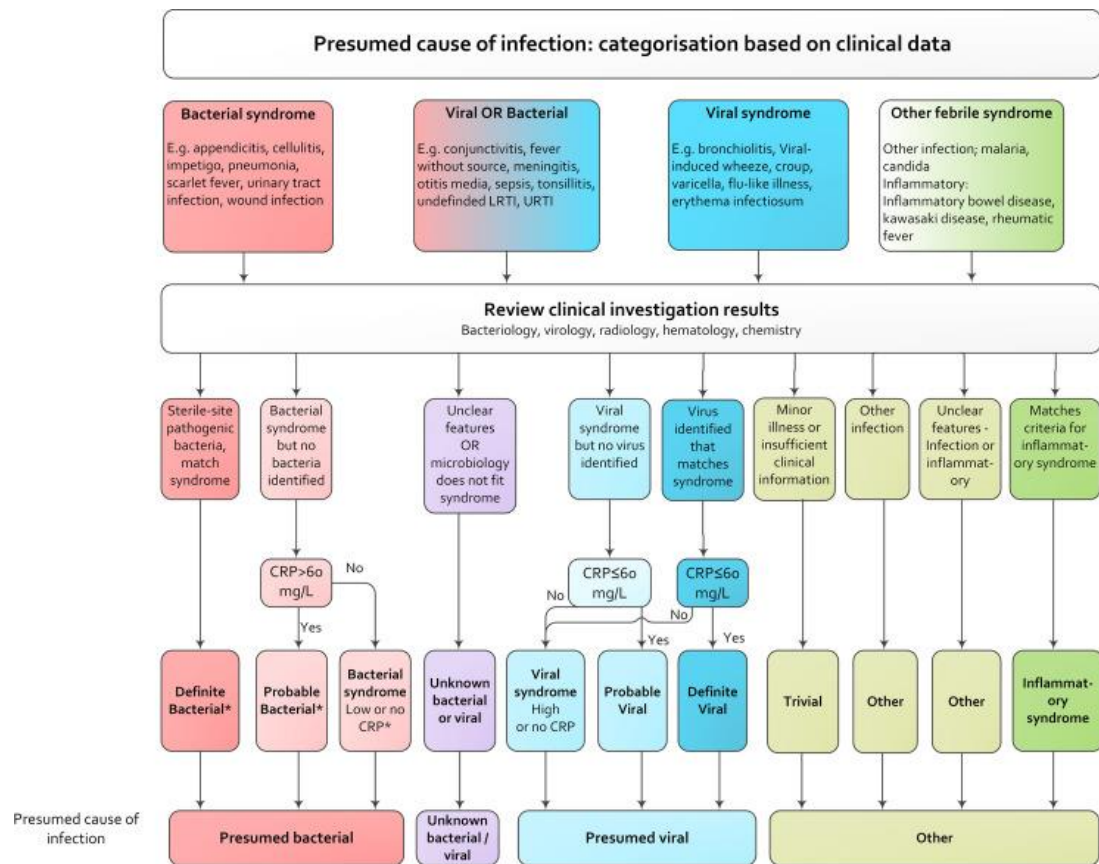


Appendices

Appendix A – Hospital characteristics

Hospital	City, country	Type of hospital	Annual paediatric ED visits	Period of active data collection
Erasmus MC – Sophia Children’s Hospital (N=1683)	Rotterdam, the Netherlands	University	<10,000	Whole month
Canisius Wilhelmina Ziekenhuis (N=423)	Nijmegen, the Netherlands	Teaching	<10,000	Whole month
Medizinische Universität Graz (N=2241)	Graz, Austria	University	10,000-30,000	10 days/month
St. Mary’s Hospital (N=5714)	London, UK	University	>30,000	Whole month
Hospital Clínico Universitario (N=3877)	Santiago de Compostela, Spain	University	>30,000	14 days/month
Children’s Clinical University Hospital (N=9000)	Riga, Latvia	University	>30,000	Whole month
Alder Hey Children’s Hospital (N=1623)	Liverpool, UK	University	>30,000	7 days/month
Dr. von Hauner Children’s Hospital (N=1173)	Munich, Germany	University	10,000-30,000	7 days/month
Great North Children’s Hospital (N=3854)	Newcastle, UK	University	>30,000	14 days/month

