5.01 ADRENALINE (EPINEPHRINE), Nasal spray device 1 mg in 1 actuation, Nasal spray device 2 mg in 1 actuation, neffy®, Seqirus (Australia) Pty Ltd.

1 Purpose of submission

1.1 The Category 2 submission requested General Schedule Authority Required (Telephone/Online) listing for neffy® nasal spray, a new form of adrenaline (epinephrine), for the emergency treatment of acute severe allergic reactions in children or adults at significant risk of anaphylaxis.

1.2 Listing was requested on the basis of three separate economic analyses: a discrete choice experiment (DCE) with willingness-to-pay (WTP) estimates, a cost-minimisation approach (CMA) and a cost-consequence analysis (CCA), to support the requested price premium for neffy over adrenaline autoinjectors (AAIs). The price premium was requested based on the claim that neffy offers a superior acceptability profile over AAIs.

Table 1: Key components of the clinical issue addressed by the submission

Component	Description
Population	Subjects with history of Type 1 allergy/at significant risk of anaphylaxis
Intervention	Intranasal adrenaline/adrenaline nasal spray 1 mg or 2 mg (neffy)
Comparator	PBS-listed adrenaline auto-injectors: • EpiPen Jr® 150 microgram/0.30 mL injection, pen device • EpiPen® 300 microgram/0.30 mL injection, pen device • Anapen® 500 microgram/0.30 mL injection, pen device
Outcomes	Pharmacodynamic: blood pressure, heart rate Pharmacokinetic: AUC, Cmax, Tmax Clinical: resolution of anaphylaxis
Clinical claim	In patients at risk of anaphylaxis, neffy intranasal spray is noninferior in terms of effectiveness and safety for the emergency treatment of acute allergic reaction compared with adrenaline auto-injectors and has a superior acceptability profile.

Source: Table 1.1.1, p28 of the submission.
AUC = area under curve; Cmax = maximum observed concentration; Tmax = time to observed Cmax.

2 Background

Registration status

2.1 Neffy was Therapeutic Goods Administration (TGA) registered on [redacted] 2025 and listed on the Australian Register of Therapeutic Goods on 8 December 2025 for the emergency treatment of type I allergic reactions, including anaphylaxis, in adults and children aged 4 years and older and weighing 15 kg or greater. The requested

restriction for neffy was broader than the approved TGA indication (refer to paragraph 3.2 for more details).

Previous PBAC consideration

2.2 This was the first submission requesting Pharmaceutical Benefits Scheme (PBS) listing for neffy.

2.3 At the time of this submission, the following AAIs were listed on the PBS for acute allergic reaction with anaphylaxis: adrenaline 0.15 mg/0.3 mL (EpiPen® Jr and Adrenaline Jr Viatris®), adrenaline 0.30 mg/0.3 mL (EpiPen® and Adrenaline Viatris®), and adrenaline 0.5 mg/0.3 mL (Anapen® 500). Anapen Jr 150 and Anapen 300 have been discontinued[1], and Anapen 500 was out of stock, with supply expected to resume in May 2026[2].

For more detail on PBAC's view, see section 7 PBAC outcome.

3 Requested listing

3.1 The submission requested the listing of neffy under the same circumstances as currently PBS-listed AAIs. To support this, the submission proposed minor amendments to Caution and Note wording to ensure the listing is agnostic to the type of adrenaline device or route of administration. The submission's suggested additions are in italics and deletions are in strikethrough.

[1] Australian Society of Clinical Immunology and Allergy (ASCIA), (2024), Product Update - Anapen® Adrenaline (Epinephrine) Injector Devices-, https://www.allergy.org.au/about-ascia/info-updates/product-update-anapen-r-adrenaline-injector-devices

[2] Department of Health and Aged Care, (2025), ANAPEN 500 adrenaline (epinephrine) 500 micrograms/0.3 mL solution for injection pre-filled syringe (auto-injector) - medicine shortage information, Medicine shortage reports database, Therapeutic Goods Administration, https://apps.tga.gov.au/Prod/msi/Search/Tradename//337516

MEDICINAL PRODUCT medicinal product pack	Dispensed Price for Max. Qty	Max. qty packs	Max. qty units	№.of Rpts	Available brands
ADRENALINE (EPINEPHRINE)					
Pack containing two (2) blister packages each with a single-dose nasal spray containing adrenaline (epinephrine) 1 mg/actuation, 2 x 1 actuation pump packs	$[redacted]	1	2	0	neffy Seqirus Pty Ltd
Pack containing two (2) blister packages each with a single-dose nasal spray containing adrenaline (epinephrine) 2 mg/actuation, 2 x 1 actuation pump packs	$[redacted]	1	2	0	neffy Seqirus Pty Ltd
Category / Program: General Schedule					
Prescriber type: ☐Dental ☒Medical Practitioners ☒Nurse practitioners ☐Optometrists ☐					
Restriction type: ☒Authority Required (telephone/online PBS Authorities system)					
Caution: ~~Non-Anapen and Anapen, EpiPen and Jext products~~ *Products for the emergency administration of adrenaline* have different administration techniques. These products should not be prescribed to the same patient without training in their use. Pharmacists should ensure that patients are educated regarding the product differences upon dispensing.					
Note: The ~~auto-injector~~ *adrenaline device* should be provided in the framework of a comprehensive anaphylaxis prevention program and an emergency action plan including training in recognition of the symptoms of anaphylaxis and the use of the device. (For further information see the Australasian Society of Clinical Immunology and Allergy website at www.allergy.org.au.)					
Indication: Acute allergic reaction with anaphylaxis					
Treatment Phase: Initial sole PBS-subsidised supply for anticipated emergency treatment					
Clinical criteria:					
Patient must have been assessed to be at significant risk of anaphylaxis by, or in consultation with a clinical immunologist; or					
Patient must have been assessed to be at significant risk of anaphylaxis by, or in consultation with an allergist; or					
Patient must have been assessed to be at significant risk of anaphylaxis by, or in consultation with a paediatrician; or					
Patient must have been assessed to be at significant risk of anaphylaxis by, or in consultation with a respiratory physician.					
Prescribing Instructions: The name of the specialist consulted must be provided at the time of application for initial supply.					
Restriction type: ☒Authority Required (telephone/online PBS Authorities system)					
Indication: Acute allergic reaction with anaphylaxis					
Treatment Phase: Initial sole PBS-subsidised supply for anticipated emergency treatment					
Clinical criteria:					
Patient must have been discharged from hospital or an emergency department after treatment with adrenaline (epinephrine) for acute allergic reaction with anaphylaxis.					
Restriction type: ☒Authority Required (telephone/online PBS Authorities system)					
Indication: Acute allergic reaction with anaphylaxis					
Treatment Phase: Continuing sole PBS-subsidised supply for anticipated emergency treatment					
Clinical criteria:					
Patient must have previously been issued with an authority prescription for this drug.					

3.2 The requested PBS restriction does not include any age criteria, which is inconsistent with the TGA-approved indication limiting neffy to adults and children aged 4 years and older who weigh at least 15 kg. The Pre-Sub-Committee Response (PSCR) stated that the requested restriction for neffy is consistent with existing restrictions for AAIs, noting that age restrictions are addressed in the Product Information (PI) and the Australasian Society of Clinical Immunology and Allergy (ASCIA) guidelines. The Sub-Committees noted that the TGA Delegate's Overview raised concerns regarding its use in younger children, noting insufficient evidence that neffy achieves pharmacokinetic (PK) equivalence to parenteral adrenaline (i.e., AAIs) in children under 4 years, likely due to immature nasal anatomy. Additionally, there is inadequate evidence that non-medically trained individuals can administer neffy effectively in this age group, given practical challenges such as nasal congestion, vomiting, agitation, and anatomical limitations during acute anaphylaxis. The Delegate further noted that while intranasal delivery may offer advantages for self-administration in older children (7 to 9 years), this benefit does not extend to younger children (under 4 years of age), for whom self-administration is inappropriate (TGA Delegate's Overview, 2025).

