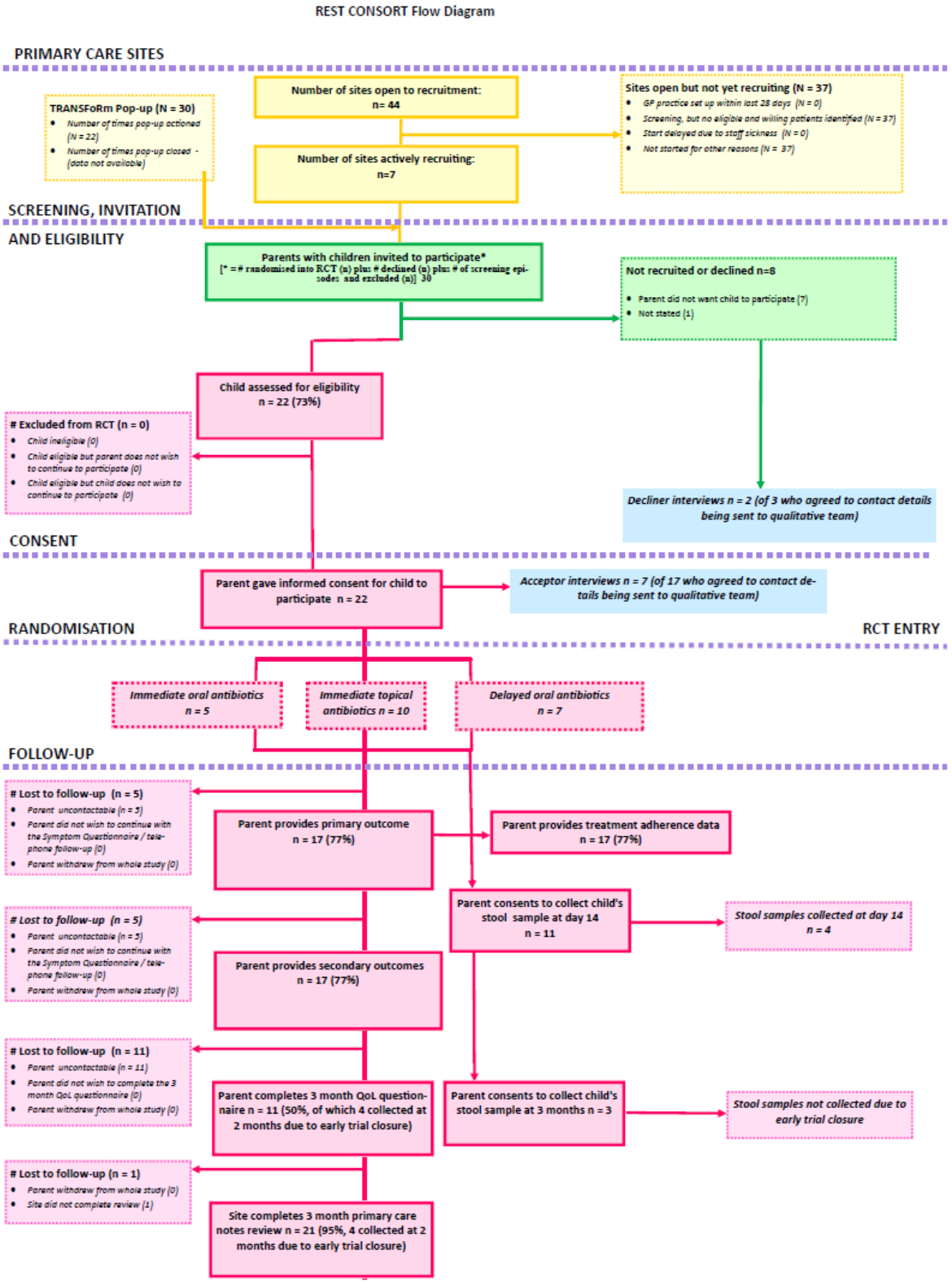
Participant Flow



Baseline Characteristics

	Immediate oral antibiotics (n=5)	*Delayed oral antibiotics (n=7)*	*Immediate topical antibiotics (n=10)[a]*	*Pooled across arms (n=22)[b]*
Collected at baseline appointment				
Age (years, IQR)	6 (2, 7)	5 (3, 11)	5 (2, 6)	5 (2, 7)
Sex				
Male	5 (100%)	5 (71%)	4 (40%)	14 (64%)
Female	0	2 (29%)	6 (60%)	8 (36%)
Days of discharge (IQR)	4 (1, 7)	1 (1, 3)	2 (1, 3)	2 (1, 4)
Clinician rating of how unwell is child (0=not at all to 10=extremely)	3 (1, 3)	1 (1, 4)	2 (2, 4)	2 (1, 4)
Temperature (°C)	36.6 (36.6, 36.6)	36.7 (36.6, 37.0)	37.2 (36.6, 37.3)	36.7 (36.6, 37.2)
Visible aural discharge:				
Yes	3 (60%)	6 (86%)	9 (100%)	18 (86%)
No	2 (40%)	1 (14%)	0	3 (14%)
Visible perforation:				
Yes	0	0	1 (11%)	1 (5%)
No	5 (100%)	7 (100%)	8 (89%)	20 (95%)
History of AOM (ever):				
Yes	4 (80%)	4 (57%)	5 (56%)	11 (52%)
No	1 (20%)	3 (43%)	4 (44%)	10 (48%)
History of AOMd (ever):				
Yes	3 (60%)	1 (14%)	3 (33%)	7 (33%)
No	2 (40%)	6 (86%)	6 (67%)	14 (67%)
History of glue ear (ever):				
Yes	2 (40%)	0	0	2 (10%)
No	3 (60%)	7 (100%)	9 (100%)	19 (90%)
Antibiotic prescription (collected at primary care medical notes review)				
Oral amoxicillin	5	5	0	10
Oral clarithromycin	0	1	0	1
Ciprofloxacin drops	0	0	10	10
No prescription recorded	0	1	0	1
Collected from Symptom Recovery Questionnaire at day 1				
	(n=4)	(n=6)	(n=7)	(n=17)
Ever had grommets:				
Yes	0	0	0	0
No	4 (100%)	6 (100%)	7 (100%)	17 (100%)
Ever had ENT surgery:				
Yes	0	1 (17%)	0	1 (6%)
No	4 (100%)	5 (83%)	7 (100%)	16 (94%)
Ever had eczema, hay fever and/ or asthma:				
Yes	1 (25%)	4 (67%)	1 (14%)	6 (35%)
No	3 (75%)	2 (33%)	6 (85%)	11 (65%)
Household smoker:				

Yes	1 (25%)	2 (33%)	1 (14%)	4 (24%)
