

## **Supplementary Materials**

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## Supplementary File 1: Stage One Meeting Questions

### Question 1

- ▶ Write down anything that comes to mind when thinking about the particular difficulties in managing and controlling RSV in your country
  - Remember to include things that you think may be considered as personal, unusual, trivial or unique to your circumstances

### Question 2

- ▶ Write down anything that comes to mind when thinking about the priorities in managing and controlling RSV in your country
  - Remember to include things that you think may be considered as personal, unusual, trivial or unique to your circumstances

### Question 3

- ▶ Write down anything that comes to mind when thinking about the most promising ideas for managing and controlling RSV in your country
  - Remember to include things that you think may be considered as personal, unusual, trivial or unique to your circumstances

### Question 4

- ▶ Write down anything that comes to mind when thinking about the opportunities to improve the management and control of RSV in your country
  - Remember to include things that you think may be considered as personal, unusual, trivial or unique to your circumstances

### Question 5

- ▶ Write down anything that comes to mind when thinking about the realistic expectations for future management and control of RSV in your country
  - Remember to include things that you think may be considered as personal, unusual, trivial or unique to your circumstances



Preventing Respiratory syncytial viruses in underdeveloped countries

# **Understanding the Burden and Management of RSV in LMIC Countries**

**Decision Research Questionnaire**

## Background Information

### Introduction

We have an ambitious aim that we are very passionate about which is to create a global effort and program to abolish the terrible burden of respiratory syncytial virus (RSV) disease in babies and infants in low- and lower-middle income countries (LMICs). We take inspiration from what has been done with ending polio through the Rotary campaign and want to achieve a similar world-wide goal with RSV. We feel that this is the perfect time to start such a campaign with several vaccines, antibodies, and treatments for RSV on the near horizon.

To accomplish this, we have formed the PROUD (**P**reventing **R**espirat**O**ry syncytial vir**U**s in un**D**erdeveloped countries) Task Force – a powerful opinion group of RSV experts from around the world.

We are taking a stepwise approach towards the achievement of our objectives. The purpose of this questionnaire is to better understand and quantify the impact of RSV and future expectations in RSV management in LMICs. The results of this research will be published in a peer-reviewed journal and we would welcome you to be an author on the paper.

*Our goal is for maximum impact to guide and try to convince Health Providers, Associations with global influence, well-reputed Institutions and RSV networks of the importance of contemplating this problem globally and that the current reality shows us where the true medical and economic burden is – in LMICs!*

### Thank you for your support

Xavier Carbonell-Estrany (Spain) | Bosco Paes (Canada) | Louis Bont (Netherlands) | Eric Simoes (USA)

Angela Gentile (Argentina) | Nusrat Homaira (Bangladesh) | Marcelo Scotta (Brazil) | Renato Stein (Brazil) | Jarju Sheikh (Gambia) | Shobha Broor (India) | Najwa Khuri-Bulos (Jordan) | James Nokes (Kenya) | Patrick Munywoki (Kenya) | Quique Bassat (Mozambique) | Arun Sharma (Nepal) | Sudha Basnet (Nepal) | John Fullarton (New Zealand) | Maria Garba (Nigeria) | Socorro Lupisan (Philippines) | Joanne De Jesus-Cornejo (Philippines) | Marta Nunes (South Africa) | Maduja Divaratne (Sri Lanka) | Barry Rodgers-Gray (UK)

<b>1*</b>	Name: _____ Institution: _____ E-mail _____
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## Background Information

<b>2</b>	Country: <sup>†</sup> _____
<b>3</b>	What is your qualification/position? <input type="checkbox"/> Doctor <input type="checkbox"/> Nurse <input type="checkbox"/> Other      If Other, please describe _____
<b>4</b>	How many years of experience do you have in the field of RSV? <input type="checkbox"/> <1 year <input type="checkbox"/> 1-5 years <input type="checkbox"/> 6-10 years <input type="checkbox"/> >10 years <input type="checkbox"/> none
<b>5</b>	How highly would you rate the degree of knowledge by general practitioners, paediatricians and institutions of the RSV burden in your country? <input type="checkbox"/> Low <input type="checkbox"/> Moderate <input type="checkbox"/> High
<b>6</b>	Is RSV considered a priority in your country by government and public health bodies? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know
<b>7</b>	Is RSV diagnostic testing available in your country? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know  If Yes, what tests are used: <input type="checkbox"/> Direct immunofluorescence assays <input type="checkbox"/> Automated rapid antigen detection tests <input type="checkbox"/> Reverse-transcription polymerase chain reaction If others, please describe _____
<b>8</b>	Is palivizumab (Synagis) used in your country to prevent RSV? <input type="checkbox"/> Yes <input type="checkbox"/> No (available but use not supported/publicly funded) <input type="checkbox"/> Not available <input type="checkbox"/> Don't know  If Yes, for which groups: <input type="checkbox"/> Bronchopulmonary dysplasia (BPD)/chronic lung disease (CLD) <input type="checkbox"/> Congenital heart disease (CHD) <input type="checkbox"/> Other serious medical disorders <input type="checkbox"/> All premature infants ≤35 weeks' gestational age (wGA) or only <input type="checkbox"/> ≤29 wGA <input type="checkbox"/> 30-32 wGA <input type="checkbox"/> 33-35 wGA
<b>9</b>	Who are the key stakeholder/decision makers in your country regarding public health policy and prevention of RSV? _____