3.3 The Sub-Committees noted that while dosing for neffy is weight based (15–30 kg and >30 kg), the absence of an age-based restriction may result in broader use than is supported by the TGA indication and the available clinical evidence. A child weighing 15 kg could be as young as 21 months of age based on the 99th percentile for weight (TGA Delegate's Overview, 2025). Therefore, based on advice in the TGA Delegate's Overview (see paragraph 3.2) and to be consistent with the approved TGA indication, the Sub-Committees considered it would be appropriate to restrict use to patients aged 4 years and over who weigh at least 15 kg.

3.4 The submission requested that neffy be considered equivalent to AAIs at the pharmacy level for the purposes of substitution (i.e., 'a'-flagged in the Schedule) for the treatment of acute allergic reaction with anaphylaxis. The submission stated that such equivalence would support continuity of supply during shortages and reduce the risk of patients being unable to access adrenaline. The submission further noted that differences in administration techniques between neffy and AAIs could be safely managed through comprehensive patient education materials. This approach aligns with the current PBS restriction for AAIs, which permits brand substitution under Section 101(4AACD) of the *National Health Act 1953*.

3.5 The submission proposed that the Early Supply Rule should not apply to neffy, consistent with the approach for AAIs, noting that both products are intended for recurrent, episodic use in the management of anaphylaxis. The submission highlighted the clinical imperative to maintain uninterrupted access for patients at risk of anaphylaxis. The evaluation considered that this was reasonable.

For more detail on PBAC's view, see section 7 PBAC outcome.

4 Population and disease

4.1 Anaphylaxis is a severe and potentially life-threatening allergic reaction that occurs rapidly after allergen exposure. In Australia, age-standardised anaphylaxis event rates increased from 70.3 per 100,000 population in 2010 to 113.9 in 2019, before decreasing to 76.5 per 100,000 in 2020[3]. The most common triggers of anaphylaxis are foods, insect stings and medications[4]. If untreated, anaphylaxis can be fatal. Between 1997 and 2013, the Australian Bureau of Statistics reported 324 deaths from anaphylaxis[5], although this may be an underestimate due to limited clinical recognition.

4.2 Adrenaline is the first-line treatment for anaphylaxis. It alleviates symptoms by reducing airway mucosal oedema, inducing bronchodilation, producing vasoconstriction, and increasing cardiac contractility. The Australasian Society for Allergy and Clinical Immunology (ASCIA) recommends immediate administration of adrenaline as soon as signs or symptoms occur, at a dose of 0.01 mg per kg (maximum 0.5 mg per dose) via intramuscular (IM) injection into the outer mid-thigh[4].

4.3 The submission stated that adrenaline remains underused in anaphylaxis, and delayed administration is associated with poorer clinical outcomes. A chart review study conducted in the United States (2004-2019) found that only 61% patients with food-induced anaphylaxis received adrenaline, with approximately 30% treated only after arrival at the emergency department. Additionally, early administration was associated with a lower risk of hospitalisation compared to delayed administration (17% vs 43%)[6].

4.4 Two qualitative studies, a poster presentation[7] and a lived experience report[8], identified several barriers to adrenaline use with AAIs, including needle hesitancy, anxiety, portability, short shelf-life, and sensitivity to temperature fluctuations. Among adults, the primary barrier to access was device unavailability. In contrast, parents and community responders were constrained by gaps in knowledge, while barriers for children were driven by emotional factors, including fear of needles and

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[3] Stiles SL, Sanfillipo FM, Loh R, et al. (2023), 'Contemporary trends in anaphylaxis burden and healthcare utilisation in Western Australia: A linked data study', *World Allergy Organ J*, 16(9):100818.

[4] Australasian Society of Clinical Immunology and Allergy (ASCIA), (2024) 'ASCIA Guidelines - Acute Management of Anaphylaxis' https://www.allergy.org.au/images/ASCIA_HP_Guidelines_Acute_Management_Anaphylaxis_2024.pdf

[5] Mullins RJ, Wainstein BK, Barnes EH, et al. (2016), 'Increases in anaphylaxis fatalities in Australia from 1997 to 2013', *Clin Exp Allergy*, 46(8):1099-110.

[6] Fleming JT, Clark S, Camargo Jr CA, et al. (2015), 'Early Treatment of Food-Induced Anaphylaxis with Epinephrine Is Associated with a Lower Risk of Hospitalization', *J Allergy Clin Immunol Pract*, 3(1):57-62.

[7] Tang ML, Said M, Joshi P, et al. (2025), 'Identifying Australian Unmet Needs in Timely Adrenaline Administration', Annual Conference of the Australasian Society of Clinical Immunology and Allergy (ASCIA), Brisbane (Poster P103).

[8] HTAnalysts, (2025), 'Lived experience report: Severe allergies with a risk of anaphylaxis', Report prepared for CSL Sequirus.

difficulties with correct device use. The Sub-Committees noted that adolescents were a key demographic that experienced emotional barriers to appropriate use of AAIs, as evidenced in the survey from Tang et al. 2025.

4.5 The submission stated that neffy addresses the limitations of AAIs through its needle-free intranasal administration, intuitive use, compact size, and improved portability and temperature stability, which may improve usability and reduce unmet needs in anaphylaxis management. While DCEs represent robust methods for estimating stated preferences, the DCE presented in the submission estimates stated WTP for these features (refer to paragraph 6.37), and it remains uncertain whether stated WTP fully reflects actual WTP. The Sub-Committees additionally noted that it was unclear to what extent valued differences in pack attributes lead to changes in clinical outcomes for patients.

4.6 Neffy is a ready-to-use, single dose intranasal spray delivering either 1 mg or 2 mg adrenaline for the emergency treatment of anaphylaxis. Each device administers one dose, must be discarded immediately after use, and should not be primed. The recommended dosage for patients weighing 15 to <30kg is one spray of neffy 1 mg administered into one nostril, whereas neffy 2 mg is recommended for patients weighing ≥30 kg.

For more detail on PBAC's view, see section 7 PBAC outcome.

5 Comparator

5.1 The submission appropriately nominated PBS-listed AAIs (EpiPen, EpiPen Jr., Adrenaline Viatris, Adrenaline Viatris Jr., and Anapen) as the main comparators. The Sub-Committees considered these to be appropriate comparators.

5.2 Of these, EpiPen was identified as the predominant brand of adrenaline supplied in Australia. The active ingredient, adrenaline, is identical in both the proposed medicine (neffy) and the nominated comparator (EpiPen), the only difference is the route of administration, with neffy delivered intranasally and EpiPen administered by IM injection.

5.3 In the context of the cost-minimisation approach taken by the submission, a further consideration for PBAC is that, under Section 101(3B) of the *National Health Act 1953*, when the proposed medicine is substantially more costly than an alternative therapy, the committee cannot make a positive recommendation unless it is satisfied that, for some patients, the proposed medicine provides a significant improvement in efficacy and/or reduction of toxicity over the alternative therapy. If the committee is so satisfied, it must make a statement to this effect.

For more detail on PBAC's view, see section 7 PBAC outcome.

6 Consideration of the evidence

Sponsor hearing

6.1 There was no hearing for this item.

Consumer inputs

6.2 The PBAC noted and welcomed the input from a health care professional (1) and organisations (6) via the Office of Health Technology Assessment Consultation Hub. The PBAC noted that no individual consumers provided input.

