Accessible version: https://www.cdc.gov/hicpac/reviews/prophylaxis-nicu/appendix.html

Appendix: Prophylaxis and Screening for Prevention of Respiratory Illness in Neonatal Intensive Care Unit Patients: A Systematic Review

A. Search Strategies and Results

A.1. Guideline Search Strategies (April 2011)

Table 1 Search of MEDLINE for Guidelines

#	Search History	Results
1	exp Respiratory Tract Infections/	244589
2	exp Virus Diseases/	599053
3	1 and 2	52335
4	exp Respiratory Syncytial Virus Infections/	3517
5	3 or 4	54539
6	limit 5 to (english language and humans and (guideline or practice guideline))	156
7	limit 6 to (systematic reviews)	130
8	limit 7 to (all infant (birth to 23 months))	61

Table 2 Search of Cochrane Library for Guidelines

#	Search History	Results
1	(virus diseases):ti,ab,kw and (respiratory tract infections):ti,ab,kw	153
2	(respiratory syncytial virus):ti,ab,kw	361
3	1 or 2, in Cochrane Reviews and Health Technology Assessments	25

Table 3 Search of National Guideline Clearinghouse (NGC) for Guidelines

Keyword	Results
respiratory viral infection	140
limit to infant age group	64

Table 4 Search of American Academy of Pediatrics (AAP) for Guideline

Search History	Results
Browsed http://pediatrics.aappublications.org/site/aappolicy/index.xhtml	49

Table 5 Search of Association for Professionals in Infection Control and Epidemiology (APIC) for Guidelines

Search History	Results
Browsed http://www.apic.org	3

Table 6 Search of CDC and Healthcare Infection Control Practices Advisory Committee (HICPAC) for Guidelines

Search History	Results
Browsed http://www.cdc.gov/hicpac	2

Table 7 Search of Infectious Diseases Society of America (IDSA) for Guidelines

Search History	Results
Browsed http://www.idsociety.org	1

Table 8 Search of National Institute for Health and Clinical Excellence (NICE) for Guidelines

Search History	Results
Browsed http://guidance.nice.org.uk	1

Table 9 Search of Scottish Intercollegiate Guidelines Network (SIGN) for Guidelines

Search History	Results
Browsed http://sign.ac.uk/guidelines/index.html	0

Table 10 Search of Society for Healthcare Epidemiology of America (SHEA) for Guidelines

Search History	Results
Browsed http://www.shea-online.org	1

A.2. Primary Study Search Strategies: Viral Respiratory Illnesses/ RSV

Table 11 Primary Viral Illness Search of MEDLINE

Search History	Results through 12/2012	Results 12/2012 - 7/5/2016	Results 7/5/2016 11/18/2022
exp Intensive Care Units, Neonatal/ or exp Intensive Care, Neonatal/ OR Infant, Newborn/ AND (exp Respiratory Tract Infections/ AND exp Virus Diseases/) OR exp Respiratory Syncytial Virus Infections/ or exp Respiratory Syncytial Viruses/ AND exp Infection Control/ OR exp Cross Infection/ OR exp Communicable Disease Control/ NOT Exp Animals/ NOT exp humans/ AND publication dates English	341	158	631

Table 12 Primary Viral Illness Search of EMBASE

Search History	Results through 12/2012	Results 12/2012 - 7/5/2016	Results 7/5/2016 – 11/18/2022
(Exp respiratory tract infection/ and exp virus infection/) OR Exp respiratory syncytial virus infection/ OR exp respiratory syncytial pneumovirus/ AND Exp newborn intensive care/ or exp newborn/ AND Exp infection control/ or exp hospital infection/ or exp cross infection/ NOT Exp Animal/ NOT exp human/ AND publication dates English	16	9	52

Table 13 Primary Viral Illness Search of Cochrane Library

Search History	Results through 12/2012	Results 12/2012 - 7/5/2016	Results 7/5/2016 – 11/18/2022
1. Intensive Care Units, Neonatal explode all trees 2. Intensive Care, Neonatal explode all trees 3. Infant, Newborn explode all trees 4. #1 OR #2 OR #3 5. "Respiratory Tract Infections" explode all trees 6. "Virus Diseases" explode all trees 7. #5 AND #6 8. "Respiratory Syncytial Virus Infections" explode all trees 9. #7OR #8 10. Infection Control explode all trees 11. Cross Infection explode all trees 12. Communicable Disease Control explode all trees 13. #10 OR #11 OR #12 14. #4 AND #9 AND #13 Publication date July 2016 -	71	12	4