*\*Please complete to be added as an author on the paper based on the research; <sup>†</sup>This should be the country you are representing with your answers, not the country you are currently based, if you have relocated*

### About Decision Research

## Background Information

Decision Research is a research tool with a proven methodology that can provide powerful insight into decision making and understanding the impact of a disease and its treatment. This questionnaire was developed following three ‘Cataloguing’ sessions with the PROUD Taskforce wherein a list of all possible items related to the current and future prevention and treatment of RSV infection in children was created (the ‘Catalogue’). At each Cataloguing session, members of the Task Force were asked a series of overlapping questions about RSV in children, the responses to which were then discussed and expanded upon. The outputs from the three sessions were then amalgamated and condensed to form the final Catalogue. The questionnaire is designed to measure, in an objective manner, the relevance in your country of each of the items in the Catalogue. This will provide us with a rich dataset for analysis, enabling an in-depth understanding of the burden and management of RSV in LMICs.

*For more information on the Decision Research process, please see: Carbonell-Estrany X et al. Acta Paediatr 2018;107:854-860.*

### Instructions

There are two sections or parts to the remainder of the questionnaire:

- Section 1 – the current situation regarding RSV management in your country
- Section 2 – realistic future expectations for RSV management in your country

For each section, please answer each question by making a vertical mark on the line (visual analogue scale) next to the question to indicate how relevant you think that particular issue is in your country (or country you are representing if relocated).

For example:

	<u>Relevance</u>	
Recognising the long-term economic sequelae of RSV	very low _____ I _____ very high	<input type="checkbox"/> Not relevant
The need for longer term follow-up for RSV patients	very low _____ I _____ very high	<input type="checkbox"/> Not relevant

Please note that:

- In each section, the Catalogue items are repeated – this will enable multivariate analysis on the relative importance of and interrelationships between the items within each context (current situation, realistic expectations, and ideal hopes)
- The Catalogue items are randomised – this reduces any (unintentional) rationalisation of answers and reduces visual analogue scale fatigue
- The visual analogue scale is deliberately not numbered – this avoids the tendency for number preference
- There is the option of marking an item as ‘Not relevant’ if not applicable to the situation in your country
- This questionnaire should take 30-45 minutes to complete

*Please do not spend too much time thinking about each item – your immediate reaction is what we are after!*

## SECTION 1: Current situation regarding RSV management

**When you think about:**

**the current situation regarding RSV management in your country**

**How relevant are the following items to you?**

	<u>Relevance</u>	
Education on RSV needs to be improved amongst paediatricians	very low _____ very high	<input type="checkbox"/> Not relevant
The need for regular educational events, such as webinars, to update the important topic of paediatric and maternal vaccines for RSV	very low _____ very high	<input type="checkbox"/> Not relevant
Poor appreciation of the efficacy of prophylactic treatments	very low _____ very high	<input type="checkbox"/> Not relevant
The need for internationally approved, easy to follow, point of care management guidelines for RSV	very low _____ very high	<input type="checkbox"/> Not relevant
The lack of approved strategies for the treatment of high-risk infants	very low _____ very high	<input type="checkbox"/> Not relevant
Lack of ICU (intensive care) beds	very low _____ very high	<input type="checkbox"/> Not relevant
Recognising the long-term economic sequelae of RSV	very low _____ very high	<input type="checkbox"/> Not relevant
Education by health professionals for mothers is a priority	very low _____ very high	<input type="checkbox"/> Not relevant
RSV is a viral infection without a specific medication/treatment	very low _____ very high	
Education on RSV needs to be improved amongst urban family physicians and rural doctors	very low _____ very high	<input type="checkbox"/> Not relevant
Understanding that RSV can be a problem in children with particular co-morbidities	very low _____ very high	<input type="checkbox"/> Not relevant
The need to make oximeters available to all public hospitals and health facilities	very low _____ very high	<input type="checkbox"/> Not relevant
WHO guidelines tend to encourage the overuse of antibiotics based on an approach to the clinical diagnosis of all-cause pneumonia	very low _____ very high	<input type="checkbox"/> Not relevant

