eMethod 1 Staff ratios

Medical staff time required during each of the five phases was costed based on the trial records and the treatment protocol, adjusted as if PPOIT were to be rolled out as standard care for the results to be more relevant in informing decision making and summarized in **eTable 1 (a)**. More specifically, nurse versus patient versus doctor ratios during rush and build up phase in the trial were 1:1:1 (i.e., 1 nurse in the same room with 1 patient; 1 doctor available in the vicinity on-call). In pragmatic practice, ratios of 1:3:1 are anticipated for these visits when research-related tasks are excluded (i.e., 1 nurse in the same room with 3 patients; 1 doctor available in the vicinity on-call). This ratio is considered conservative given that the primary tasks for nurses were to supervise up-dosing with doctors on-call for safety purposes. For doctors specifically and during the buildup phase, two thirds of their total appointment time was costed due to the reduced levels of interactions during these routine visits. In the maintenance phase, patients would visit clinic if they missed doses for 3-4 days, and staff time was costed assuming that 7% of the patients would need to visit based on estimates from the trial nurses. Staff time, pathology tests and medical supplies were costed by applying unit costs, wage rates and on-costs sourced from published standards (**eTable 1 (b)**). For food challenges, we assumed staff ratios of 2 nurses: 3 patients: 1 doctor. Doctors are on-call and their time was costed in full for food challenges. Staff ratios are summarized in **eTable 1 (c)**.

eTable 1 (a) Micro-costing of the treatment

	Quantity per patient per visit	Unit	On cost
Screening (1 clinic visit in total)			
Nurse time for screening questions	2	Hour	25%
Doctor time preparing anaphylaxis action plan	5	Minute	25%
Screen test kit (biobank pathology skin prick)	1	Unit	0
Adrenaline autoinjector Junior two per unit (relevant for 50% of patients as patients with peanut allergy should have an adrenaline injector available regardless of the trial)[a]	1	Unit	0
Rush/Up dosing (1 clinic visit in total)			
Doctor time (1 doctor: 3 patient)[b]	8	Hour	25%
Nurse time (1 nurse: 3 patients)[c]	6	Hour	25%
PPOIT product	1	Unit	0
Buildup phase (16 clinic visits in total)			
Doctor time (1 doctor: 3 patients)[d]	2.5	Hour	25%
Nurse time (1 nurse: 3 patients)	2.5	Hour	25%
PPOIT product per visit	1	Unit	0
Nurse time on-call support after each visit (relevant for 10% of patients)[e]	10	Minute	25%
Maintenance phase (10 months in total and only visit clinic if skipped dose; relevant for 7% of patients)[f]			
Doctor time (1 doctor: 1 patient)	0.75	Hour	25%
Nurse time (1 nurse: 1 patient)	0.75	Hour	25%
PPOIT product per two weeks (22 units over 10 months)	1	Unit	0
Food challenge, allergic or desensitized			
Doctor time (1 doctor: 3 patients)	0.5	Day[g]	25%
Nurse time (2 nurses: 3 patients)	0.5	Day[g]	25%
Pathology	1	Unit	0
Food challenge, remission			
Doctor time (1 doctor: 3 patients)	0.5	Day[g]	25%
Nurse time (2 nurses: 3 patients)	0.5	Day[g]	25%
Pathology	1	Unit	0
On-call support during food challenges (on demand; relevant for 10% of patients)			
Nurse time for one phone call	10	Minute	25%

[a]50% was assumed as patients with peanut allergy should have an adrenaline injector available regardless.

[b]1 doctor available in the vicinity for 3 patients; each patient needs a doctor to be available for 8 hours.

[c]1 nurse with 3 patients; each patient needs a nurse to be available for 6 hours.
[d]Doctors are on call and can carry on with other duties in the meantime. We thus assumed that only two thirds of the time was actually directed to PPOIT activities during the buildup phase. This was only applicable to the buildup phase where fewer patient and medical staff activities were observed.
[e]Assuming 10% of patients may need support and 10 minutes per call based on nurse experience.
[f]7% was assumed based on the trial observations where 4 patients per two weeks may need to have a clinic visit.
[g]7.25 hours per day were costed.