6.3 Individual input was provided by a clinical nurse consultant in paediatric allergy and anaphylaxis education. The input noted that this form of adrenaline (epinephrine) offers an alternative needle-free intranasal delivery method, which is especially important for consumers who have a fear of needles or are unable to use an adrenaline injector due to lack of strength. Although the small size of the device may result in accidental loss, the compact size of this form of adrenaline may mean some people are more likely to carry it, which supports earlier access to adrenaline and timely treatment of anaphylaxis. The input recognised real world safety data for this form of adrenaline is still developing.

6.4 The following organisations provided inputs: the National Allergy Council, the Australasian Society of Clinical Immunology and Allergy (ASCIA), Allergy & Anaphylaxis Australia (A&AA), National Paediatric Medicines Forum (NPMF), Pharmaceutical Society of Australia and National Aboriginal Community Controlled Health Organisation (NACCHO). The inputs noted the nasal spray form of adrenaline is reported to have comparable effectiveness to the autoinjectors. Given there is currently only one brand of adrenaline device available in Australia (EpiPen®) due to product supply issues with the other PBS listed device, having another adrenaline device accessible to people at risk of anaphylaxis is important given delayed treatment with adrenaline can result in fatal anaphylaxis.

6.5 The inputs noted the smaller size of the device would be convenient, discrete and more portable for patients. The National Allergy Council noted the smaller size of the device may increase the likelihood of the device, and potentially two devices being carried, particularly by teens and young adults where adrenaline device carriage has been shown to be an issue (National Allergy Council unpublished survey data). Other perceived benefits of neffy compared to the autoinjectors that were noted in the inputs included removal of the risk of accidental needlestick injury for patients and carers, easier for patients and carers to learn how to use a nasal spray device and greater acceptance by patients with reservations (anxiety) or a phobia to the use of injectors and injections. The inputs also noted neffy is more stable to temperature variations and has a longer shelf life, resulting in less frequent replacement, reducing cost burden for both the individual and the health system. NACCHO, the national peak body representing 145 Aboriginal Community Controlled Health Organisations across the country, noted this will be of particular benefit for some Aboriginal and Torres

Strait Islander peoples who may live in some of the most extreme environments in Australia and can be at risk of insecure housing. NACCHO also noted the nasal device is easy to use, with growing familiarity amongst health professionals who have supplied nasal naloxone in the same type of device. However, there is a risk that neffy could be mixed up with other nasal medications such as Nyxoid. This could be avoided by using different standardized colours whereby neffy could be packaged in similar bright orange to an Epipen case.

6.6 Most inputs noted that education and training of how to use the nasal device will be required. National Allergy Council noted that training resources will need to be updated in schools and early children's and education and care (ECEC) settings to include the neffy adrenaline device now that it has received registration by the TGA. ASCIA, the peak professional body of clinical immunology/allergy specialists in Australia and New Zealand, noted it has already included neffy adrenaline nasal spray devices in ASCIA Action Plans for Anaphylaxis and other ASCIA anaphylaxis resources that have been recently updated. NPMF, a collaboration between participating paediatric health care facilities across Australia endorsed by Children's Healthcare Australasia, noted paediatric sites are keen to use neffy for paediatric patients with severe allergic reactions as an alternative to autoinjector pens for the benefits noted above. Most sites are participating in an early access programme to enable immunologists, allergy clinicians and patients to familiarise themselves with the product in preparation for the PBS listing as it will benefit all children with life threatening allergies with easier access in the community particularly for children in rural and remote areas.

6.7 The PBAC noted that this advice was supportive of the evidence provided in the submission.

Clinical studies

6.8 In the absence of a head-to-head trial, the submission relied on two pharmacokinetic and pharmacodynamic (PK/PD) studies and a clinical study to demonstrate that neffy was non-inferior to AAIs in terms of effectiveness and safety:

- EPI 15 (N=42) - a two-part (single and repeat dose), randomised, crossover PK/PD study in healthy adult volunteers comparing neffy 2 mg with EpiPen 0.3 mg.
- EPI 10 (N=80) - a phase I, single-dose, dose-optimisation PK/PD study in children (aged 4 to <18 years) with type 1 systemic allergies, evaluating neffy at doses of 0.65 mg, 1 mg and 2 mg.
- EPI JP03 (N=15) - a phase III, single-dose clinical study investigating the efficacy and safety of neffy 1 mg and 2 mg in children (aged 6-17 years) with grade ≥2 anaphylactic symptoms induced by an oral food challenge (OFC).

6.9 Additionally, supportive evidence from EPI 07, EPI 12, EPI JP01 studies and five-real world evidence unpublished case reports were provided in the submission.

6.10 Details of the key studies presented in the submission are provided in Table 2.

Table 2: Studies and associated reports presented in the submission

Trial ID	Protocol title/ Publication title	Publication citation
EPI 15	A Two-Part, Six-Period, Six-Treatment, Crossover Study of the Pharmacokinetics of Epinephrine After Single and Repeat Administration of Intranasal ARS-1 or Epinephrine Injection to Healthy Volunteers (EPI 15). Casale TB, Ellis AK, Nowak-Wegrzyn A et al. Pharmacokinetics/pharmacodynamics of epinephrine after single and repeat administration of neffy, EpiPen, and manual intramuscular injection.	Clinical Study Report 2022 J Allergy Clin Immunol. 2023;152(6):1587-1596.
EPI 10	A Single-Period, Single-Dose Study of the Pharmacokinetics and Pharmacodynamics of Epinephrine After Administration of Intranasal ARS-1 to Paediatric Subjects with Systemic Allergies (EPI 10). Li H, Fleischer D, Lockey R et al. A Single-Period, Single-Dose Study of the Pharmacokinetics of Epinephrine After Administration of Intranasal ARS-1 to Paediatric Subjects with a History of Systemic Allergic Reaction.	Clinical Study Report-Amendment 2 2024 J Allergy Clin Immunol. 2023; 151(2):AB3
EPI JP03	A Phase III Study Evaluating Efficacy and Safety of Adrenaline of ARS-1 in Patients with Food Allergies. Ebisawa M, Lowenthal R, Tanimoto T et al. neffy, epinephrine nasal spray, Demonstrates a Positive Efficacy and Safety Profile for the Treatment of Allergic Reactions in Paediatric Patients at-Risk of Anaphylaxis: Phase 3 Study Results.	Clinical Study Report 2024 J Allergy Clin Immunol. 2024; 153(2):AB371

Source: Table 2.2.1, pp69-70 of the submission.

6.11 The key features of the included evidence are summarised in Table 3.

Table 3: Key features of the included evidence

Trial	N	Design/ duration	Risk of bias	Patient population	Outcome(s)
neffy 2 mg versus IM adrenaline 0.3 mg					
EPI 15	42	Two-Part (single- and repeat-dose), crossover PK/PD study	High	Healthy adult volunteers (>18-55 years)	PD: SBP, DBP, HR PK: Cmax, Tmax, AUClast Safety
neffy					
EPI 10	80 n=12 (neffy 0.65 mg)[a] n=21 (neffy 1 mg)[a] n=26 (neffy 1 mg)[b] n=21 (neffy 2 mg)[b]	Phase I, single-dose PK/PD study	High	Children aged 4 to <18 years with significant systemic (type 1) allergies to food, insects, venom or drugs.	PD: SBP, DBP, HR PK: Cmax, Tmax, AUClast Safety
EPI JP03	15 n=6 (neffy 1 mg) n=9 (neffy 2 mg)	Phase III, OL single-dose study	High	Children aged 6-17 years with Grade ≥2 anaphylactic symptoms induced by an OFC.	Primary: Change from baseline in improvement rate of main symptoms at 15 minutes post-dose Secondary: SBP, DBP, HR, safety