## SECTION 1: Current situation regarding RSV management

The need to cohort RSV patients in hospital wards	very low_____very high	<input type="checkbox"/> Not relevant
The importance of breast-feeding as a defence against RSV	very low_____very high	<input type="checkbox"/> Not relevant
The problems associated with RSV are particularly associated with lower socio-economic groups	very low_____very high	<input type="checkbox"/> Not relevant
Inability to rule out bacterial co-infection with RSV which requires antibiotics	very low_____very high	<input type="checkbox"/> Not relevant
Need for recognition by stakeholders that respiratory tract infections in young children are mostly viral	very low_____very high	<input type="checkbox"/> Not relevant
The lack of knowledge of evidence for the use of high flow nasal canulae in the management of RSV	very low_____very high	<input type="checkbox"/> Not relevant
Worry about declining breast-feeding rates	very low_____very high	<input type="checkbox"/> Not relevant
The importance of timing for any new maternal vaccine for RSV during pregnancy	very low_____very high	<input type="checkbox"/> Not relevant
Wards are crowded during the peak RSV season	very low_____very high	<input type="checkbox"/> Not relevant
Difficulty of achieving a common consensus on optimal RSV management between hospital specialists (lack of guidelines)	very low_____very high	<input type="checkbox"/> Not relevant
The potential high cost of new palivizumab biosimilar prophylaxis products	very low_____very high	<input type="checkbox"/> Not relevant
The importance of a vaccine that is affordable and available to all	very low_____very high	<input type="checkbox"/> Not relevant
The need for a national surveillance programme for RSV	very low_____very high	<input type="checkbox"/> Not relevant
The availability of an intra-nasal vaccine for RSV	very low_____very high	<input type="checkbox"/> Not relevant
Build on the lessons of COVID to teach parents hygiene measures for avoiding RSV infection	very low_____very high	<input type="checkbox"/> Not relevant



## SECTION 1: Current situation regarding RSV management

The fact that not enough is known about the aetiology and pathogenesis of RSV	very low_____very high	<input type="checkbox"/> Not relevant
The need for morbidity and mortality data as well as demographics of at-risk groups	very low_____very high	<input type="checkbox"/> Not relevant
The need to understand more about co-infections with RSV since mortality may be increased	very low_____very high	<input type="checkbox"/> Not relevant
The problem of misdiagnosis of RSV as bacterial infection	very low_____very high	<input type="checkbox"/> Not relevant
The high cost of prophylactic monoclonal antibody treatment, including even biosimilars	very low_____very high	<input type="checkbox"/> Not relevant
The need to keep policy makers on board with evolving RSV management/prevention strategies	very low_____very high	<input type="checkbox"/> Not relevant
Logistic problems establishing special prevention clinics	very low_____very high	<input type="checkbox"/> Not relevant
Access to laboratory RSV diagnostic testing is limited especially in rural areas	very low_____very high	<input type="checkbox"/> Not relevant
Parents may not be able to gain access to hospital care because of employment or transport issues	very low_____very high	<input type="checkbox"/> Not relevant
The need for strategies to boost the infant's immune system such as diet, healthy lifestyle	very low_____very high	<input type="checkbox"/> Not relevant
The need for training on RSV diagnosis and enabling distinction from bacterial infection	very low_____very high	<input type="checkbox"/> Not relevant
The difficulty associated with the logistics of administering prophylaxis to all children	very low_____very high	<input type="checkbox"/> Not relevant
Involving local medicine vendors into the education rollout	very low_____very high	<input type="checkbox"/> Not relevant
The need for RSV prevention in all children not just those at high risk	very low_____very high	<input type="checkbox"/> Not relevant
Average age for RSV infection is in the very young	very low_____very high	<input type="checkbox"/> Not relevant

## SECTION 1: Current situation regarding RSV management

Recognising the long-term clinical sequelae of RSV	very low_____very high	<input type="checkbox"/> Not relevant
The need for a cheaper widely applicable prophylactic treatment	very low_____very high	<input type="checkbox"/> Not relevant
Possibility of leveraging on the COVID experience to persuade policy makers about strategies for RSV prevention	very low_____very high	<input type="checkbox"/> Not relevant
Integrate information/education on RSV amongst healthcare providers and general population for countrywide acceptance	very low_____very high	<input type="checkbox"/> Not relevant
The peak RSV season varies across the country	very low_____very high	<input type="checkbox"/> Not relevant
The paucity of local data on the prevalence and burden of RSV in the community	very low_____very high	<input type="checkbox"/> Not relevant
Health burden of RSV not fully recognised by the public health bodies	very low_____very high	<input type="checkbox"/> Not relevant
Lack of understanding of the risk factors and preventative measures for RSV	very low_____very high	<input type="checkbox"/> Not relevant
The need to recognise house overcrowding as a major risk for RSV	very low_____very high	<input type="checkbox"/> Not relevant
The need to recognise pollution as a major risk for RSV	very low_____very high	<input type="checkbox"/> Not relevant
The need to emphasise the importance of local supportive care for RSV	very low_____very high	<input type="checkbox"/> Not relevant
The need for longer term follow-up for RSV patients	very low_____very high	<input type="checkbox"/> Not relevant
The need to improve the national supply chain for oxygen support especially in peripheral health centres	very low_____very high	<input type="checkbox"/> Not relevant
The need to recognise smoking as a major risk factor for RSV	very low_____very high	<input type="checkbox"/> Not relevant
The issue of high patient to HCP (healthcare professional) ratio	very low_____very high	<input type="checkbox"/> Not relevant
The impact/burden on parents of an infant hospitalised with RSV is overlooked	very low_____very high	<input type="checkbox"/> Not relevant
Dissemination of information on the local burden of RSV	very low_____very high	<input type="checkbox"/> Not relevant