eTable 1 (b) Unit cost

	Unit cost	Data source
Staff cost		
Doctor, hourly	$125.1	Medical Specialists Enterprise Agreement, Year 1 specialist
Nurse, hourly	$37.6	Public Sector Nurses/Midwives Enterprise Agreement, Year 3 nurse
Doctor and nurse overhead	25%	Royal Children's Hospital
Medical supply and care		
PPOIT product, per two-week	$30	Probiotic and peanut powder. Probiotic price was assumed based on the over-the-counter price of for children (probiotic $10 per two-week; $20 per bottle with 30 capsules). Peanut powder price was assumed to be $20 per two-week based on the WHO Model List of Essential Medicines[a] ($1 per daily dose), applying a 40% monopoly premium[b] thus approximately $1.4 per daily dose.
Adrenaline autoinjector, two per pack	$158.78	Pharmaceutical Benefits Scheme (PBS) Australia
Pathology initiation	$2.4	Pharmaceutical Benefits Scheme (PBS) Australia
Skin prick testing	$40.05	Medicare Benefits Schedule (MBS) Australia, item 12003
Blood test, peanut sIgE	$26.8	Medicare Benefits Schedule (MBS) Australia, item 71079

[a]see "Hill AM, Barber MJ, Gotham D. Estimated costs of production and potential prices for the WHO Essential Medicines List. BMJ Global Health. 2018;3(1):e000571" for reference.

[b]see "High Generic Drug Prices and Market Competition. Annals of Internal Medicine. 2017;167(3):145-151" for reference.

eTable 1 (c) Number of PPOIT participants at each phase, and medical staff ratio

	Patient number or %	Staff ratio
Screening		
Patients screened, number	96	
Not eligible	17	
Did not participate	17	
Patients enrolled, number	62	
Rush phase		
Doctor to patient ratio		1:3
Nurse to patient ratio		1:3
Drop out	0	
Build up phase of 8 months, 16 visits		
Doctor to patient ratio		1:3
Nurse to patient ratio		1:3
Drop out during build up	5	
Maintenance phase of 10 months, visit by demand		
Patients needing to come in during maintenance, %	7.0%	
Doctor to patient ratio		1:1
Nurse to patient ratio		1:1
Drop out during maintenance	0	
End of trial		
Drop out after treatment before food challenge, number	1	
Patients at the end of the trial, number	56	
% completed the desensitization food challenge	100%	
% completed the remission food challenge	89%	
Food challenge		
Doctor ratio during food challenge		1:3
Nurse ratio during food challenge		2:3
Follow-up		
Patients at 4-year follow-up, number	48	

eTable 2 Unit cost applied for adverse events

	Unit cost ($)	Source
Hospital inpatient episode		
Asthma	1711	National Hospital Cost Data Collection, round 23
Dental surgery under general anaesthetic	1628	National Hospital Cost Data Collection, round 23
Infections	1514	National Hospital Cost Data Collection, round 23
Bone and joint injuries	1303	National Hospital Cost Data Collection, round 23
Abdominal Pain	1166	National Hospital Cost Data Collection, round 23
ED visit		
Admitted stay	965	National Hospital Cost Data Collection, round 22
Non-admitted stay	472	National Hospital Cost Data Collection, round 22
Ambulance		
Treatment without transport	546	Ambulance Victoria fee schedule 2019-20
Out of hospital medical care		
GP	38.75	Medicare Benefits Schedule Book
Out of hospital pharmaceutical care		
Aerius antihistamine	14.99	Over-the-counter price
Antibiotics	17.8	Over-the-counter price
Cetirizine	12.99	Over-the-counter price
Chlorsig	7.5	Over-the-counter price
Claratyne	10.99	Over-the-counter price
EpiPen (adrenaline autoinjector)	158.78	Pharmaceutical Benefits Scheme (PBS) Australia
Erythromycin	20.16	Over-the-counter price
FESS	10.49	Over-the-counter price
Flixotide	19.49	Over-the-counter price
Hydrocortisone acetate	17.3	Over-the-counter price
Ibuprofen	22.99	Over-the-counter price
Montelukast	18.81	Over-the-counter price
Nasonex	15.49	Over-the-counter price
Panadol	18.49	Over-the-counter price
Phenergen	11.49	Over-the-counter price
Prednisolone	19.28	Over-the-counter price
Rhinocort	18.99	Over-the-counter price
Salbutamol	33.38	Over-the-counter price
Ventolin plus spacer	33.38	Over-the-counter price
Zyrtec	12.99	Over-the-counter price