Appendix B – Phenotyping Algorithm



*In case of viral co-infection, bacterial infection got priority

Appendix C – Triage urgency categories per ED setting

	Low* (N=16,683, 56%)	Intermediate (N=8130, 28%)	High* (N=3613, 12%)	Missing (N=1162, 4%)
London (n=5714)	1523 (27)	2182 (38)	1978 (35)	31 (0.5)
Liverpool (n=1623)	1053 (65)	288 (18)	262 (16)	20 (1)
Newcastle (n=3854)	2663 (69)	620 (16)	38 (1)	533 (14)
Rotterdam (n=1683)	377 (22)	949 (56)	297 (18)	60 (4)
Santiago de Compostela (n=3877)	3444 (89)	419 (11)	14 (0.4)	/
Graz (n=2241)	1522 (68)	433 (19)	125 (6)	161 (7)
Riga (n=9000)	5133 (57)	2996 (33)	868 (10)	3
Munich (n=1173)	660 (56)	158 (14)	13 (1)	342 (29)
Nijmegen (n=423)	308 (73)	85 (20)	18 (4)	12 (3)

Absolute numbers and percentages (%) are given

*Low urgency consists of the MTS categories standard (55%) and non-urgent (0.4%)

*High urgency consists of the MTS categories very urgent (12%) and immediate (0.7%)

Appendix D – Patient characteristics stratified by presenting symptom groups

	Neurological (N=237)	Respiratory (N=8476)	Gastrointestinal (N=1953)	Other (N=3473)
Age* (years)	2.0 (1.4-3.3)	2.7 (1.3-4.9)	3.0 (1.3-6.3)	2.6 (1.1-5.4)
Gender (boys)	128 (54)	4621 (55)	1021 (52)	1843 (53)
Visit hours (out of office)	168 (71)	5975 (71)	1311 (67)	2398 (69)
Referral (self-referred)	102 (43)	6029 (71)	1198 (61)	2301 (66)
Previous medical care	50 (21)	2083 (25)	471 (24)	777 (22)
Previous antibiotic treatment	19 (8)	917 (11)	120 (6)	430 (12)

Absolute numbers and percentages (%) are given

* Median and (IQR 25-75)

Appendix E – Association between presenting symptoms and management, unadjusted and adjusted odds ratio's

	Unadjusted OR	aOR
Neurological		
Laboratory blood test	0.5 (0.4-0.7)	1.3 (0.9-1.8)
Imaging	0.9 (0.6-1.4)	1.8 (1.1-2.9)
Admission	1.9 (1.4-2.6)	1.9 (1.4-2.7)
Respiratory		
Laboratory blood test	0.6 (0.5-0.6)	0.6 (0.5-0.7)
Imaging	1.5 (1.3-1.6)	1.8 (1.6-2.0)
Admission	0.5 (0.5-0.6)	0.6 (0.5-0.7)
Gastrointestinal		
Laboratory blood test	1.0 (0.8-1.1)	1.2 (1.1-1.4)
Imaging	0.9 (0.8-1.1)	1.1 (0.9-1.3)
Admission	1.3 (1.1-1.4)	1.4 (1.2-1.6)

Other presenting symptoms group as reference group.

Adjusted for age, gender, referral status, previous medical care, previous antibiotic use, visiting hours, ED setting.

Appendix F – Association between presenting symptoms and management stratified for ED settings with low and high prevalence of low urgent triaged children

4 ED settings with low prevalence of low urgent triaged children (N=6667)		
	Unadjusted OR	aOR
Neurological		
Laboratory blood test	0.7 (0.4-1.1)	2.1 (1.1-3.8)
Imaging	1.9 (1.0-3.4)	4.0 (2.0-7.8)
Admission	1.7 (1.0-3.0)	2.5 (1.3-4.5)
Respiratory		
Laboratory blood test	0.6 (0.6-0.7)	0.7 (0.6-0.8)
Imaging	1.7 (1.4-1.9)	1.9 (1.6-2.2)
Admission	0.6 (0.5-0.7)	0.7 (0.6-0.8)
Gastrointestinal		
Laboratory blood test	1.1 (1.0-1.3)	1.6 (1.3-1.9)
Imaging	0.9 (0.7-1.2)	1.1 (0.9-1.4)
Admission	1.3 (1.0-1.5)	1.5 (1.2-1.8)

Other presenting symptoms group as reference group.