## SECTION 1: Current situation regarding RSV management

The fact that vaccines for other diseases may take priority over vaccination for RSV	very low _____ very high	<input type="checkbox"/> Not relevant
The need to establish an RSV national immunisation programme once a vaccine is available	very low _____ very high	<input type="checkbox"/> Not relevant
Information on RSV needs to be widely available for the general population	very low _____ very high	<input type="checkbox"/> Not relevant
The need to ensure that paediatricians understand the importance of and can properly manage oxygen therapy	very low _____ very high	<input type="checkbox"/> Not relevant
The need for a single dose long-acting prophylactic monoclonal treatment for RSV	very low _____ very high	<input type="checkbox"/> Not relevant
The need for RSV point of care testing to be routine practice	very low _____ very high	<input type="checkbox"/> Not relevant
The need for public and especially parental education on RSV and its symptoms	very low _____ very high	<input type="checkbox"/> Not relevant
The worry that new strategies for RSV prophylaxis and treatment will be unaffordable	very low _____ very high	<input type="checkbox"/> Not relevant
RSV not a priority for the public health bodies	very low _____ very high	<input type="checkbox"/> Not relevant
The importance of the duration of vaccine protection	very low _____ very high	<input type="checkbox"/> Not relevant
The lack of a health insurance system or national health service prevents local progress in managing RSV	very low _____ very high	<input type="checkbox"/> Not relevant
The need for a good prognosis/risk stratification tool to target RSV interventions	very low _____ very high	<input type="checkbox"/> Not relevant
The need to target seasonal RSV infections	very low _____ very high	<input type="checkbox"/> Not relevant
The importance of international vaccine programmes such as GAVI	very low _____ very high	<input type="checkbox"/> Not relevant

## SECTION 1: Current situation regarding RSV management

The high cost of vaccines	very low_____very high	<input type="checkbox"/> Not relevant
Children may be given bronchodilators even if RSV is recognised as a viral infection	very low_____very high	<input type="checkbox"/> Not relevant
Lack of awareness about the morbidity and mortality associated with RSV	very low_____very high	<input type="checkbox"/> Not relevant
Need for earlier referrals from primary to tertiary care centres	very low_____very high	<input type="checkbox"/> Not relevant
The need for an infant vaccine for RSV	very low_____very high	<input type="checkbox"/> Not relevant
Lack of general understanding of the healthcare costs during RSV hospitalisation	very low_____very high	<input type="checkbox"/> Not relevant
Poor appreciation of the safety of prophylactic treatments	very low_____very high	<input type="checkbox"/> Not relevant
Need for leading experts to disseminate information on RSV	very low_____very high	<input type="checkbox"/> Not relevant
Problem with translation of RSV education materials into local languages	very low_____very high	<input type="checkbox"/> Not relevant
WHO guidelines encourage use of antibiotics for respiratory infections based on an approach to the clinical diagnosis of all-cause pneumonia	very low_____very high	<input type="checkbox"/> Not relevant
Training and education of relevant stakeholders is required to motivate and set RSV as a priority	very low_____very high	<input type="checkbox"/> Not relevant
Poor appreciation of the potential efficacy of combined interventions such as maternal vaccine plus monoclonal prophylaxis	very low_____very high	<input type="checkbox"/> Not relevant
Unequal access to resources for RSV countrywide especially between urban and rural settings	very low_____very high	<input type="checkbox"/> Not relevant
Worries about the acceptance of a pregnancy RSV vaccine by conservative obstetric specialists	very low_____very high	<input type="checkbox"/> Not relevant
Involve professional associations in creating awareness of and providing advocacy for RSV	very low_____very high	<input type="checkbox"/> Not relevant

## SECTION 1: Current situation regarding RSV management

- |   |                        |                                       |
|---|------------------------|---------------------------------------|
| Worries about the acceptability of vaccine for pregnant mothers especially in some communities    | very low_____very high | <input type="checkbox"/> Not relevant |
| The availability of a maternal vaccine for RSV  | very low_____very high | <input type="checkbox"/> Not relevant |
| Community acquired RSV infections not getting referred to hospital in a timely manner             | very low_____very high | <input type="checkbox"/> Not relevant |
| The need for an antiviral or other treatment which can be used for the management of RSV          | very low_____very high | <input type="checkbox"/> Not relevant |
| The lack of emphasis by healthcare information services on the prevention of RSV                  | very low_____very high | <input type="checkbox"/> Not relevant |
| Tailored approach for RSV is required for different populations                                   | very low_____very high | <input type="checkbox"/> Not relevant |
| The need for expectant mothers to be taught alarm signs for RSV in antenatal clinics              | very low_____very high | <input type="checkbox"/> Not relevant |
| The need for research to generate more local epidemiological data on RSV                          | very low_____very high | <input type="checkbox"/> Not relevant |
| The need for a simple, rapid, low-cost point of care diagnostic technique                         | very low_____very high | <input type="checkbox"/> Not relevant |
| The need for education to raise awareness linking bronchiolitis to RSV infection                  | very low_____very high | <input type="checkbox"/> Not relevant |
| During the RSV season, children hospitalised with RSV prevent hospitalisation of non-RSV patients | very low_____very high | <input type="checkbox"/> Not relevant |