Source: Table 2.4.4, p78, Section 2.4.1, p74, Section 2.5.1, p90; Table 2.5.4, p93; Section 2.5.3, pp97-98 of the submission.
AUClast = Area under the plasma concentration-time curve from time-zero to the time of the last quantifiable concentration; Cmax = maximum plasma concentration; DBP = diastolic blood pressure; HR = heart rate; IM = intramuscular; n = number of participants reporting data; N = total participants in group; OFC = oral food challenge; OL = open label; PD = pharmacodynamic; PK = pharmacokinetic; SBP = systolic blood pressure; Tmax = time of the maximum plasma concentration.
[a] participants weighing 15 to <30 kg
[b] participants weighing ≥30 kg

6.12 The submission stated that given the well-established pharmacological action of adrenaline, the TGA considered that the comprehensive PK/PD data from the neffy clinical study program provided sufficient evidence of clinical efficacy. The PSCR stated EPI JP03 to be appropriate evidence to demonstrate neffy's clinical effectiveness and noted additional evidence from case reports and emerging real-world data to support the submission. The Sub-Committees noted the only study evaluating neffy's clinical outcomes (EPI JP03) was a non-randomised, open-label study with only 15 Japanese children undergoing provoked OFC reactions, which had a high risk of bias, limiting its generalisability to the Australian population. The Sub-Committees also noted the additional case reports and real-world data were unpublished with limited methodological information, with potential for biases.

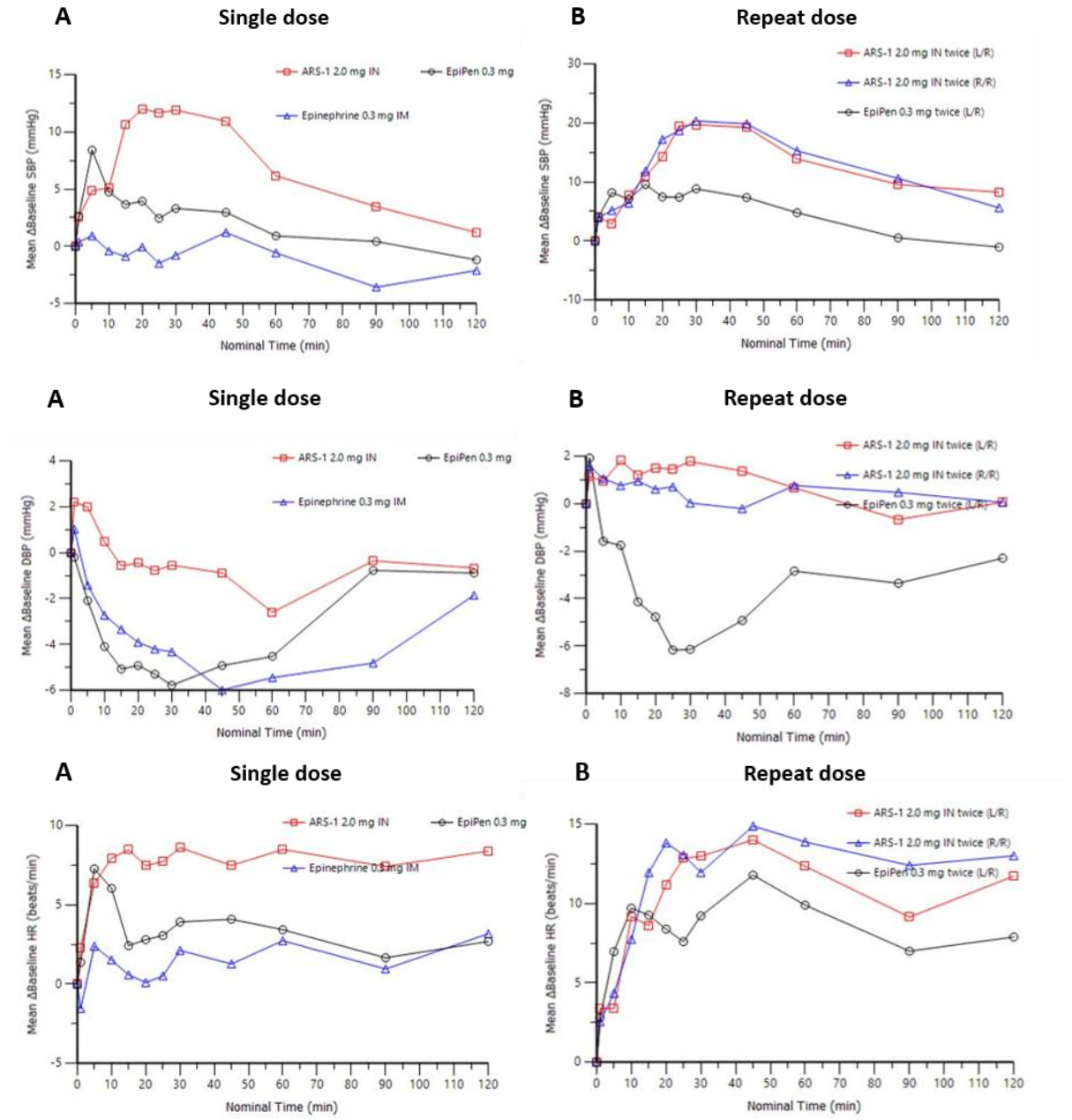
Comparative effectiveness

EPI 15

6.13 In Part One of EPI 15, healthy adults volunteers were randomised and crossed-over to receive a single dose of neffy 2 mg and EpiPen 0.3 mg, with a 24-hour washout period between each treatment. In Part Two of EPI 15, participants received the following treatments: two doses of neffy 2 mg, both in the right nares (R/R); two doses of neffy 2 mg, one in the left and one in the right nares (L/R); and two doses of EpiPen 0.3 mg in the left and right thigh, with every dose administered 10 minutes apart. The primary endpoints were pharmacodynamic (PD) parameters (blood pressure and heart rate [HR]) and PK profiles.

6.14 The mean change from baseline in systolic blood pressure (SBP), diastolic blood pressure (DBP) and HR over time with single dose in Part One, and repeat dose in Part Two of EPI 15 are presented in Figure 1.

Figure 1: Mean change from baseline in SBP, DBP and HR over time (top to down panels) with (A) single dose in Part One, and (B) repeat dose in Part Two of EPI 15 (primary population)



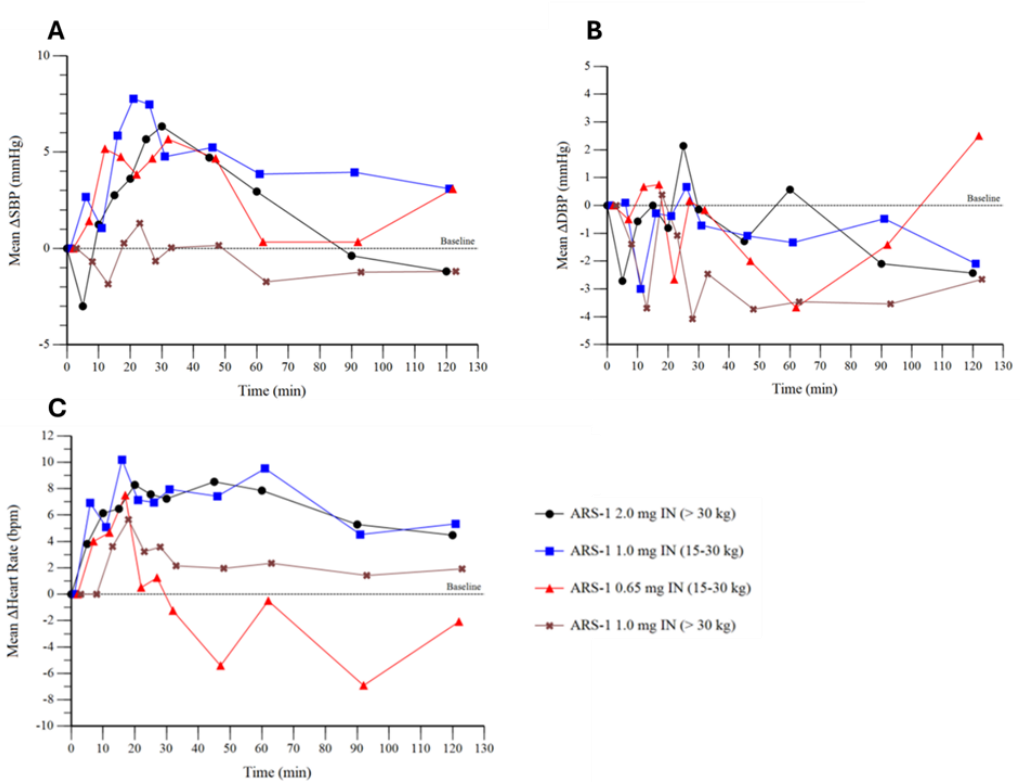
Source: Figure 2.4.1, p80; Figure 2.4.2, p81; Figure 2.4.3, p82 of the submission.
ARS-1 = intranasal adrenaline; DBP = diastolic blood pressure; EpiPen = adrenaline autoinjector; HR = heart rate; IM = intramuscular; IN = intranasal; L = left; R = right; SBP = systolic blood pressure.
Note: Epinephrine 0.3 mg IM using syringe and needle, indicated by the black line was excluded from the analysis in the submission.