Adjusted for age, gender, referral status, previous medical care, previous antibiotic use, visiting hours, ED setting.

5 ED settings with high prevalence of low urgent triaged children (N=7472)		
	Unadjusted OR	aOR
Neurological		
Laboratory blood test	0.7 (0.5-1.0)	0.9 (0.6-1.5)
Imaging	0.8 (0.4-1.5)	1.0 (0.5-2.0)
Admission	2.2 (1.6-3.2)	1.7 (1.1-2.5)
Respiratory		
Laboratory blood test	0.6 (0.5-0.7)	0.4 (0.4-0.5)
Imaging	1.4 (1.2-1.8)	1.6 (1.3-2.0)
Admission	0.5 (0.4-0.6)	0.6 (0.5-0.7)
Gastrointestinal		
Laboratory blood test	0.9 (0.8-1.1)	0.8 (0.6-1.0)
Imaging	1.0 (0.8-1.4)	1.0 (0.7-1.4)
Admission	1.3 (1.1-1.6)	1.2 (1.0-1.6)

Other presenting symptoms group as reference group.

Adjusted for age, gender, referral status, previous medical care, previous antibiotic use, visiting hours, ED setting.

Appendix G – PERFORM consortium authors listPARTNER: IMPERIAL COLLEGE (UK)Chief investigator/PERFORM coordinator:

Michael Levin

Principal and co-investigators: work package leads (alphabetical order)

Aubrey Cunnington (grant application)

Tisham De (work package lead)

Jethro Herberg (Principle Investigator, Deputy Coordinator, grant application)

Myrsini Kaforou (grant application, work package lead)

Victoria Wright (grant application, Scientific Coordinator)

Research Group (alphabetical order)

Lucas Baumard; Evangelos Bellos; Giselle D'Souza; Rachel Galassini; Dominic Habgood-Coote; Shea Hamilton; Clive Hoggart; Sara Hourmat; Heather Jackson; Ian Maconochie; Stephanie Menikou; Naomi Lin; Samuel Nichols; Ruud Nijman; Ivonne Pena Paz; Priyen Shah; Ching-Fen Shen; Ortensia Vito; Clare Wilson

Clinical recruitment at Imperial College Healthcare NHS Trust (alphabetical order))

Amina Abdulla; Ladan Ali; Sarah Darnell; Rikke Jorgensen; Sobia Mustafa; Salina Persand

Imperial College Faculty of Engineering

Molly Stevens (co-investigator), Eunjung Kim (research group); Benjamin Pierce (research group)

Clinical recruitment at Brighton and Sussex University Hospitals

Katy Fidler (Principle Investigator)

Julia Dudley (Clinical Research Registrar)

Research nurses: Vivien Richmond, Emma Tavliavini

Clinical recruitment at National Cheng Kung University Hospital

Ching-Fen Shen (Principal Investigator); Ching-Chuan Liu (Co-investigator); Shih-Min Wang (Co-investigator), funded by the Center of Clinical Medicine Research, National Cheng Kung University

SER GAS Partner (Spain)Principal InvestigatorsFederico Martínón-Torres¹Antonio Salas^{1,2}GENVIP RESEARCH GROUP (in alphabetical order):

Fernando Álvez González¹, Cristina Balo Farto¹, Ruth Barral-Arca^{1,2}, María Barreiro Castro¹, Xabier Bello^{1,2}, Mirian Ben García¹, Sandra Carnota¹, Miriam Cebey-López¹, María José Curras-Tuala^{1,2}, Carlos Durán Suárez¹, Luisa García Vicente¹, Alberto Gómez-Carballea^{1,2}, Jose Gómez Rial¹, Pilar Leboráns Iglesias¹, Federico Martínón-Torres¹, Nazareth Martínón-Torres¹, José María Martínón

Sánchez¹, Belén Mosquera Pérez¹, Jacobo Pardo-Seco^{1,2}, Lidia Piñeiro Rodríguez¹, Sara Pischedda^{1,2}, Sara Rey Vázquez¹, Irene Rivero Calle¹, Carmen Rodríguez-Tenreiro¹, Lorenzo Redondo-Collazo¹, Miguel Sadiki Ora¹, Antonio Salas^{1,2}, Sonia Serén Fernández¹, Cristina Serén Trasorras¹, Marisol Vilas Iglesias¹.

