRT-PCR via NPA
ROYAL LONDON HOSPITAL (BARTS HEALTH NHS TRUST)	rRT-PCR (COBAS) via NPA or NPS
NORTHUMBRIA SPECIALIST EMERGENCY CARE HOSPITAL	rRT-PCR (GenXpert) via nasal swab, NPA or NPS
BRISTOL ROYAL HOSPITAL FOR CHILDREN	rRT-PCR (Cepheid/Biofire) via NPA or NPS
COLCHESTER HOSPITAL	Abbott ID NOW Influenza A & B 2 and RSV
COUNTESS OF CHESTER NHS FOUNDATION TRUST	Cepheid GeneXpert PCR testing
DONCASTER AND BASSETLAW	RSV Abbot ID NOW testing, COVID ID-NOW
RHCYP EDINBURGH	rRT-PCR (GenXpert) via nasal swab, NPA or NPS
EVELINA LONDON CHILDREN'S HOSPITAL	rRT-PCR via NPA or NPS
ST GEORGE'S UNIVERSITY HOSPITALS NHS FOUNDATION TRUST	rRT-PCR (AusDiagnostics) and rapid test POCT CobasLIAT PCR, via NPA or NPS
RHC GLASGOW	POC: Roche LIAT – Flu /RSV or Flu/COVID assay. Alinity M COVID, Flu, RSV. Roche COBAS for SARS-CoV-2.
LEICESTER ROYAL INFIRMARY	rRT-PCR using Cepheid GeneXpert, Panther Fusion and R-Biopharm (AusDiagnostics)
LEIGHTON HOSPITAL, MID-CESHIRE	Cepheid GeneXpert PCR testing in Emergency Department, rRT-PCR for admission
MEDWAY HOSPITAL NHS FOUNDATION TRUST	SAMBA II nucleic-acid based amplification for RSV
NINEWELLS HOSPITAL, DUNDEE	GeneXpert RSV A/B RNA
NEWHAM HOSPITAL (BARTS HEALTH NHS TRUST)	rRT-PCR (COBAS) via NPA or NPS
NORTHERN LINCOLNSHIRE AND GOOLE	rRT-PCR via NPA
POOLE HOSPITAL	Biofire respiratory panel 2 FilmArray; GenXpert POC test for SARS-CoV-2, Flu A/B & RSV
ROYAL DERBY HOSPITAL	rRT-PCR via NPA or NPS
ROYAL FREE HOSPITAL	rRT-PCR via NPA or NPS
ROTHERHAM NHS FOUNDATION TRUST	RSV POCT Abbott ID NOW testing. If POCT negative and high suspicion of virus, Qiastat (Qiagen) rRT-PCR
SALISBURY NHS FOUNDATION TRUST	Biofire extended Film Array for respiratory (RSV) PCR testing. Cepheid GeneXpert PCR testing via NPA or NPS
SHEFFIELD CHILDREN'S NHS FOUNDATION TRUST	rRT-PCR (GenXpert) via nasal swab, NPA or NPS
SUNDERLAND ROYAL HOSPITAL	If POCT for influenza/SARS-CoV-2 negative; if high suspicion of viral illness rRT-PCR via NPA or NPS
WATFORD GENERAL HOSPITAL	Cepheid GeneXpert PCR testing via NPA or NPS
WHITTINGTON HEALTH NHS TRUST	Cepheid GeneXpert PCR testing via NPA or NPS
WHIPPS CROSS HOSPITAL (BARTS HEALTH NHS TRUST)	rRT-PCR (COBAS) via NPA or NPS

