

Neonatal Parenteral Nutrition

Supplementary material D - Health economic literature

NICE guideline tbc

Supplementary material D

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Draft for Consultation

Supplementary materials were developed by the National Guideline Alliance which is part of the Royal College of Obstetricians and Gynaecologists

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Economic literature search strategies

Databases: Medline; Medline EPub Ahead of Print; and Medline In-Process & Other Non-Indexed Citations

#	Searches
1	ECONOMICS/
2	VALUE OF LIFE/
3	exp "COSTS AND COST ANALYSIS"/
4	exp ECONOMICS, HOSPITAL/
5	exp ECONOMICS, MEDICAL/
6	exp RESOURCE ALLOCATION/
7	ECONOMICS, NURSING/
8	ECONOMICS, PHARMACEUTICAL/
9	exp "FEES AND CHARGES"/
10	exp BUDGETS/
11	budget*.ti,ab.
12	cost*.ti,ab.
13	(economic* or pharmaco?economic*).ti,ab.
14	(price* or pricing*).ti,ab.
15	(financ* or fee or fees or expenditure* or saving*).ti,ab.
16	(value adj2 (money or monetary)).ti,ab.
17	resourc* allocat*.ti,ab.
18	(fund or funds or funding* or funded).ti,ab.
19	(ration or rations or rationing* or rationed).ti,ab.
20	ec.fs.
21	or/1-20
22	INFANT, NEWBORN/
23	(neonat\$ or newborn\$ or new-born\$ or baby or babies).ti,ab.
24	PREMATURE BIRTH/
25	((preterm\$ or pre-term\$ or prematur\$ or pre-matur\$) adj5 (birth? or born)).ab,ti.
26	exp INFANT, PREMATURE/
27	((preterm\$ or pre-term\$ or prematur\$ or pre-matur\$) adj5 infan\$).ti,ab.
28	(pre#mie? or premie or premies).ti,ab.
29	exp INFANT, LOW BIRTH WEIGHT/
30	(low adj3 birth adj3 weigh\$ adj5 infan\$).ti,ab.
31	((LBW or VLBW) adj5 infan\$).ti,ab.
32	INTENSIVE CARE, NEONATAL/
33	INTENSIVE CARE UNITS, NEONATAL/
34	NICU?.ti,ab.
35	or/22-34
36	PARENTERAL NUTRITION/
37	PARENTERAL NUTRITION, TOTAL/
38	PARENTERAL NUTRITION SOLUTIONS/
39	ADMINISTRATION, INTRAVENOUS/
40	INFUSIONS, INTRAVENOUS/
41	CATHETERIZATION, CENTRAL VENOUS/
42	exp CATHETERIZATION, PERIPHERAL/
43	(parenteral\$ or intravenous\$ or intra-venous\$ or IV or venous\$ or infusion?).ti,ab.
44	((peripheral\$ or central\$) adj3 (line? or catheter\$)).ti,ab.
45	drip?.ti,ab.
46	or/36-45
47	35 and 46
48	limit 47 to english language
49	LETTER/
50	EDITORIAL/
51	NEWS/
52	exp HISTORICAL ARTICLE/
53	ANECDOTES AS TOPIC/
54	COMMENT/
55	CASE REPORT/
56	(letter or comment*).ti.
57	or/49-56

#	Searches
58	RANDOMIZED CONTROLLED TRIAL/ or random*.ti,ab.
59	57 not 58
60	ANIMALS/ not HUMANS/
61	exp ANIMALS, LABORATORY/
62	exp ANIMAL EXPERIMENTATION/
63	exp MODELS, ANIMAL/
64	exp RODENTIA/
65	(rat or rats or mouse or mice).ti.
66	or/59-65
67	48 not 66
68	21 and 67