**End of SECTION 1**

## SECTION 2: Realistic future expectations for RSV management

### When you think about:

### realistic future expectations for RSV management in your country

### How relevant are the following items to you?

	<u>Relevance</u>	
Education on RSV needs to be improved amongst paediatricians	very low _____ very high	<input type="checkbox"/> Not relevant
The need for regular educational events, such as webinars, to update the important topic of paediatric and maternal vaccines for RSV	very low _____ very high	<input type="checkbox"/> Not relevant
Poor appreciation of the efficacy of prophylactic treatments	very low _____ very high	<input type="checkbox"/> Not relevant
The need for internationally approved, easy to follow, point of care management guidelines for RSV	very low _____ very high	<input type="checkbox"/> Not relevant
The lack of approved strategies for the treatment of high-risk infants	very low _____ very high	<input type="checkbox"/> Not relevant
Lack of ICU (intensive care) beds	very low _____ very high	<input type="checkbox"/> Not relevant
Recognising the long-term economic sequelae of RSV	very low _____ very high	<input type="checkbox"/> Not relevant
Education by health professionals for mothers is a priority	very low _____ very high	<input type="checkbox"/> Not relevant
RSV is a viral infection without a specific medication/treatment	very low _____ very high	<input type="checkbox"/> Not relevant
Education on RSV needs to be improved amongst urban family physicians and rural doctors	very low _____ very high	<input type="checkbox"/> Not relevant
Understanding that RSV can be a problem in children with particular co-morbidities	very low _____ very high	<input type="checkbox"/> Not relevant
The need to make oximeters available to all public hospitals and health facilities	very low _____ very high	<input type="checkbox"/> Not relevant
WHO guidelines tend to encourage the overuse of antibiotics based on an approach to the clinical diagnosis of all-cause pneumonia	very low _____ very high	<input type="checkbox"/> Not relevant

## SECTION 2: Realistic future expectations for RSV management

The need to cohort RSV patients in hospital wards	very low_____very high	<input type="checkbox"/> Not relevant
The importance of breast-feeding as a defence against RSV	very low_____very high	<input type="checkbox"/> Not relevant
The problems associated with RSV are particularly associated with lower socio-economic groups	very low_____very high	<input type="checkbox"/> Not relevant
Inability to rule out bacterial co-infection with RSV which requires antibiotics	very low_____very high	<input type="checkbox"/> Not relevant
Need for recognition by stakeholders that respiratory tract infections in young children are mostly viral	very low_____very high	<input type="checkbox"/> Not relevant
The lack of knowledge of evidence for the use of high flow nasal canulae in the management of RSV	very low_____very high	<input type="checkbox"/> Not relevant
Worry about declining breast-feeding rates	very low_____very high	<input type="checkbox"/> Not relevant
The importance of timing for any new maternal vaccine for RSV during pregnancy	very low_____very high	<input type="checkbox"/> Not relevant
Wards are crowded during the peak RSV season	very low_____very high	<input type="checkbox"/> Not relevant
Difficulty of achieving a common consensus on optimal RSV management between hospital specialists (lack of guidelines)	very low_____very high	<input type="checkbox"/> Not relevant
The potential high cost of new palivizumab biosimilar prophylaxis products	very low_____very high	<input type="checkbox"/> Not relevant
The importance of a vaccine that is affordable and available to all	very low_____very high	<input type="checkbox"/> Not relevant
The need for a national surveillance programme for RSV	very low_____very high	<input type="checkbox"/> Not relevant
The availability of an intra-nasal vaccine for RSV	very low_____very high	<input type="checkbox"/> Not relevant
Build on the lessons of COVID to teach parents hygiene measures for avoiding RSV infection	very low_____very high	<input type="checkbox"/> Not relevant

## SECTION 2: Realistic future expectations for RSV management

The fact that not enough is known about the aetiology and pathogenesis of RSV	very low _____ very high	<input type="checkbox"/> Not relevant
The need for morbidity and mortality data as well as demographics of at-risk groups	very low _____ very high	<input type="checkbox"/> Not relevant
The need to understand more about co-infections with RSV since mortality may be increased	very low _____ very high	<input type="checkbox"/> Not relevant
The problem of misdiagnosis of RSV as bacterial infection	very low _____ very high	<input type="checkbox"/> Not relevant
The high cost of prophylactic monoclonal antibody treatment, including even biosimilars	very low _____ very high	<input type="checkbox"/> Not relevant
The need to keep policy makers on board with evolving RSV management/prevention strategies	very low _____ very high	<input type="checkbox"/> Not relevant
Logistic problems establishing special prevention clinics	very low _____ very high	<input type="checkbox"/> Not relevant
Access to laboratory RSV diagnostic testing is limited especially in rural areas	very low _____ very high	<input type="checkbox"/> Not relevant
Parents may not be able to gain access to hospital care because of employment or transport issues	very low _____ very high	<input type="checkbox"/> Not relevant
The need for strategies to boost the infant's immune system such as diet, healthy lifestyle	very low _____ very high	<input type="checkbox"/> Not relevant
The need for training on RSV diagnosis and enabling distinction from bacterial infection	very low _____ very high	<input type="checkbox"/> Not relevant
The difficulty associated with the logistics of administering prophylaxis to all children	very low _____ very high	<input type="checkbox"/> Not relevant
Involving local medicine vendors into the education rollout	very low _____ very high	<input type="checkbox"/> Not relevant
The need for RSV prevention in all children not just those at high risk	very low _____ very high	<input type="checkbox"/> Not relevant