¹Translational Pediatrics and Infectious Diseases, Pediatrics Department, Hospital Clínico Universitario de Santiago, Santiago de Compostela, Spain, and GENVIP Research Group (www.genvip.org), Instituto de Investigación Sanitaria de Santiago, Universidad de Santiago de Compostela, Galicia, Spain.

²Unidade de Xenética, Departamento de Anatomía Patolóxica e Ciencias Forenses, Instituto de Ciencias Forenses, Facultade de Medicina, Universidade de Santiago de Compostela, and GenPop Research Group, Instituto de Investigaciones Sanitarias (IDIS), Hospital Clínico Universitario de Santiago, Galicia, Spain

³Fundación Pública Galega de Medicina Xenómica, Servizo Galego de Saúde (SERGAS), Instituto de Investigaciones Sanitarias (IDIS), and Grupo de Medicina Xenómica, Centro de Investigación Biomédica en Red de Enfermedades Raras (CIBERER), Universidade de Santiago de Compostela (USC), Santiago de Compostela, Spain

RSU Partner (Latvia)

Principal Investigator

Dace Zavadska^{1,2}

Other RSU group authors (in alphabetical order):

Anda Balode^{1,2}, Arta Bārzdiņa^{1,2}, Dārta Dekse^{1,2}, Dace Gardovska^{1,2}, Dagne Grāvele², Ilze Grope^{1,2}, Anija Meiere^{1,2}, Ieva Nokalna^{1,2}, Jana Pavāre^{1,2}, Zanda Pučuka^{1,2}, Katrīna Selecka^{1,2}, Aleksandra Sidorova^{1,2}, Dace Svile², Urzula Nora Urbāne^{1,2}.

¹Riga Stradins university, Riga, Latvia.

²Children clinical university hospital, Riga, Latvia.

Medical Research Council Unit The Gambia (MRCG) at LSHTM Partner

Principal Investigator

Effua Usuf

Additional Investigators

Kalifa Bojang

Syed M. A. Zaman

Fatou Secka

Suzanne Anderson

Anna Rocalsatou Sarr

Momodou Saidykhan

Saffiatou Darboe

Samba Ceesay

Umberto D'alessandro

Medical Research Council Unit The Gambia at LSHTM

P O Box 273,

Fajara, The Gambia

ERASMUS MC-Sophia Children's Hospital**Principal Investigator**Henriëtte A. Moll¹**Research group**Dorine M. Borensztajn¹, Nienke N. Hagedoorn, Chantal Tan ^{1, 1}, Clementien L. Vermont², Joany Zachariasse ¹**Additional investigator**W Dik ³¹ Erasmus MC-Sophia Children's Hospital, Department of General Paediatrics, Rotterdam, the Netherlands² Erasmus MC-Sophia Children's Hospital, Department of Paediatric Infectious Diseases & Immunology, Rotterdam, the Netherlands³ Erasmus MC, Department of immunology, Rotterdam, the Netherlands**Swiss Pediatric Sepsis Study****Principal Investigators:**Philipp Agyeman, MD ¹ (ORCID 0000-0002-8339-5444), Luregn J Schlapbach, MD, FCICM ^{2,3} (ORCID 0000-0003-2281-2598)**Clinical recruitment at University Children's Hospital Bern for PERFORM:**Christoph Aebi ¹, Verena Wyss ¹, Mariama Usman ¹**Principal and co-investigators for the Swiss Pediatric Sepsis Study:**Philipp Agyeman, MD ¹, Luregn J Schlapbach, MD, FCICM ^{2,3}, Eric Giannoni, MD ^{4,5}, Martin Stocker, MD ⁶, Klara M Posfay-Barbe, MD ⁷, Ulrich Heininger, MD ⁸, Sara Bernhard-Stirnemann, MD ⁹, Anita Niederer-Loher, MD ¹⁰, Christian Kahlert, MD ¹⁰, Giancarlo Natalucci, MD ¹¹, Christa Relly, MD ¹², Thomas Riedel, MD ¹³, Christoph Aebi, MD ¹, Christoph Berger, MD ¹² **for the Swiss Pediatric Sepsis Study****Affiliations:**¹ Department of Pediatrics, Inselspital, Bern University Hospital, University of Bern, Switzerland² Neonatal and Pediatric Intensive Care Unit, Children's Research Center, University Children's Hospital Zurich, University of Zurich, Zurich, Switzerland³ Child Health Research Centre, University of Queensland, and Queensland Children's Hospital, Brisbane, Australia⁴ Clinic of Neonatology, Department Mother-Woman-Child, Lausanne University Hospital and University of Lausanne, Switzerland⁵ Infectious Diseases Service, Department of Medicine, Lausanne University Hospital and University of Lausanne, Switzerland⁶ Department of Pediatrics, Children's Hospital Lucerne, Lucerne, Switzerland⁷ Pediatric Infectious Diseases Unit, Children's Hospital of Geneva, University Hospitals of Geneva, Geneva, Switzerland