Databases: Embase; and Embase Classic

#	Searches
1	HEALTH ECONOMICS/
2	exp ECONOMIC EVALUATION/
3	exp HEALTH CARE COST/
4	exp FEE/
5	BUDGET/
6	FUNDING/
7	RESOURCE ALLOCATION/
8	budget*.ti,ab.
9	cost*.ti,ab.
10	(economic* or pharmaco?economic*).ti,ab.
11	(price* or pricing*).ti,ab.
12	(financ* or fee or fees or expenditure* or saving*).ti,ab.
13	(value adj2 (money or monetary)).ti,ab.
14	resourc* allocat*.ti,ab.
15	(fund or funds or funding* or funded).ti,ab.
16	(ration or rations or rationing* or rationed).ti,ab.
17	or/1-16
18	NEWBORN/
19	(neonat\$ or newborn\$ or new-born\$ or baby or babies).ti,ab.
20	PREMATURITY/
21	((preterm\$ or pre-term\$ or prematur\$ or pre-matur\$) adj5 (birth? or born)).ab,ti.
22	((preterm\$ or pre-term\$ or prematur\$ or pre-matur\$) adj5 infan\$).ti,ab.
23	(pre#mie? or premie or premies).ti,ab.
24	exp LOW BIRTH WEIGHT/
25	(low adj3 birth adj3 weigh\$ adj5 infan\$).ti,ab.
26	((LBW or VLBW) adj5 infan\$).ti,ab.
27	NEWBORN INTENSIVE CARE/
28	NEONATAL INTENSIVE CARE UNIT/
29	NICU?.ti,ab.
30	or/18-29
31	PARENTERAL NUTRITION/
32	TOTAL PARENTERAL NUTRITION/
33	PERIPHERAL PARENTERAL NUTRITION/
34	PARENTERAL SOLUTIONS/
35	INTRAVENOUS FEEDING/
36	INTRAVENOUS DRUG ADMINISTRATION/
37	exp INTRAVENOUS CATHETER/
38	(parental\$ or intravenous\$ or intra-venous\$ or IV or venous\$ or infusion?).ti,ab.
39	((peripheral\$ or central\$) adj3 (line? or catheter\$)).ti,ab.
40	drip?.ti,ab.
41	or/31-40
42	30 and 41
43	limit 42 to english language
44	letter.pt. or LETTER/
45	note.pt.
46	editorial.pt.
47	CASE REPORT/ or CASE STUDY/
48	(letter or comment*).ti.
49	or/44-48
50	RANDOMIZED CONTROLLED TRIAL/ or random*.ti,ab.

#	Searches
51	49 not 50
52	ANIMAL/ not HUMAN/
53	NONHUMAN/
54	exp ANIMAL EXPERIMENT/
55	exp EXPERIMENTAL ANIMAL/
56	ANIMAL MODEL/
57	exp RODENT/
58	(rat or rats or mouse or mice).ti.
59	or/51-58
60	43 not 59
61	17 and 60

Database: Cochrane Central Register of Controlled Trials

#	Searches
1	MeSH descriptor: [ECONOMICS] this term only
2	MeSH descriptor: [VALUE OF LIFE] this term only
3	MeSH descriptor: [COSTS AND COST ANALYSIS] explode all trees
4	MeSH descriptor: [ECONOMICS, HOSPITAL] explode all trees
5	MeSH descriptor: [ECONOMICS, MEDICAL] explode all trees
6	MeSH descriptor: [RESOURCE ALLOCATION] explode all trees
7	MeSH descriptor: [ECONOMICS, NURSING] this term only
8	MeSH descriptor: [ECONOMICS, PHARMACEUTICAL] this term only
9	MeSH descriptor: [FEES AND CHARGES] explode all trees
10	MeSH descriptor: [BUDGETS] explode all trees
11	budget*.ti,ab.
12	cost*.ti,ab.
13	(economic* or pharmaco?economic*).ti,ab.
14	(price* or pricing*).ti,ab.
15	(financ* or fee or fees or expenditure* or saving*).ti,ab.
16	(value near/2 (money or monetary)).ti,ab.
17	resourc* allocat*.ti,ab.
18	(fund or funds or funding* or funded).ti,ab.
19	(ration or rations or rationing* or rationed).ti,ab.
20	ec.fs.
21	#1 or #2 or #3 or #4 or #5 or #6 or #7 or #8 or #9 or #10 or #11 or #12 or #13 or #14 or #15 or #16 or #17 or #18 or #19 or #20
22	MeSH descriptor: [INFANT, NEWBORN] this term only
23	(neonat* or newborn* or new-born* or baby or babies).ti,ab.
24	MeSH descriptor: [PREMATURE BIRTH] this term only
25	((preterm* or pre-term* or prematur* or pre-matur*) near/5 (birth? or born)).ab,ti.
26	MeSH descriptor: [INFANT, PREMATURE] explode all trees
27	((preterm* or pre-term* or prematur* or pre-matur*) near/5 infan*).ti,ab.
28	(pre#mie? or premie or premies).ti,ab.
29	MeSH descriptor: [INFANT, LOW BIRTH WEIGHT] explode all trees
30	(low near/3 birth near/3 weigh* near/5 infan*).ti,ab.
31	((LBW or VLBW) near/5 infan*).ti,ab.
32	MeSH descriptor: [INTENSIVE CARE, NEONATAL] this term only
33	MeSH descriptor: [INTENSIVE CARE UNITS, NEONATAL] this term only
34	NICU?.ti,ab.
35	#22 or #23 or #24 or #25 or #26 or #27 or #28 or #29 or #30 or #31 or #32 or #33 or #34
36	MeSH descriptor: [PARENTERAL NUTRITION] this term only
37	MeSH descriptor: [PARENTERAL NUTRITION, TOTAL] this term only
38	MeSH descriptor: [PARENTERAL NUTRITION SOLUTIONS] this term only
39	MeSH descriptor: [ADMINISTRATION, INTRAVENOUS] this term only
40	MeSH descriptor: [INFUSIONS, INTRAVENOUS] this term only
41	MeSH descriptor: [CATHETERIZATION, CENTRAL VENOUS] this term only
42	MeSH descriptor: [CATHETERIZATION, PERIPHERAL] explode all trees
43	(parenteral* or intravenous* or intra-venous* or IV or venous* or infusion?).ti,ab.
44	((peripheral* or central*) near/3 (line? or catheter*)).ti,ab.
45	drip?.ti,ab.
46	#36 or #37 or #38 or #39 or #40 or #41 or #42 or #43 or #44 or #45
47	#21 and #35 and #46