## SECTION 2: Realistic future expectations for RSV management

Average age for RSV infection is in the very young	very low_____very high	<input type="checkbox"/> Not relevant
Recognising the long-term clinical sequelae of RSV	very low_____very high	<input type="checkbox"/> Not relevant
The need for a cheaper widely applicable prophylactic treatment	very low_____very high	<input type="checkbox"/> Not relevant
Possibility of leveraging on the COVID experience to persuade policy makers about strategies for RSV prevention	very low_____very high	<input type="checkbox"/> Not relevant
Integrate information/education on RSV amongst healthcare providers and general population for countrywide acceptance	very low_____very high	<input type="checkbox"/> Not relevant
The peak RSV season varies across the country	very low_____very high	<input type="checkbox"/> Not relevant
The paucity of local data on the prevalence and burden of RSV in the community	very low_____very high	<input type="checkbox"/> Not relevant
Health burden of RSV not fully recognised by the public health bodies	very low_____very high	<input type="checkbox"/> Not relevant
Lack of understanding of the risk factors and preventative measures for RSV	very low_____very high	<input type="checkbox"/> Not relevant
The need to recognise house overcrowding as a major risk for RSV	very low_____very high	<input type="checkbox"/> Not relevant
The need to recognise pollution as a major risk for RSV	very low_____very high	<input type="checkbox"/> Not relevant
The need to emphasise the importance of local supportive care for RSV	very low_____very high	<input type="checkbox"/> Not relevant
The need for longer term follow-up for RSV patients	very low_____very high	<input type="checkbox"/> Not relevant
The need to improve the national supply chain for oxygen support especially in peripheral health centres	very low_____very high	<input type="checkbox"/> Not relevant
The need to recognise smoking as a major risk factor for RSV	very low_____very high	<input type="checkbox"/> Not relevant
The issue of high patient to HCP (healthcare professional) ratio	very low_____very high	<input type="checkbox"/> Not relevant
The impact/burden on parents of an infant hospitalised with RSV is overlooked	very low_____very high	<input type="checkbox"/> Not relevant

## SECTION 2: Realistic future expectations for RSV management

Dissemination of information on the local burden of RSV	very low_____very high	<input type="checkbox"/> Not relevant
The fact that vaccines for other diseases may take priority over vaccination for RSV	very low_____very high	<input type="checkbox"/> Not relevant
The need to establish an RSV national immunisation programme once a vaccine is available	very low_____very high	<input type="checkbox"/> Not relevant
Information on RSV needs to be widely available for the general population	very low_____very high	<input type="checkbox"/> Not relevant
The need to ensure that paediatricians understand the importance of and can properly manage oxygen therapy	very low_____very high	<input type="checkbox"/> Not relevant
The need for a single dose long-acting prophylactic monoclonal treatment for RSV	very low_____very high	<input type="checkbox"/> Not relevant
The need for RSV point of care testing to be routine practice	very low_____very high	<input type="checkbox"/> Not relevant
The need for public and especially parental education on RSV and its symptoms	very low_____very high	<input type="checkbox"/> Not relevant
The worry that new strategies for RSV prophylaxis and treatment will be unaffordable	very low_____very high	<input type="checkbox"/> Not relevant
RSV not a priority for the public health bodies	very low_____very high	<input type="checkbox"/> Not relevant
The importance of the duration of vaccine protection	very low_____very high	<input type="checkbox"/> Not relevant
The lack of a health insurance system or national health service prevents local progress in managing RSV	very low_____very high	<input type="checkbox"/> Not relevant
The need for a good prognosis/risk stratification tool to target RSV interventions	very low_____very high	<input type="checkbox"/> Not relevant
The need to target seasonal RSV infections	very low_____very high	<input type="checkbox"/> Not relevant
The importance of international vaccine programmes such as GAVI	very low_____very high	<input type="checkbox"/> Not relevant

## SECTION 2: Realistic future expectations for RSV management

The high cost of vaccines	very low _____ very high	<input type="checkbox"/> Not relevant
Children may be given bronchodilators even if RSV is recognised as a viral infection	very low _____ very high	<input type="checkbox"/> Not relevant
Lack of awareness about the morbidity and mortality associated with RSV	very low _____ very high	<input type="checkbox"/> Not relevant
Need for earlier referrals from primary to tertiary care centres	very low _____ very high	<input type="checkbox"/> Not relevant
The need for an infant vaccine for RSV	very low _____ very high	<input type="checkbox"/> Not relevant
Lack of general understanding of the healthcare costs during RSV hospitalisation	very low _____ very high	<input type="checkbox"/> Not relevant
Poor appreciation of the safety of prophylactic treatments	very low _____ very high	<input type="checkbox"/> Not relevant
Need for leading experts to disseminate information on RSV	very low _____ very high	<input type="checkbox"/> Not relevant
Problem with translation of RSV education materials into local languages	very low _____ very high	<input type="checkbox"/> Not relevant
WHO guidelines encourage use of antibiotics for respiratory infections based on an approach to the clinical diagnosis of all-cause pneumonia	very low _____ very high	<input type="checkbox"/> Not relevant
Training and education of relevant stakeholders is required to motivate and set RSV as a priority	very low _____ very high	<input type="checkbox"/> Not relevant
Poor appreciation of the potential efficacy of combined interventions such as maternal vaccine plus monoclonal prophylaxis	very low _____ very high	<input type="checkbox"/> Not relevant
Unequal access to resources for RSV countrywide especially between urban and rural settings	very low _____ very high	<input type="checkbox"/> Not relevant
Worries about the acceptance of a pregnancy RSV vaccine by conservative obstetric specialists	very low _____ very high	<input type="checkbox"/> Not relevant