6.15 In EPI 15, single and repeat doses of neffy 2 mg in healthy adult volunteers resulted in comparable PD outcomes, compared to EpiPen 0.3 mg.

EPI 10

6.16 The mean change from baseline in (A) SBP, (B) DBP and (C) HR over 120 minutes in EPI 10 are presented in Figure 2.

Figure 2: Mean change from baseline in in (A) SBP, (B) DBP and (C) HR over 120 minutes in EPI 10.



Source: Figure 2.5.1, p96 of the submission
ARS-1 = intranasal adrenaline; bpm = beats per minute; DBP = diastolic blood pressure; HR = heart rate; IN = intranasal; SBP = systolic blood pressure.

6.17 In EPI 10, among children with type 1 systemic allergies, the PD effects of neffy 1 mg in children 15-30 kg were comparable to that of 2 mg in children ≥30 kg.

6.18 The PK profile of neffy 2 mg and EpiPen in adults (EPI 15), and of neffy 1 mg and 2 mg in children (EPI 10) are summarised in .

~~6.18~~6.20 Table 4.

Table 4: Pharmacokinetic profiles in adult (EPI 15) and children (EPI 10)

Treatment	N	Tmax (min) median (range)	Cmax (pg/mL) Mean (%CV)	AUClast (min*pg/mL) Mean (%CV)
EPI 15				
Single dose				
Neffy 2 mg	42	30.0 (6.0-150)	481 (76.0)	43500 (69.4)
EpiPen 0.3 mg	35	8.0 (2.0-45.0)	612 (58.4)	30900 (37.1)
Repeat dose				
Neffy 2 mg (L/R)	36	30.0 (6.0-150)	805 (69.2)	72500 (61.4)
Neffy 2 mg (R/R)	38	30.0 (12.0-150)	946 (74.0)	85000 (61.6)
EpiPen 0.3 mg (L/R)	37	15.0 (0-360)	719 (43.3)	49900 (38.7)
EPI 10				
Neffy 1 mg[a]	21	20.0 (2.5-61.5)	651 (64.2)	35100 (57.3)
Neffy 2 mg[b]	21	29.5 (2.9-120)	690 (100)	40200 (92.8)

Source: Table 3, p8; Table 5, p10 of the TGA Delegate's Overview
AUClast = Area under the plasma concentration-time curve from time-zero to the time of the last quantifiable concentration; Cmax = maximum plasma concentration; CV = coefficient of variance; L = left; N = total participants in group; pg/mL = picogram per millilitre; R = right; TGA = Therapeutic Goods Administration; Tmax = time of the maximum plasma concentration.
[a] participants weighing 15 to <30 kg
[b] participants weighing ≥30 kg

~~6.19~~6.21 The TGA Delegate's Overview stated that the PK parameters of neffy 1 mg and 2 mg in adults were in between that of currently registered injectable adrenaline formulation. In children aged over 4 years and weighing 15–<30 kg, PK parameters for neffy 1 mg were similar to or higher than those for neffy 2 mg in children ≥30 kg. No data were available for children under 4 years, and subjects with nasal abnormalities, prior surgery, injury, or mucosal disorders were excluded from all studies (TGA Delegate's Overview, 2025).

~~6.20~~6.22 The TGA Delegate was satisfied that neffy demonstrated efficacy based on PK equivalence to parenteral adrenaline in patients >30kg (approximately nine years and older); however, such evidence was lacking in children <4 years given that the PK profile of neffy is likely different from that of parenteral adrenaline due to immature nasal anatomy in children <4 years (TGA Delegate's Overview, 2025). Notably, the intra- and inter-individual variation in the absorption of adrenaline were significant across the pivotal studies including EPI 15 and EPI 10 (TGA Delegate's Overview, 2025). Such variability was anticipated given that the PK profile of adrenaline is known to be highly variable and the optimal plasma concentration of adrenaline to treat an episode of anaphylaxis was unknown[9,10].

EPI JP03

~~6.21~~6.23 EPI JP03 included 15 patients with Grade ≥2 anaphylactic symptoms induced by an OFC. The results showed that five (83.3%) out of six patients who received neffy 1 mg

[9] Moss J, Jani Y, Edwards B, et al. (2021), 'Pharmacokinetic and pharmacodynamic evidence of adrenaline administered via auto-injector for anaphylactic reactions: A review of literature', *Br J Clin Pharmacol* 87(3):816-824
[10] Turner PJ, Muraro A, and Roberts G, (2022), 'Pharmacokinetics of adrenaline autoinjectors', *Clin Exp Allergy* 52(1):18-28

and six (66.7%) out of nine patients who received neffy 2 mg experienced improvement in symptoms of at least one grade.

6.226.24 Four patients (one patient from neffy 1 mg group and three patients from neffy 2 mg group) did not show improvement of at least one grade within 15 minutes of treatment but they were assessed to show clinically meaningful improvement with no additional adrenaline treatment required. Only one patient was treated with standard treatment (i.e. adrenaline injection) due to a biphasic reaction that developed approximately three hours following neffy administration.

6.236.25 The EPI JP03 had several limitations, including a small sample size, lack of evidence for children under five years, use of an anaphylaxis grading system that was insensitive to minor differences in symptom severity, and its retrospective study design. The study did not include a treatment arm for comparison to AAIs.

Comparative harms

Safety profile in adults

6.246.26 According to the approved TGA Product Information (PI) for neffy, there were no very common adverse reactions (≥ 10%) observed following a single dose of neffy 2 mg in clinical trials. The most frequently reported adverse reactions occurred only after two 2 mg doses (4 mg total) and included throat irritation (18.8%), headache (17.6%), nasal discomfort (12.9%) and feeling jittery (10.6%). These safety data were derived from four clinical pharmacology studies (EPI 15, EPI 17, EPI 16 and EPI 18) involving 175 healthy adults and adults with type I allergy without anaphylaxis.

6.256.27 The submission also presented comparative safety data from healthy adult volunteers in EPI15. All reported adverse events (AEs) were mild, with no deaths, serious AEs (SAEs) or discontinuation due to AEs. For single dose neffy 2 mg, the most common treatment-emergent treatment-related AEs were throat irritation (1.8%) and ocular discomfort (1.8%), while headache (1.8%) and injection site discomfort (1.8%) were reported with single dose EpiPen. With repeat dosing, neffy showed a slightly higher incidence of treatment-emergent treatment-related AEs compared with EpiPen: headache (10.3%) and rhinorrhoea (5.2%) for neffy 2 mg versus injection site pain (2.4%) for repeat dose EpiPen.