⁸ Infectious Diseases and Vaccinology, University of Basel Children's Hospital, Basel, Switzerland

⁹ Children's Hospital Aarau, Aarau, Switzerland

¹⁰ Division of Infectious Diseases and Hospital Epidemiology, Children's Hospital of Eastern Switzerland St. Gallen, St. Gallen, Switzerland

¹¹ Department of Neonatology, University Hospital Zurich, Zurich, Switzerland

¹² Division of Infectious Diseases and Hospital Epidemiology, and Children's Research Center, University Children's Hospital Zurich, Switzerland

¹³ Children's Hospital Chur, Chur, Switzerland

Liverpool Partner

Principal Investigators

Enitan D Carrol^{1,2,3}

Stéphane Paulus¹

Research Group (in alphabetical order):

Elizabeth Cocklin¹, Rebecca Jennings⁴, Joanne Johnston⁴, Simon Leigh¹, Karen Newall⁴, Sam Romaine¹

¹ Department of Clinical Infection, Microbiology and Immunology, University of Liverpool Institute of Infection and Global Health, Liverpool, England

² Alder Hey Children's Hospital, Department of Infectious Diseases, Eaton Road, Liverpool, L12 2AP

³ Liverpool Health Partners, 1st Floor, Liverpool Science Park, 131 Mount Pleasant, Liverpool, L3 5TF

⁴ Alder Hey Children's Hospital, Clinical Research Business Unit, Eaton Road, Liverpool, L12 2AP

NKUA Partner (Greece)

Principal investigator: Professor **Maria Tsolia** (all activities)

Investigator/Research fellow: **Irini Eleftheriou** (all activities)

Additional investigators:

Recruitment: Maria Tambouratzi

Lab: Antonis Marmarinos (Quality Manager)

Lab: Marietta Xagorari

Kelly Syggelou

2nd Department of Pediatrics, National and Kapodistrian University of Athens,

“P. and A. Kyriakou” Children's Hospital

Thivon and Levadias

Goudi, Athens

Micropathology Ltd :Principal Investigator:

Professor Colin Fink¹, Clinical Microbiologist

Additional investigators

Dr Marie Voice¹, Post doc scientist

Dr. Leo Calvo-Bado¹, Post doc scientist

¹ Micropathology Ltd, The Venture Center, University of Warwick Science Park, Sir William Lyons Road, Coventry, CV4 7EZ.