No	3 (75%)	4 (67%)	6 (85%)	13 (76%)
Level of educational qualification (parent):				
Left school before 16	0	1 (17%)	0	1 (6%)
Usual age 15/16 exams	1 (25%)	1 (17%)	1 (14%)	3 (18%)
Usual age 17/18 exams	2 (50%)	0	0	2 (12%)
Further but not HEI	0	2 (33%)	5 (71%)	7 (41%)
University degree	1 (25%)	2 (33%)	1 (14%)	4 (24%)
Not applicable	0	0	0	0

Outcome Measures

	Immediate oral antibiotics (n=4)	*Delayed oral antibiotics (n=6)*	*Immediate topical antibiotics (n=7)*
Primary outcome			
Days (IQR) to all symptoms first resolved[a]	6 (4, 9)	4 (3, 7)	4 (3, 6)
Secondary outcomes (first 14 days)			
Symptom outcomes (days, IQR unless otherwise stated)			
Number (%) with all symptoms resolved[a] at day 3			
Yes	1 (25%)	3 (50%)	3 (43%)
No	3 (75%)	3 (50%)	4 (57%)
Time to symptoms first rated "normal/none", "very slight problem" or "slight problem"	3 (3, 4)	4 (2, 6)	3 (2, 5)
Number (%) at day 3 with symptoms rated "normal/none", "very slight problem" or "slight problem"			
Yes	3 (75%)	3 (50%)	5 (71%)
No	1 (25%)	3 (50%)	2 (29%)
Duration of moderate or worse pain	3 (2, 3)	2 (1, 4)	1 (1, 3)
Duration of moderate or worse fever	1 (1, 2)	1 (1, 1)	1 (1, 1)
Duration of moderate or worse ear discharge	3 (2, 3)	3 (2, 3)	2 (1, 3)
Duration of moderate or worse unwell	2 (2, 2)	2 (1, 3)	1 (1, 1)
Duration of moderate or worse sleep	2 (2, 2)	2 (1, 2)	1 (1, 4)
Duration of moderate or worse crying	3 (2, 3)	2 (1, 3)	1 (1, 3)
Duration of moderate or worse eating/ drinking	2 (2, 2)	1 (1, 1)	1 (1, 2)
Duration of moderate or worse activities	2 (2, 2)	2 (1, 2)	1 (1, 1)
Satisfaction with treatment at day 14			
Extremely satisfied	2 (50%)	1 (17%)	4 (57%)
Satisfied	1 (25%)	4 (67%)	3 (43%)
Neither satisfied nor dissatisfied	0	1 (17%)	0
Not satisfied	1 (25%)	0	0
Extremely dissatisfied	0	0	0