Safety profile in children

6.266.28 The submission presented the safety profile of neffy in children with type 1 allergies from EPI 10. Among participants weighing 15 kg to <30kg treated with neffy 1 mg, the most common treatment-emergent treatment-related AEs were respiratory disorders (42.9%), including nasal congestion, upper respiratory tract congestion, dry throat and nasal dryness. For participants weighing ≥30kg treated with neffy 2 mg, the most common treatment-emergent treatment related AEs were respiratory disorders (47.6%), such as nasal discomfort, intranasal paraesthesia and sneezing, as well as fatigue (9.5%) and feeling jittery (9.5%). The TGA Delegate' Overview stated that these AEs were consistent with local irritation of the airways or expected effects of adrenaline (TGA Delegate's Overview, 2025).

Benefits/harms

~~6.27~~6.29 A benefits and harms table is not presented as the submission made a claim of non-inferiority.

Clinical claim

~~6.28~~6.30 The Sub-Committees accepted the submission's claim that neffy is non-inferior in terms of effectiveness, and non-inferior but with different safety compared with AAIs, supported by PK/PD and safety data for patients aged 4 years and older who weighed more than 15 kgs. However, the claim of superiority in terms of patient acceptability was based on the patient preferences elicited from a DCE and was not supported by any direct comparative trial data to assess the relative effectiveness of neffy versus AAIs in improving health outcomes. The PSCR stated that the DCE quantified patients' preferences for neffy over EpiPen, supporting claims of superior acceptability and potential for improved health outcomes. The Sub-Committees noted that it remained unclear to what extent valued differences in pack attributes lead to changes in clinical outcomes for patients. However, it was possible there would be clinical benefits if there was increased appropriate/earlier use of adrenaline.

~~6.29~~6.31 The PBAC considered that the claim of non-inferior comparative effectiveness was reasonable.

~~6.30~~6.32 The PBAC considered that the claim of non-inferior but different comparative safety was reasonable.

Economic analysis

~~6.31~~6.33 The submission requested an approved ex-manufacturer price (AEMP) of $[redacted] for neffy, representing a [redacted]% increase over the EpiPen price of $67.19. The requested premium was not derived directly from any of the WTP, CMA, or CCA approaches. Instead, it has been determined by the sponsor, with the economic analyses used to provide supportive justification. The PSCR stated that although the sponsor did not undertake economic analysis to determine the additional value of neffy in providing a further source of supply of self-administered adrenaline in Australia, clinicians and patients have clearly indicated that this is an important benefit of the availability of neffy. The Sub-Committees considered that the magnitude of any clinical benefit was uncertain and the extent of the requested price premium may not be reasonable.

~~6.32~~6.34 The primary analysis was a WTP estimate derived from a DCE quantifying consumer preferences for neffy's attributes. Two supplementary analyses were presented: a CMA based on reduced utilisation due to the extended shelf-life of neffy, and a CCA evaluating the potential reduction in post-anaphylaxis hospitalisations with the increased utilisation of neffy. The PBAC Guidelines (Version 5.0) specify that WTP should typically be presented as part of a supplementary cost-benefit analysis rather than as the primary basis of an economic evaluation. The PSCR stated that while the WTP analysis may be considered supplementary, its results support both the CMA and CCA economic evaluations submitted concurrently. While a cost-effectiveness analysis

is generally appropriate when applying for a price premium, the absence of robust comparative clinical outcome data and reliance on PK/PD evidence limit its validity in this case. Accordingly, the Sub-Committees considered a CMA may have been a more appropriate primary analysis, specifically one incorporating both the anticipated increase in neffy utilisation and the corresponding assumed reduction in hospitalisations compared with EpiPen.

6.336.35 The equi-effective doses for neffy and EpiPen are essentially a one-for-one substitution, based on the dosing schedule as specified in their respective PIs:

- EpiPen 0.3 mg/0.3 mL = neffy 2 mg/0.1 mL
- EpiPen 0.15 mg/0.3 mL = neffy 1 mg/0.1 mL

Discrete choice experiment

6.346.36 The submission commissioned a DCE to identify the attributes of adrenaline treatment devices most valued by consumers, estimate their relative importance, and quantify WTP for their preferred features. The Sub-Committees were of the view that the DCE was conducted broadly in line with good practice guidelines.

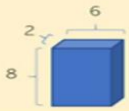
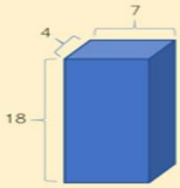
6.356.37 A summary of the DCE is presented in Table 5, and an example of a choice task where participants were asked to choose their preferred treatment is provided in Figure 3.

Table 5: Summary of DCE

Component	Summary
Design	Participants were presented with a series of hypothetical (but realistic) tasks involving choices between attributes of adrenaline delivery methods. The choice tasks included eight attributes: device size, number of devices per pack, administration method, shelf life, time to feel better, reliability, portability, and cost. Each attribute was presented with a number of levels chosen from a specified and plausible range. The DCE design was constructed with a total of 256 choice sets divided into 32 blocks of 8 choice sets each, with each choice set having level overlap on exactly one attribute. Each respondent completed 16 choice tasks across two scenarios: treatment for themselves and for someone they care for. Study participants were also asked about their attitudes and opinions about the nasal spray and the injection pen devices. Respondents were asked to respond to statements by indicating their level of agreement on a five-point Likert scale ranging from 'strongly agree' to 'strongly disagree'.
Population	Around 1,687 Australian adults, including an oversample of 750 individuals with experience of severe allergy completed an online survey. Of the 750 respondents, 37.9% of them had severe allergy and 74.3% indicated that they live with or care for someone with a severe allergy. The sample was reflective of the Australian general population in terms of age, sex and State/territory and located in regional centres or other urban areas (34.4% vs 26.1%). The sample had a higher level of educational attainment (32% completed a bachelor's degree). A higher proportion of respondents reported they were employed (full-time 51.6%; part-time 19.4%) compared with the Australian general population aged 15 years and older (64.3%) and 46.6% of respondents reported their annual household income was over $100,000 per year.
Analysis methods	Multinomial, mixed logit and latent class models.
Determination of WTP	The marginal WTP for each attribute was calculated as the ratio of the attribute level coefficients to the cost coefficient. Total WTP was calculated by adding together the WTP for select attributes, representing their combined importance in respondents' choices.
Relative attribute importance	The attributes with the greatest influence on people's choices were the 'time to feel better' and 'reliability', which together accounted for 70% the relative importance for choices made in the model. The attributes used to justify a price premium included: administration with nasal spray (6%), device portability of up to 50°C (4%); and a pack size of 8 x 6 x 2 cm (6%), each contributed less than 10% to overall importance.