## SECTION 2: Realistic future expectations for RSV management

- |   |                        |                                       |
|---|------------------------|---------------------------------------|
| Involve professional associations in creating awareness of and providing advocacy for RSV         | very low_____very high | <input type="checkbox"/> Not relevant |
| Worries about the acceptability of vaccine for pregnant mothers especially in some communities    | very low_____very high | <input type="checkbox"/> Not relevant |
| The availability of a maternal vaccine for RSV  | very low_____very high | <input type="checkbox"/> Not relevant |
| Community acquired RSV infections not getting referred to hospital in a timely manner             | very low_____very high | <input type="checkbox"/> Not relevant |
| The need for an antiviral or other treatment which can be used for the management of RSV          | very low_____very high | <input type="checkbox"/> Not relevant |
| The lack of emphasis by healthcare information services on the prevention of RSV                  | very low_____very high | <input type="checkbox"/> Not relevant |
| Tailored approach for RSV is required for different populations                                   | very low_____very high | <input type="checkbox"/> Not relevant |
| The need for expectant mothers to be taught alarm signs for RSV in antenatal clinics              | very low_____very high | <input type="checkbox"/> Not relevant |
| The need for research to generate more local epidemiological data on RSV                          | very low_____very high | <input type="checkbox"/> Not relevant |
| The need for a simple, rapid, low-cost point of care diagnostic technique                         | very low_____very high | <input type="checkbox"/> Not relevant |
| The need for education to raise awareness linking bronchiolitis mainly to RSV infection           | very low_____very high | <input type="checkbox"/> Not relevant |
| During the RSV season, children hospitalised with RSV prevent hospitalisation of non-RSV patients | very low_____very high | <input type="checkbox"/> Not relevant |

**End of SECTION 2 and QUESTIONNAIRE**

**Supplementary File 3: WHO regions and countries represented by respondents in each economic group**

	<b>LD (n=18)</b>	<b>LM (n=31)</b>	<b>UM (n=21)</b>	<b>HIC (n=20)</b>
<b>Africa</b>				
- Gambia	1	..	..	..
- Kenya	..	13	..	..
- Nigeria	..	4	..	..
- South Africa	..	..	4	..
<b>Europe</b>				
- Italy	..	..	..	1
- Netherlands	..	..	..	1
- Norway	..	..	..	1
- Spain	..	..	..	2
- Sweden	..	..	..	1
<b>Eastern Mediterranean</b>				
- Jordan	..	1	..	..
- Lebanon	..	..	1	..
- Morocco	..	1	..	..
<b>The Americas</b>				
- Argentina	..	..	3	..
- Brazil	..	..	10	..
- Canada	..	..	..	9
- Chile	..	..	..	1
- Colombia	..	..	1	..
- Costa Rica	..	..	2	..
<b>South-East Asia</b>				
- Bangladesh	8	..	..	..
- India	..	4	..	..
- Nepal	9	..	..	..
- Sri Lanka	..	6	..	..
<b>Western Pacific</b>				
- Australia	..	..	..	1
- Philippines	..	2	..	..
- United States	..	..	..	3

HICs: high-income countries; LD: least developed/low-income countries; LM: lower-middle-income countries; UM: upper-middle-income countries

**Supplementary File 4: Top quintile of most important factors (n=20) related to the current and future management of RSV split by economic groupings\***

<b>Least Developed/Low Income</b>		<b>Lower Middle Income</b>		<b>Upper Middle Income</b>		<b>High Income</b>	
<b>Factor</b>	<b>Loading<sup>†</sup></b>	<b>Factor</b>	<b>Loading<sup>†</sup></b>	<b>Factor</b>	<b>Loading<sup>†</sup></b>	<b>Factor</b>	<b>Loading<sup>†</sup></b>
The need for a simple, rapid, low-cost point-of-care diagnostic technique	2.30	The need for a simple, rapid, low-cost point-of-care diagnostic technique	2.03	The importance of a vaccine that is affordable and available to all	2.18	The importance of a vaccine that is affordable and available to all	2.45
The need for a national surveillance programme for RSV	1.90	The need for research to generate more local epidemiological data on RSV	1.79	The need for an infant vaccine for RSV	2.07	The need for a cheaper widely applicable prophylactic treatment	2.43
The need for research to generate more local epidemiological data on RSV	1.71	Access to laboratory RSV diagnostic testing is limited especially in rural areas	1.48	The need for a cheaper widely applicable prophylactic treatment	1.86	The need for a single dose long-acting prophylactic monoclonal treatment for RSV	2.24
The importance of a vaccine that is affordable and available to all	1.55	Health burden of RSV not fully recognised by the public health bodies	1.43	The high cost of prophylactic monoclonal antibody treatment, including even biosimilars	1.64	The need for an infant vaccine for RSV	2.24
The need for internationally approved, easy-to-follow, point-of-care management guidelines for RSV	1.40	Information on RSV needs to be widely available for the general population	1.38	Build on the lessons of COVID to teach parents hygiene measures for avoiding RSV infection	1.46	The high cost of prophylactic monoclonal antibody treatment, including even biosimilars	2.12
The need to establish an RSV national immunisation programme once a vaccine is available	1.36	The need for morbidity and mortality data as well as demographics of at-risk groups	1.27	The need for an antiviral or other treatment which can be used for the	1.40	The potential high cost of new palivizumab biosimilar prophylaxis products	1.94