Adverse events			
Number (%) with new, or worsening of existing, symptom in the first week			
Yes	1 (25%)	0	2 (29%)
No	3 (75%)	6 (100%)	5 (71%)
Number (%) with new, or worsening of existing, symptom in second week			
Yes	0	1 (17%)	2 (29%)
No	4 (100%)	5 (83%)	5 (71%)
Stool sample microbiological raw data at day 14 (N=4)			
Processed at research laboratory	1	0	3
First E. coli type			
MALDI-TOF[b] raw scores[c]	2.41	-	2.01, 2.2, 2.45
Ampicillin zone (raw data) sizes (mm)[d]	<6	-	<6, 14, <6
Ampicillin sensitive or resistant (raw data, % resistant)	R (100%)	-	R, S, R (66%)
Ciprofloxacin raw data (mean) zone size (mm)[d]	32 (32)	-	23, 35, 37 (31.7)
Ciprofloxacin sensitive or resistant (raw data, % resistant)	S (0%)	-	R, S, S (33%)
Erythromycin raw data (mean) zone size (mm)[d]	9 (9)	-	11, 15, 16 (14)
Second E. coli type			
MALDI-TOF[b] score[c]	2.55	-	-
Ampicillin zone size (mm)[d]	No zone	-	-
E. coli ampicillin sensitive or resistant	R	-	-
Ciprofloxacin zone size (mm)[d]	27.1	-	-
Ciprofloxacin sensitive or resistant	S	-	-
Erythromycin zone size (mm)[d]	9.8	-	-

	Immediate oral antibiotics (n=4)	*Delayed oral antibiotics (n=6)*	*Immediate topical antibiotics (n=7)*
Secondary outcomes (3 months)			
Parent reported ear related quality of life at 3 months (OMQ-14 questionnaire)[33]	*N=3*	*N=5*	*N=3*
Physical suffering			
Not present/no problem	2 (67%)	4 (80%)	1 (33%)
Hardly a problem at all	0	0	0
Somewhat of a problem	0	1 (20%)	1 (33%)
Moderate problem	1 (33%)	0	1 (33%)
Quite a bit of a problem	0	0	0
Very much of a problem	0	0	0
Extreme problem	0	0	0
Hearing loss			
Not present/no problem	2 (67%)	3 (60%)	3 (100%)
Hardly a problem at all	0	0	0

Somewhat of a problem	0	1 (20%)	0
Moderate problem	0	1 (20%)	0
Quite a bit of a problem	1 (33%)	0	0
Very much of a problem	0	0	0
Extreme problem	0	0	0
Speech impairment			
Not present/no problem	2 (67%)	5 (100%)	3 (100%)
Hardly a problem at all	0	0	0
Somewhat of a problem	0	0	0
Moderate problem	0	0	0
Quite a bit of a problem	1 (33%)	0	0
Very much of a problem	0	0	0
Extreme problem	0	0	0
Emotional distress			
Not present/no problem	2 (67%)	4 (80%)	2 (67%)
Hardly a problem at all	0	0	0
Somewhat of a problem	0	1 (20%)	0
Moderate problem	1 (33%)	0	0
Quite a bit of a problem	0	0	1 (33%)
Very much of a problem	0	0	0
Extreme problem	0	0	0
Activity limitations			
Not limited at all	2 (67%)	5 (100%)	3 (100%)
Hardly limited at all	0	0	0
Very slightly limited	0	0	0
Slightly limited	1 (33%)	0	0
Moderately limited	0	0	0
Very limited	0	0	0
Severely limited	0	0	0
Caregiver concerns			
None of the time	1 (33%)	3 (60%)	1 (33%)
Hardly any at all	1 (33%)	0	0
A small part of the time	0	0	1 (33%)
Some of the time	0	1 (20%)	1 (33%)
A good part of the time	1 (33%)	1 (20%)	0
Most of the time	0	0	0
All of the time	0	0	0

Adverse Events

There were no serious adverse events associated with this trial.

There were three reports of new or worsening of existing symptoms within the first seven days of follow up, one ('scratching ear') in the immediate oral and two ('swollen painful eye with headaches' and 'eye discharge') in the immediate topical antibiotic arms. There were three reports of new or worsening of existing symptoms in the second seven days of follow up, one ('ear leaking again') in the delayed oral and two ('sore throat with temperature' and 'eye discharge') in the immediate topical antibiotic arms (see outcomes table). The report of 'eye discharge' from the first and second 7 days were from the same participant.