Source: Compiled during evaluation based on the submission and Attachment 2.15 to the submission
DCE = discrete choice experiment; WTP = willingness to pay

Figure 3: Example of a choice task in the discrete choice experiment scenario

	Option 1	Option 2
Device pack size (dimensions in centimetres)		
Number of devices per pack	1 device (1 dose)	2 devices (2 doses)
Administration type	Injection pen device (needle in thigh)	Nasal spray device (spray in nostril)
Shelf-life (length of time before the medicine needs to be replaced)	24 months	12 months
Time to feel better	5 minutes	1 minute
Reliability of device (probability device performs as intended)	Always reliable (0% failure rate)	Very high reliability (1 in 1,000 devices fail)
Portability (temperature extremes)	Up to 30°C for a week	Up to 50°C for a week
Cost to you	$100	$200
Which option would you prefer?	☐	☐

Source: Figure 6, Attachment 2.15 to the submission

6.366.38 The submission stated that the attributes were derived from product information (PI) leaflets, presentations, targeted literature review, and expert opinion. The initial survey design, including attributes and levels was refined through two focus groups consisting of research team, project group representative from the sponsor, and expert opinion from two clinical immunology and allergy specialists. The evaluation noted that attribute development did not include qualitative interviews with patients or caregivers, as recommended by good-practice guidelines,[11] but instead relied on the research team, sponsor representatives, and a small number of clinicians. The Sub-Committees noted that the approach taken was still largely appropriate. The evaluation noted this approach could increase the risk that the final attribute set focused on product features (e.g., device size, administration method, shelf-life) rather than the broader factors that influence real-world device use during anaphylaxis. Studies such as Tang et al. (2025)[7] showed that real-world use is driven by factors like confidence, fear of incorrect administration, stress, and uncertainty about when to use adrenaline. However, the Sub-Committees noted that the included attributes were likely to be the appropriate ones, and the factors identified by Tang et al. are not conducive to being attributes in a DCE as they are endogenous to respondents, rather than the product itself.

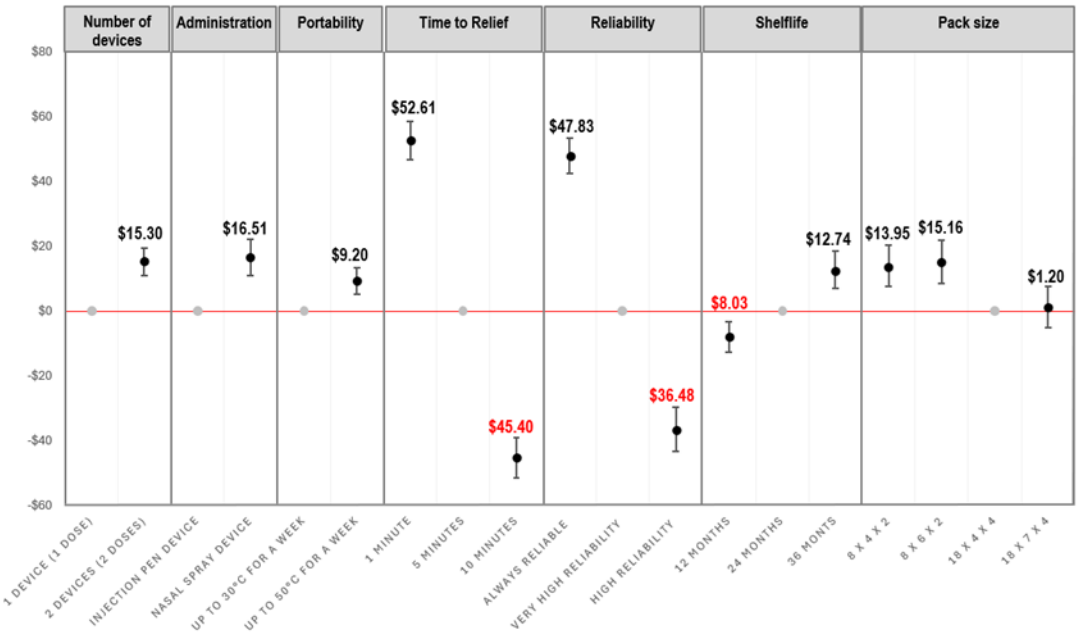
[11] Bridges JFP, Hauber AB, Marshall D, et al. (2011), 'Conjoint Analysis Applications in Health—a Checklist: A Report of the ISPOR Good Research Practices for Conjoint Analysis Task Force', *Value in Health,* 14(4): 403-413.

~~6.37~~6.39 The submission evaluated the results of the DCE using multinomial logit (MNL) as the primary analysis, supported by mixed logit (MXL) and latent class models to assess preference heterogeneity.

- In the MNL model for all respondents, participants preferred a nasal spray over an injection, smaller and more portable devices, longer shelf-life, faster symptom relief, higher reliability, and lower out-of-pocket cost. The coefficients for all attributes and levels in the pooled MNL analysis were consistent with α-priori expectation with respect to direction, holding all else equal. Results were also consistent across other scenarios (self-treatment versus treatment for someone else, and by experience of severe allergy vs no experience). Notably, except for the attribute levels for 'time to feel better - 1 minute' and 'device pack size 8 x 6 x 2cm', the magnitude of the coefficients was smaller among respondents with severe allergy experience compared with the overall MNL model results.
- In the MXL analyses for all respondents, the results were consistent with the MNL analysis in terms of the direction of preference for each attribute. Preference heterogeneity was observed across all attributes, except for the cost attribute of $50. This heterogeneity may reflect differences in respondents' baseline characteristics and experience with the severe allergy. However, the submission did not present an MXL model for subgroup of participants with severe allergy. Given that the MNL results showed smaller coefficients among this subgroup, it is likely that an MXL model would also yield lower preference weights and therefore lower WTP estimates.

~~6.38~~6.40 To express respondents' preferences in monetary terms, the resulting coefficients from the MXL model 2 (cost attribute as continuous variable) with all respondents were used to estimate marginal WTP (mWTP) for each attribute level, as summarised in Figure 4. Of note, presenting WTP specifically based on respondents with lived experience of severe allergy would provide more relevant information, as this group is more likely to use adrenaline in practice.

Figure 4: Marginal Willingness to Pay for attributes assessed in the Discrete Choice Experiment (all respondents)



Source: Figure 2.6.3, p111 of the submission
Note: Base levels: devices per pack, 1 device (1 dose); administration method, injection pen device; portability, up to 30°C for a week; time to feel better, 5 minutes; reliability, very high reliability (1 in 1,000 devices fail); shelf-life, 24 months; device size, 18 x 4 x 4 cm.

~~6.39~~6.41 The submission claimed that respondents were willing to pay up to a total of $40.87 (95% confidence interval [CI]: $31.10 to $50.50) for the attributes that differentiate neffy from EpiPen. This sum was aggregated from the three attributes: administration of nasal spray over injection pen ($16.51); portability with device storage of up to 50°C over 30°C ($9.20); and small device pack size of 8 x 6 x 2 cm over 18 x 4 x 4 cm ($15.16). This was equivalent to a [redacted]% premium over EpiPen (AEMP $67.19). The Sub-Committees noted that from the PSCR, when the consumer respondents' estimates were used, the marginal WTPs for each attribute above were $10.11, $5.70 and $16.03, respectively (total $31.84).

~~6.40~~6.42 Of note, the largest incremental costs were associated with attributes pertaining to efficacy and reliability of the devices. These attributes were appropriately excluded from the total WTP for price premium justification, given that they were considered to be equivalent across all the available adrenaline devices. The submission also excluded mWTP for having a 2-dose pack compared with a single dose pack to avoid double-counting for an attribute, as the included mWTP of $15.16 already represents a neffy pack size that contains two devices. Similarly, shelf-life benefits were not incorporated, as the impact of increasing shelf-life relative to EpiPen was assessed separately as a cost-offset in the CMA.

~~6.41~~6.43 The submission cited previous PBAC submissions that supported price premiums based on superior patient acceptability, which was expected to improve treatment adherence and patient outcomes. Previous PBAC applications (tobramycin Public Summary Document [PSD], November 2013 PBAC meeting; Exenatide PSD, July 2015

PBAC meeting; cabotegravir PSD, March 2021 PBAC meeting) used DCE method to justify price premium along with consumer surplus (difference between the WTP and the actual price). In its consideration of tobramycin, the PBAC considered that at best, the DCE approach provided an upper-bound estimate of the consumer surplus associated with TIP being included on the PBS (p6, tobramycin PSD, November 2013 PBAC meeting).