Table 14 Primary Viral illness Search of CINAHL

Search History	Results through 12/2012	Results 12/2012 - 7/5/2016	Results 7/5/2016 – 11/18/2022
((MH "Virus Diseases+") AND (MH "Respiratory Tract Infections")) OR (MH "Respiratory Syncytial Virus Infections") OR (MH "Respiratory Syncytial Viruses") AND (MH "Intensive Care Units, Neonatal") OR (MH "Intensive Care, Neonatal") OR (MH "Infant, Newborn+") AND Limit to english language; exclude MEDLINE records; Published Date-	71	12	86

A.2. Primary Study Search Strategies: Varicella

Table 15 Primary Varicella Search of MEDLINE

#	Search History	Results through 12/2012	Results 12/2012 - 7/5/2016	Results 7/5/2016 – 11/18/2022
1	exp Intensive Care Units, Neonatal/ or exp Intensive Care, Neonatal/	10468	15068	22079
2	exp Infant, Newborn/	440039	541022	655642
3	1 or 2	440773	542198	657262
4	exp Chickenpox/ or exp Herpesvirus 3, Human/	9087	11297	13218
5	3 and 4	758	893	974
6	exp Infection Control/	43472	55607	69291
7	exp Cross Infection/	39337	51355	63616
8	exp Communicable Disease Control/	207130	288187	395159
9	6 or 7 or 8	236616	326701	443885
10	5 and 9	95	123	156
11	limit 10 to (english language and humans)	79	108	139
12	(201607* OR 201608* OR 201609* OR 201610* OR 201611* OR 201612* OR 2017* OR 2018* OR 2019* OR 2020* OR 2021* OR 2022*).dt		22	28

Table 16 Primary Varicella Search of EMBASE

#	Search History	Results through 12/2012	Results 12/2012 - 7/5/2016	Results 7/5/2016 – 11/18/2022
1	Exp newborn intensive care/ or exp newborn/	434871	351852	676874
2	Exp chickenpox/ or exp varicella zoster virus/	15108	16152	27589
3	1 and 2	647	538	966
4	Exp infection control/ or exp hospital infection/ or exp cross infection/	90076	120312	184646
5	3 and 4	29	28	35
6	Limit 5 to (english language and humans)	21	22	27

#	Search History	Results through 12/2012	Results 12/2012 - 7/5/2016	Results 7/5/2016 – 11/18/2022
7	publication dates		4	1

Table 17 Primary Varicella Search of Cochrane Library

#	Search History	Results through 12/2012	Results 12/2012 - 7/5/2016	Results 7/5/2016 – 11/18/2022
1	MeSH descriptor Intensive Care, Neonatal explode all trees	253	307	139
2	MeSH descriptor Intensive Care Units, Neonatal explode all trees	401	559	95
3	MeSH descriptor Infant, Newborn explode all trees	11218	14329	207
4	1 or 2 or 3	11250	14370	253
5	MeSH descriptor Cross Infection explode all trees	1277	1477	1392
6	MeSH descriptor Infection Control explode all trees	1080	1293	1631
7	MeSH descriptor Communicable Disease Control explode all trees	3811	5096	72
8	5 or 6 or 7	4796	6267	1713
9	4 and 8	366	478	150
10	MeSH descriptor Chickenpox explode all trees	154	139	3
11	MeSH descriptor Herpesvirus 3, Human explode all trees	116	133	10
12	10 or 11	223	226	12
13	9 and 12	6	3	3
14	Limit to 2016-current		1	3

Table 18 Primary Varicella Search of CINAHL

#	Search History	Results through 12/2012	Results 12/2012 - 7/5/2016	Results 7/5/2016 – 11/18/2022
1	(MH "Intensive Care, Neonatal+") or (MH "Intensive Care Units, Neonatal")	6428	10033	19863
2	(MH "Chickenpox") or (MH "Herpesviruses+")	2160	3144	8287
3	MH "Infection Control+"	29526	42696	80711
4	MH "Cross Infection+"	14160	21838	34914
5	MH "Communicable Diseases"	4254	5884	12383
6	3 or 4 or 5	40673	59588	112404
7	MH "Infant, Newborn+"	49610	66361	152560
8	1 or 7	50951	69458	157914
9	2 and 6 and 8	29	37	63
10	Limit to publication dates		3	13