Medical University of Graz, Austria (MUG)Principal Investigator:

Werner Zenz¹ (all activities)

Co-investigators (in alphabetical order)

Benno Kohlmaier¹ (all activities)

Nina A. Schweintzger¹ (all activities)

Manfred G. Sagmeister¹ (study design, consortium wide sample management)

Research team

Daniela S. Kohlfürst¹ (study design)

Christoph Zurl¹ (BIVA PIC)

Alexander Binder¹ (grant application)

Recruitment team, data managers, (in alphabetical order):

Susanne Hösele¹, Manuel Leitner¹, Lena Pölz¹, Glorija Rajic¹,

Clinical recruitment partners (in alphabetical order):

Sebastian Bauchinger¹, Hinrich Baumgart⁴, Martin Benesch³, Astrid Ceolotto¹, Ernst Eber², Siegfried Gallistl¹, Gunther Gores⁵, Harald Haidl¹, Almuthe Hauer¹, Christa Hude¹, Markus Keldorfer⁵, Larissa Krenn⁴, Heidemarie Pilch⁵, Andreas Pfleger², Klaus Pfurtscheller⁴, Gudrun Nordberg⁵, Tobias Niedrist⁸, Siegfried Rödl⁴, Andrea Skrabl-Baumgartner¹, Matthias Sperl⁷, Laura Stampfer⁵, Volker Strenger³, Holger Till⁶, Andreas Trobisch⁵, Sabine Löffler⁵

Author Affiliations:

¹ Department of Pediatrics and Adolescent Medicine, Division of General Pediatrics, Medical University of Graz, Graz, Austria

²Department of Pediatric Pulmonology, Medical University of Graz, Graz, Austria

³Department of Pediatric Hematooncoloy, Medical University of Graz, Graz, Austria

⁴Paediatric Intensive Care Unit, Medical University of Graz, Graz, Austria

⁵University Clinic of Paediatrics and Adolescent Medicine Graz, Medical University Graz, Graz, Austria

⁶Department of Paediatric and Adolescence Surgery, Medical University Graz, Graz, Austria

⁷Department of Pediatric Orthopedics, Medical University Graz, Graz, Austria

⁸Clinical Institute of Medical and Chemical Laboratory Diagnostics, Medical University Graz, Graz, Austria

London School of Hygiene and Tropical Medicine

WP 1 WP2, WP5

Principal Investigator:

Dr Shunmay Yeung^{1,2,3} PhD, MBBS, FRCPCH, MRCP, DTM&H

Research Group

Dr Juan Emmanuel Dewez¹ MD, DTM&H, MSc

Prof Martin Hibberd¹ BSc, PhD

Mr David Bath² MSc, MAppFin, BA(Hons)

Dr Alec Miners² BA(Hons), MSc, PhD

Dr Ruud Nijman³ PhD MSc MD MRCPCH

Dr Catherine Wedderburn¹ BA, MBChB, DTM&H, MSc, MRCPCH

Ms Anne Meierford¹ MSc, BMedSc, BMBS

Dr Baptiste Leurent⁴, PhD, MSc

1. Faculty of Infectious and Tropical Disease, London School of Hygiene and Tropical Medicine, London, UK
2. Faculty of Public Health and Policy, London School of Hygiene and Tropical Medicine, London, UK
3. Department of Paediatrics, St. Mary's Hospital Imperial College Hospital, London, UK
4. Faculty of Epidemiology and Population Health, London School of Hygiene and Tropical Medicine, London, UK

Radboud University Medical Center (RUMC), The Netherlands

Principal Investigators:

Ronald de Groot¹, Michiel van der Flier^{1,2,3}, Marien I. de Jonge¹

Co-investigators Radboud University Medical Center (in alphabetical order):

Koen van Aerde^{1,2}, Wynand Alkema¹, Bryan van den Broek¹, Jolein Gloerich¹, Alain J. van Gool¹, Stefanie Henriët^{1,2}, Martijn Huijnen¹, Ria Philipsen¹, Esther Willems¹

Investigators PeDBIG PERFORM DUTCH CLINICAL NETWORK (in alphabetical order):

G.P.J.M. Gerrits⁸, M. van Leur⁸, J. Heidema⁴, L. de Haan^{1,2}, C.J. Miedema⁵, C. Neeleman¹, C.C. Obihara⁶, G.A. Tramper-Stranders⁷

1. Radboud University Medical Center, Nijmegen, The Netherlands
2. Amalia Children's Hospital, Nijmegen, The Netherlands
3. Wilhelmina Children's Hospital, University Medical Center Utrecht, Utrecht, The Netherlands
4. St. Antonius Hospital, Nieuwegein, The Netherlands
5. Catharina Hospital, Eindhoven, The Netherlands
6. ETZ Elisabeth, Tilburg, The Netherlands
7. Franciscus Gasthuis, Rotterdam, The Netherlands
8. Canisius Wilhelmina Hospital, Nijmegen, The Netherlands