				management of RSV			
The need for RSV point-of-care testing to be routine practice	1.36	The need to make oximeters available to all public hospitals and health facilities	1.23	The need to make oximeters available to all public hospitals and health facilities	1.38	The need to establish an RSV national immunisation programme once a vaccine is available	1.47
The need for morbidity and mortality data as well as demographics of at-risk groups	1.34	The high cost of vaccines	1.23	The need to establish an RSV national immunisation programme once a vaccine is available	1.34	The need to keep policymakers on board with evolving RSV management/prevention strategies	1.31
The paucity of local data on the prevalence and burden of RSV in the community	1.30	The need for a national surveillance programme for RSV	1.15	The high cost of vaccines	1.34	The high cost of vaccines	1.30
The need for an infant vaccine for RSV	1.27	The paucity of local data on the prevalence and burden of RSV in the community	1.12	The worry that new strategies for RSV prophylaxis and treatment will be unaffordable	1.25	Build on the lessons of COVID to teach parents hygiene measures for avoiding RSV infection	1.12
The need for education to raise awareness linking bronchiolitis to RSV infection	1.22	The need to improve the national supply chain for oxygen support especially in peripheral health centres	1.10	The importance of breast-feeding as a defence against RSV	1.25	Possibility of leveraging on the COVID experience to persuade policymakers about strategies for RSV prevention	1.10
The need for training on RSV diagnosis and enabling distinction from bacterial infection	1.20	The need for an infant vaccine for RSV	1.03	The availability of a maternal vaccine for RSV	1.23	The worry that new strategies for RSV prophylaxis and treatment will be unaffordable	1.07

The need for regular educational events, such as webinars, to update the important topic of paediatric and maternal vaccines for RSV	1.11	The need for training on RSV diagnosis and enabling distinction from bacterial infection	1.02	Understanding that RSV can be a problem in children with particular co-morbidities	1.17	The need for RSV prevention in all children not just those at high risk	1.05
The importance of international vaccine programmes such as GAVI	1.05	Average age for RSV infection is in the very young	1.00	The need for a simple, rapid, low-cost point-of-care diagnostic technique	1.14	The availability of a maternal vaccine for RSV	0.96
Health burden of RSV not fully recognised by the public health bodies	1.04	The need to keep policymakers on board with evolving RSV management/prevention strategies	0.99	The need for research to generate more local epidemiological data on RSV	1.13	Poor appreciation of the potential efficacy of combined interventions such as maternal vaccine plus monoclonal prophylaxis	0.91
The need to improve the national supply chain for oxygen support especially in peripheral health centres	1.02	The need for a cheaper widely applicable prophylactic treatment	0.98	The potential high cost of new palivizumab biosimilar prophylaxis products	1.08	The need for a national surveillance programme for RSV	0.90
Need for recognition by stakeholders that respiratory tract infections in young children are mostly viral	0.99	The need to establish an RSV national immunisation programme once a vaccine is available	0.98	Access to laboratory RSV diagnostic testing is limited especially in rural areas	1.06	Understanding that RSV can be a problem in children with particular co-morbidities	0.87
The need to understand more about co-infections with RSV since mortality may be increased	0.98	The need for internationally approved, easy-to-follow, point-of-care management guidelines for RSV	0.97	Possibility of leveraging on the COVID experience to persuade policymakers	1.00	Recognising the long-term clinical sequelae of RSV	0.85



				about strategies for RSV prevention			
The need to keep policymakers on board with evolving RSV management/prevention strategies	0.96	The need to understand more about co-infections with RSV since mortality may be increased	0.96	The need for a single dose long-acting prophylactic monoclonal treatment for RSV	0.91	The importance of timing for any new maternal vaccine for RSV during pregnancy	0.84
The need to ensure that paediatricians understand the importance of and can properly manage oxygen therapy	0.94	Lack of awareness about the morbidity and mortality associated with RSV	0.91	Involve professional associations in creating awareness of and providing advocacy for RSV	0.87	The need for morbidity and mortality data as well as demographics of at-risk groups	0.80

COVID: coronavirus; RSV: respiratory syncytial virus. \*Principal component analysis that contained 86.0% of the data variance for Least Developed/Low Income countries, 91.5% for Lower Middle Income countries, 89.8% for Upper Middle Income countries, and 95.4% for High Income countries. †The loading is the relative weighting of each factor within the principal component.