A.2. Primary Study Search Strategies: Pertussis

Table 19 Primary Pertussis Search of MEDLINE

#	Search History	Results through 12/2012	Results 12/2012 - 7/5/2016	Results 7/5/2016 – 11/18/2022
1	exp Intensive Care Units, Neonatal/ or exp Intensive Care, Neonatal/	10468	15068	22079
2	exp Infant, Newborn/	440039	541022	655642
3	1 or 2	440773	542198	657262
4	exp Infection Control/	43472	55607	69291
5	exp Cross Infection/	39337	51355	63616
6	exp Communicable Disease Control/	207130	288187	395159
7	4 or 5 or 6	236616	326701	443885
8	exp Whooping Cough/	5724	7591	8996
9	exp Bordetella/ or exp Bordetella Infections/ or exp Bordetella pertussis/	9661	11920	13711
10	8 or 9	9661	11920	13711
11	3 and 7 and 10	237	362	533
12	limit 11 to (english language and humans)	177	292	450
13	publication year		93	142

Table 20 Primary Pertussis Search of EMBASE

#	Search History	Results through 12/2012	Results 12/2012 - 7/5/2016	Results 7/5/2016 – 11/18/2022
1	Exp newborn intensive care/ or exp newborn/	434871	351852	676874
2	Exp bordetella pertussis/ or exp pertussis/	12291	11227	22518
3	Exp infection control/ or exp hospital infection/ or exp cross infection/	90076	120312	184646
4	1 and 2	634	561	1204
5	3 and 4	41	45	56
6	Limit 5 to (english language and humans)	31	38	44
7	publication year		7	2

Table 21 Primary Pertussis Search of Cochrane Library

#	Search History	Results through 12/2012	Results 12/2012 - 7/5/2016	Results 7/5/2016 – 11/18/2022
1	MeSH descriptor Intensive Care, Neonatal explode all trees	253	307	139
2	MeSH descriptor Intensive Care Units, Neonatal explode all trees	401	559	95
3	MeSH descriptor Infant, Newborn explode all trees	11218	14329	207
4	1 or 2 or 3	11250	14370	253
5	MeSH descriptor Cross Infection explode all trees	1277	1477	1392

#	Search History	Results through 12/2012	Results 12/2012 - 7/5/2016	Results 7/5/2016 – 11/18/2022
6	MeSH descriptor Infection Control explode all trees	1080	1293	1631
7	MeSH descriptor Communicable Disease Control explode all trees	3811	5096	72
8	5 or 6 or 7	4796	6267	1713
9	4 and 8	366	478	150
10	MeSH descriptor Bordetella pertussis explode all trees	116	118	5
11	MeSH descriptor Whooping Cough explode all trees	203	221	10
12	MeSH descriptor Bordetella explode all trees	117	119	6
13	MeSH descriptor Bordetella Infections explode all trees	203	221	6
14	10 or 11 or 12 or 13	255	274	12
15	9 and 14	4	8	5
16	Publication Year		2	3

Table 22 Primary Pertussis Search of CINAHL

#	Search History	Results through 12/2012	Results 12/2012 - 7/5/2016	Results 7/5/2016 – 11/18/2022
1	(MH "Intensive Care, Neonatal+") or (MH "Intensive Care Units, Neonatal") or (MH "Infant, Newborn+")	50951	72510	157914
2	(MH "Bordetella Pertussis") or (MH "Whooping Cough")	707	1186	2160
3	MH "Infection Control+"	29526	42696	80711
4	MH "Cross Infection+"	14160	21838	34914
5	MH "Communicable Diseases"	4254	5884	12383
6	3 or 4 or 5	40673	59588	112404
7	1 and 2 and 6	41	77	134
8	Limit 7 to (english language; exclude MEDLINE records)	10	19	37
9	Limit to year		8	11

B. Study Exclusion Criteria

Criteria for excluding studies from the literature review are:

1. Not relevant to key questions
2. Not primary research
3. Meeting abstract only
4. No full text available
5. Not in English

6. Not 100% of patients are in NICU patients
7. Mixed patient population without NICU subgroups or infant location not specified
8. Methods paper on HAI surveillance only
9. Exclude studies examining interventions of any kind (single or multi-intervention) unless they provide a clear description of the interventions and statistical analysis comparing time points before and after the intervention
10. N<10 exposed
11. Study only examining immunizations
12. Other

C. Evidence Review

Question 1. In neonatal intensive care unit patients, does prophylaxis after viral exposure (e.g., palivizumab, oseltamivir), compared to no prophylaxis, prevent the transmission of infection?

Question 2. In neonatal intensive care unit patients, does prophylactic administration of palivizumab, compared with no palivizumab, prevent the transmission of RSV during RSV season?

Question 3. In neonatal intensive care unit patients, does prophylactic administration of palivizumab, compared to no palivizumab, prevent the transmission of RSV during an RSV outbreak?

No evidence was retrieved that answered these questions for NICU patients.

D. References for Select Excluded Studies

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