Oxford team (UK)**Principal Investigators**

Andrew J. Pollard^{1,2}, Rama Kandasamy^{1,2}, Stéphane Paulus^{1,2}

Additional Investigators

Michael J. Carter^{1,2}, Daniel O'Connor^{1,2}, Sagida Bibi^{1,2}, Dominic F. Kelly^{1,2}, Meeru Gurung³, Stephen Thorson³, Imran Ansari³, David R. Murdoch⁴, Shrijana Shrestha³, Zoe Oliver⁵

Author Affiliations:

¹Oxford Vaccine Group, Department of Paediatrics, University of Oxford, Oxford, United Kingdom.

²NIHR Oxford Biomedical Research Centre, Oxford, United Kingdom.

³Paediatric Research Unit, Patan Academy of Health Sciences, Kathmandu, Nepal.

⁴Department of Pathology, University of Otago, Christchurch, New Zealand.

⁵ Department of Paediatrics, University of Oxford.

Newcastle University, Newcastle upon Tyne, (UK)**Principal Investigator:**

Marieke Emonts^{1,2,3} (all activities)

Co-investigators

Emma Lim^{2,3,7} (all activities)

Lucille Valentine⁴

Recruitment team (alphabetical), data-managers, and GNCH Research unit:

Karen Allen⁵, Kathryn Bell⁵, Adora Chan⁵, Stephen Crulley⁵, Kirsty Devine⁵, Daniel Fabian⁵, Sharon King⁵, Paul McAlinden⁵, Sam McDonald⁵, Anne McDonnell^{2,5}, Ailsa Pickering^{2,5}, Evelyn Thomson⁵, Amanda Wood⁵, Diane Wallia⁵, Phil Woodsford⁵,

Sample processing: Frances Baxter⁵, Ashley Bell⁵, Mathew Rhodes⁵

PICU recruitment

Rachel Agbeko⁸

Christine Mackerness⁸

Students MOFICHE

Bryan Baas², Lieke Kloosterhuis², Wilma Oosthoek²

Students/medical staff PERFORM

Tasnim Arif⁶, Joshua Bennet², Calvin Collings², Ilona van der Giessen², Alex Martin², Aqeela Rashid⁶, Emily Rowlands², Gabriella de Vries², Fabian van der Velden²

Engagement work/ethics/cost effectiveness

Lucille Valentine⁴, Mike Martin⁹, Ravi Mistry², Lucille Valentine⁴

Author Affiliations:

¹ Translational and Clinical Research Institute, Newcastle University, Newcastle upon Tyne UK

²Great North Children's Hospital, Paediatric Immunology, Infectious Diseases & Allergy, Newcastle upon Tyne Hospitals NHS Foundation Trust, Newcastle upon Tyne, United Kingdom.

³NIHR Newcastle Biomedical Research Centre based at Newcastle upon Tyne Hospitals NHS Trust and Newcastle University, Westgate Rd, Newcastle upon Tyne NE4 5PL, United Kingdom

⁴Newcastle University Business School, Centre for Knowledge, Innovation, Technology and Enterprise (KITE), Newcastle upon Tyne, United Kingdom

⁵Great North Children's Hospital, Research Unit, Newcastle upon Tyne Hospitals NHS Foundation Trust, Newcastle upon Tyne, United Kingdom.

⁶Great North Children's Hospital, Paediatric Oncology, Newcastle upon Tyne Hospitals NHS Foundation Trust, Newcastle upon Tyne, United Kingdom.

⁷Population Health Sciences Institute, Newcastle University, Newcastle upon Tyne, UK

⁸Great North Children's Hospital, Paediatric Intensive Care Unit, Newcastle upon Tyne Hospitals NHS Foundation Trust, Newcastle upon Tyne, United Kingdom.

⁹Northumbria University, Newcastle upon Tyne, United Kingdom.