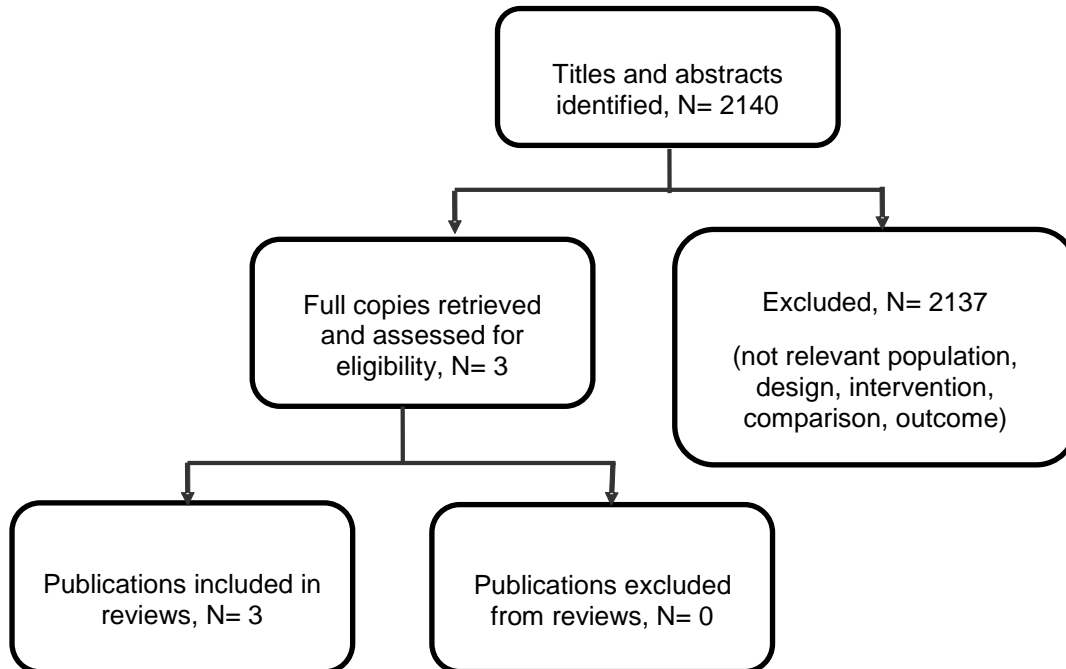
Databases: Health Technology Assessment; and NHS Economic Evaluation Database