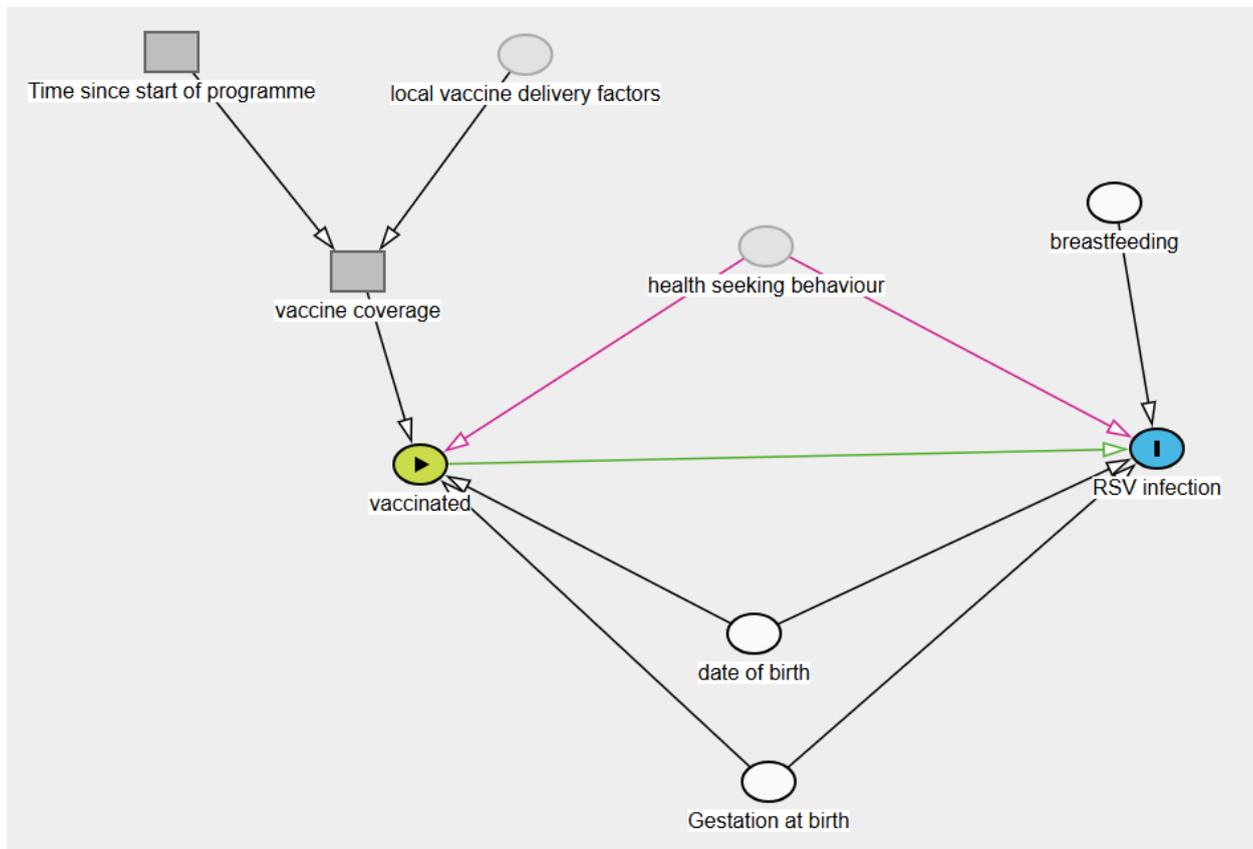
NPA denotes naso-pharyngeal aspirate, NPS naso-pharyngeal swab; rRT-PCR real-time reverse transcriptase polymerase chain reaction, and POC point of care testing.

Table S3. Variation in number of cases by different assumptions of vaccine effectiveness and uptake.

Calculated using epiR::epi.ssc¹ with following parameters: OR = 1-VE, p0 = coverage, power = 0.9).

	VACCINE EFFECTIVENESS					
UPTAKE	40%	50%	60%	70%	80%	90%
5%	2,161	1,287	828	560	391	280
10%	1,114	659	420	281	195	137
15%	768	451	285	189	129	90
20%	597	348	218	143	97	66
25%	498	287	178	116	77	52
30%	433	248	153	98	64	43
40%	361	203	123	77	49	31
50%	329	182	108	66	40	24
60%	326	177	102	61	36	20

Figure S1. Directed acyclic graph for the BronchStop Vaccine Effectiveness study.



A test negative design was chosen to account for potential biases in health seeking behaviour. Age and prematurity were identified as potential confounders and used as co-factors in the logistic regression, alongside age as used in previous maternal vaccination VE studies^{2,3}.

References

1. Dupont WD. Power calculations for matched case-control studies. *Biometrics* 1988 44(4): 1157–68.
2. Halasa NB, Olson SM, Staat MA, et al. Maternal vaccination and risk of hospitalization for Covid-19 among infants. *New England Journal of Medicine*. 2022 Jul 14;387(2):109-19.
3. Jorgensen SC, Hernandez A, Fell DB, et al. Maternal mRNA covid-19 vaccination during pregnancy and delta or omicron infection or hospital admission in infants: test negative design study. *BMJ* 2023 Feb 8;380.