LMU Munich Partner (Germany)

Principal Investigator:

Ulrich von Both^{1,2} MD, FRCPCH (all activities)

Research group:

Laura Kolberg¹ MSc (all activities)

Manuela Zwerenz¹ MSc, Judith Buschbeck¹ PhD

Clinical recruitment partners (in alphabetical order):

Christoph Bidlingmaier³, Vera Binder⁴, Katharina Danhauser⁵, Nikolaus Haas¹⁰, Matthias Griese⁶, Tobias Feuchtinger⁴, Julia Keil⁹, Matthias Kappler⁶, Eberhard Lurz⁷, Georg Muench⁸, Karl Reiter⁹, Carola Schoen⁹

Author Affiliations:

¹Div. Paediatric Infectious Diseases, Hauner Children's Hospital, University Hospital, Ludwig Maximilians University (LMU), Munich, Germany

²German Center for Infection Research (DZIF), Partner Site Munich, Munich, Germany

³Div. of General Paediatrics, ⁴Div. Paediatric Haematology & Oncology, ⁵Div. of Paediatric Rheumatology, ⁶Div. of Paediatric Pulmonology, ⁷Div. of Paediatric Gastroenterology, ⁸Neonatal Intensive Care Unit, ⁹Paediatric Intensive Care Unit Hauner Children's Hospital, University Hospital, Ludwig Maximilians University (LMU), Munich, Germany, ¹⁰Department Pediatric Cardiology and Pediatric Intensive Care, University Hospital, Ludwig Maximilians University (LMU), Munich, Germany

bioMérieux, France

Principal Investigator:

François Mallet^{1,2,3}

Research Group:

Karen Brengel-Pesce^{1,2,3}

Alexandre Pachot¹

Marine Mommert^{1,2}

¹*Open Innovation & Partnerships (OIP), bioMérieux S.A., Marcy l'Etoile, France*

²*Joint research unit Hospice Civils de Lyon - bioMérieux, Centre Hospitalier Lyon Sud, 165 Chemin du Grand Revoyet, 69310 Pierre-Bénite, France*

³*EA 7426 Pathophysiology of Injury-induced Immunosuppression, University of Lyon1-Hospices Civils de Lyon-bioMérieux, Hôpital Edouard Herriot, 5 Place d'Arsonval, 69437 Lyon Cedex 3, France*

Department of Infectious Diseases, University Medical Centre Ljubljana, Slovenia

Principal Investigator:

Marko Pokorn^{1,2,3} MD, PhD

Research Group:

Mojca Kolnik¹ MD, Katarina Vincek¹ MD, Tina Plankar Srovin¹ MD, PhD, Natalija Bahovec¹ MD, Petra Prunk¹ MD, Veronika Osterman¹ MD, Tanja Avramoska¹ MD

Affiliations:

¹Department of Infectious Diseases, University Medical Centre Ljubljana, Japljeva 2, SI-1525 Ljubljana, Slovenia

²University Children's Hospital, University Medical Centre Ljubljana, Ljubljana, Slovenia

³Department of Infectious Diseases and Epidemiology, Faculty of Medicine, University of Ljubljana, Slovenia

Amsterdam, Academic Medical Hospital & Sanquin Research Institute (NL)Principal Investigator:Taco Kuijpers^{1,2}Co-investigatorsIlse Jongerius²Recruitment team (EUCLIDS, PERFORM):J.M. van den Berg¹, D. Schonenberg¹, A.M. Barendregt¹, D. Pajkrt¹, M. van der Kuip^{1,3}, A.M. van Furth^{1,3}Students PERFORMEvelien Sprenkeler², Judith Zandstra²,Technical support PERFORMG. van Mierlo², J. Geissler²Author Affiliations:

¹ Amsterdam University Medical Center (Amsterdam UMC), location Academic Medical Center (AMC), Dept of Pediatric Immunology, Rheumatology and Infectious Diseases, University of Amsterdam, Amsterdam, the Netherlands

² Sanquin Research Institute, & Landsteiner Laboratory at the AMC, University of Amsterdam, Amsterdam, the Netherlands.

³ Amsterdam University Medical Center (Amsterdam UMC), location Vrije Universiteit Medical Center (VUMC), Dept of Pediatric Infectious Diseases and Immunology, Free University (VU), Amsterdam, the Netherlands (former affiliation)