#	Searches
1	MeSH descriptor: [INFANT, NEWBORN] this term only
2	(neonat* or newborn* or new-born* or baby or babies).ti,ab.
3	MeSH descriptor: [PREMATURE BIRTH] this term only
4	((preterm* or pre-term* or prematur* or pre-matur*) near/5 (birth? or born)).ab,ti.
5	MeSH descriptor: [INFANT, PREMATURE] explode all trees
6	((preterm* or pre-term* or prematur* or pre-matur*) near/5 infan*).ti,ab.
7	(pre#mie? or premie or premies).ti,ab.
8	MeSH descriptor: [INFANT, LOW BIRTH WEIGHT] explode all trees
9	(low near/3 birth near/3 weigh* near/5 infan*).ti,ab.
10	((LBW or VLBW) near/5 infan*).ti,ab.
11	MeSH descriptor: [INTENSIVE CARE, NEONATAL] this term only
12	MeSH descriptor: [INTENSIVE CARE UNITS, NEONATAL] this term only
13	NICU?.ti,ab.
14	#1 or #2 or #3 or #4 or #5 or #6 or #7 or #8 or #9 or #10 or #11 or #12 or #13
15	MeSH descriptor: [PARENTERAL NUTRITION] this term only
16	MeSH descriptor: [PARENTERAL NUTRITION, TOTAL] this term only
17	MeSH descriptor: [PARENTERAL NUTRITION SOLUTIONS] this term only
18	MeSH descriptor: [ADMINISTRATION, INTRAVENOUS] this term only
19	MeSH descriptor: [INFUSIONS, INTRAVENOUS] this term only
20	MeSH descriptor: [CATHETERIZATION, CENTRAL VENOUS] this term only
21	MeSH descriptor: [CATHETERIZATION, PERIPHERAL] explode all trees
22	(parenteral* or intravenous* or intra-venous* or IV or venous* or infusion?).ti,ab.
23	((peripheral* or central*) near/3 (line? or catheter*)).ti,ab.
24	drip?.ti,ab.
25	#15 or #16 or #17 or #18 or #19 or #20 or #21 or #22 or #23 or #24
26	#14 and #25

Economic study selection

Economic evidence study selection is shown in Figure 1. The number of included and excluded studies for each review question is detailed in Table 1.

Figure 1: Economic study selection for neonatal parenteral nutrition



1 **Table 1: Summary of economic study selection**

	Chapter	Review questions	Number of included studies	Number of excluded studies
1.1	A	What are the predictors for enteral feeding success?	0	0
1.2	B	For those neonates where parenteral nutrition is required, what is the optimal timeframe for doing this?	0	0
1.3	C1	What are the most effective relative amounts of nitrogen and non-nitrogen energy (starting and target dose)?	0	0
1.4	C2	What are the most effective relative amounts of carbohydrates and lipids (starting and target dose)?	0	0
2.1	D	How many kcal/kg/day should be given to preterm and term babies receiving parenteral nutrition?	0	0
3.1	E1	What is the optimal target dosage for amino acids in preterm and term babies who are receiving parenteral nutrition and neonatal care?	0	0
3.2	E2	What is the optimal way (starting dose and approach to increment, if employed) to achieve this target dosage for amino acids?	0	0
3.3	F1	What is the optimal target dosage for carbohydrates in preterm and term babies who are receiving parenteral nutrition and neonatal care?	0	0
3.4	F2	What is the optimal way (starting dose and approach to increment, if employed) to achieve this target dosage for carbohydrates?	0	0
3.5	G1	What is the optimal target dosage for lipids in preterm and term babies who are receiving parenteral nutrition and neonatal care?	0	0
3.6	G2	What is the optimal way (starting dose and approach to increment, if employed) to achieve this target dosage for lipids?	0	0
3.7	H	What is the clinical effectiveness, efficacy, and safety of lipid formulations from different sources (for example, soya, fish oil, or mixed sources)?	0	0
3.8	I1	What are the optimal target dosages for calcium and phosphate in preterm and term babies who are receiving parenteral nutrition and neonatal care?	0	0
3.9	I2	What is the optimal ratio of phosphate to amino acid in preterm and term babies who are receiving parenteral nutrition and neonatal care?	0	0

	Chapter	Review questions	Number of included studies	Number of excluded studies
3.10	J	What is the most effective and safe iron supplementation compared to no iron or different dosage/formulations in preterm and term babies who are receiving parenteral nutrition and neonatal care?	0	0
3.11	K	How much (if any) intravenous acetate should be provided to preterm and term babies who are receiving parenteral nutrition and neonatal care?	0	0
3.12	L	What is the effectiveness, efficacy and safety of standardised parenteral nutrition bags compared with individualised bags?	3	0
4.1	M	What overall osmolality, concentration of calcium and glucose/dextrose in parenteral nutrition can determine whether to administer centrally or peripherally?	0	0
5.1	N	In babies on parenteral nutrition, what is the optimal frequency of blood sampling for monitoring glucose, calcium, phosphate, potassium and serum triglycerides?	0	0
6.2	O	What amount of enteral feed (measured in terms of ml/kg/d, or kcal/kg/d, or ratios in relation to PN and enteral feeds) indicates that parenteral nutrition is no longer required?	0	0
7.1	P	Are nutrition care/support teams effective in providing parenteral nutrition in preterm and term babies?	0	0
8.1	Q	What are the most effective methods of information provision about PN, and what information and support about this do parents/carers perceive as useful?	0	0
9.1	R	What are the general principles of neonatal parenteral nutrition?	0	0

1