~~6.42~~6.44 A price premium proposed in the submission justified by the aggregate mWTP for neffy was uncertain because:

- The submission did not present a MXL model based on participants who had experience with severe allergies, the group most relevant to real-world practice, despite evidence that this subgroup demonstrated smaller preference weights in the MNL model, which would likely result in lower WTP. The PSCR presented mWTP estimates for respondents with a prior history of anaphylaxis. The Sub-Committees noted that among this subgroup, the WTP for attributes associated with neffy was lower than that observed in the overall respondents, with the exception of the attributes 'time to feel better' and 'device pack size', for which WTP values were slightly higher.
- The WTP estimate is likely to represent an upper bound, as WTP estimates from DCEs assumes a constant marginal utility of income. This is of concern as, compared to the general Australian population, the survey participants had a higher educational attainment (32% completed a bachelor's degree) and 46.6% of respondents reported their annual household income was over $100,000 per year, suggesting a more affluent sample.

~~6.43~~6.45 The DCE included attitudes and opinions questions using a five-point Likert scale ranging from 'strongly agree' to 'strongly disagree' to assess confidence in administering devices. The results showed that fewer respondents were confident administering injection pens compared with nasal sprays: 72.4% versus 80.8% for self-administration and 71.3% versus 75.3% for administering to someone else. Based on these descriptive ratings, the submission assumed that 4–8.4% of individuals lacking confidence with EpiPen would be confident using neffy. The PSCR argued that while the confidence ratings do not come from the DCE model itself, they provide valid and complementary evidence on likely real-world use. The Sub-Committees considered these results reflect qualitative/attitudinal views rather than direct evidence that a change in self-reported confidence ratings would lead to a change in actual behaviour and utilisation.

Cost-minimisation analysis

~~6.44~~6.46 A CMA was presented to justify the incremental price requested that includes a cost offset for decreased utilisation of neffy 2 mg devices due to their long shelf-life compared to EpiPen (30 months compared to 24 months).

~~6.45~~6.47 The submission and PSCR argued that the actual 'onshore' shelf-life of EpiPen in Australia is often shorter than the maximum specified in the PI, with some patients

receiving devices with fewer than 12 months remaining[8]. This was based on a lived-experience report study with limited sample size (11 participants) and self-reported data. In contrast, neffy is expected to have a robust supply chain, with at least 80% of its approved shelf-life, ensuring a minimum of 24 months for neffy 2 mg and 18 months for neffy 1 mg. The PSCR explained that evidence from patients' lived experience provided in the submission (HTANALYSTS, October 2025) indicates that expiry is a meaningful practical driver of replacement behaviour, with many patients actively tracking expiry dates and replacing devices as they expire to ensure they have at least two in-date adrenaline products available.

6.466.48 In the base case (Scenario 2a), the number of devices per patient per year for both EpiPen and neffy 1 mg was estimated at 1.87, based on the mean devices per prescription reported in the "Review of adrenaline PBS listed for the treatment of acute allergic reaction with anaphylaxis" by Drug Utilisation Sub-Committee (DUSC) 2020. For neffy 2 mg, a 25% reduction was applied (1.40 devices per patient per year) to account for its longer shelf-life compared with EpiPen (30 months versus 24 months). These estimates were further weighted by the expected dose distribution in the Australian population.

6.476.49 An 11% utilisation rate was applied to each of the device type, reflecting the expected use and replacement of devices within 12 months, based on historical prescription refill data (mean 1.11 prescriptions per patient per year from 2014–2019), as reported in the 2020 DUSC report. However, this 11% rate combines both actual use during anaphylaxis and replacement due to expiry, and the proportion attributable to expiry remains uncertain. The PSCR stated that clinician feedback is that the majority of prescriptions written for AAI replacement are for expired devices, rather than use due to anaphylaxis (which is infrequent).

6.486.50 Table 6 presents the results of the CMA over a two-year time horizon.

Table 6: Cost-minimisation results – base case (Scenario 2a)

	Calculation	Neffy 2 mg	Neffy 1 mg	EpiPen 0.3 mg	EpiPen 0.15 mg	Incremental	%
Number of devices per prescription	A	1.40[a]	1.87	1.87	1.87	-	-
Number of devices per time horizon	B=A*2	2.81	3.74	3.74	3.74	-	-
Number of devices used or replaced per year	C	0.11	0.11	0.11	0.11	-	-
Number of devices used or replaced per time horizon	D=C*2	0.22	0.22	0.22	0.22	-	-
% of population based on weight-based dosing	E	70%	30%	70%	30%	-	-
Total number of devices per time horizon	F=(B+D)*E	2.12	1.19	2.77	1.19	0.65	-16.5%
AEMP	G	$[redacted]		$67.19		$[redacted]	[redacted]%
Total drug cost	F*G	$[redacted]		$266.07		$[redacted]	[redacted]%

Source: Table 3.6.7, p140 of the submission.
AEMP = approved ex-manufacturer price.
[a] The submission assumed a 25% reduction in the frequency of prescribing from 1.87 devices/year, based on a 25% longer shelf life (i.e. 30 months rather than 24 months).

~~6.49~~6.51 At the proposed AEMP of $[redacted] per neffy device, the estimated total drug cost per patient over a two-year period was $[redacted] for neffy compared with $266.07 for EpiPen. The submission stated that this reflected a modest increase of $[redacted], or approximately [redacted]%, over the specified time horizon.

~~6.50~~6.52 The key sources of uncertainty were identified to be the assumed shelf life of adrenaline devices and the estimated utilisation of devices per patient each year. To address these uncertainties, the submission presented five alternative scenarios:

- Scenario 2b assumed all adrenaline devices would be supplied at their maximum registered shelf-life, requiring two devices every two years, for EpiPen and neffy 1 mg (≈1 device/year) and two devices every 30 months for neffy 2 mg (≈0.8 devices/year).
- Scenario 2c assumed baseline dispensing of 1.87 devices annually for EpiPen and neffy 1 mg, while neffy 2 mg was replaced on a two-year cycle due to longer shelf-life, halving the replacement frequency compared with EpiPen and neffy 1 mg.
- Scenarios 2d–2f explored the impact of different remaining 'onshore' shelf-life assumptions for neffy (minimum 23 months for 2 mg and 17 months for 1 mg) and EpiPen (6, 12, or 18 months).

The impact of the different utilisation assumptions on the calculated cost per device and percentage incremental price increase over EpiPen is presented in Table 7.

Table 7: Impact of device utilisation on neffy cost – Scenarios 2b, 2c, 2d, 2e, 2f

Cost component	neffy	EpiPen
Scenario 2b: conservative utilisation based on registered shelf life (0.55 AAI and 0.49 neffy devices per year)		
Drug cost per time horizon	$149.16	$149.16
Cost per device (AEMP)	$[redacted]	$67.19
Cost minimisation, incremental % over EpiPen	[redacted]%	--
Scenario 2c: aggressive utilisation based on annual refill cycle (0.99 AAI and 0.66 neffy devices per year)		
Drug cost per time horizon	$266.07	$266.07
Cost per device (AEMP)	$[redacted]	$67.19
Cost minimisation, incremental % over EpiPen	[redacted]%	--
Scenario 2d: based on estimated onshore shelf life of neffy vs EpiPen 6 months (2.06 AAI and 0.61 neffy devices per year)		
Drug cost per time horizon	$552.30	$552.30
Cost per device (AEMP)	$[redacted]	$67.19
Cost minimisation, incremental % over EpiPen	[redacted]%	--
Scenario 2e: based on estimated onshore shelf life of neffy vs EpiPen 12 months (1.06 AAI and 0.61 neffy devices per year)		
Drug cost per time horizon	$283.54	$283.54
Cost per device (AEMP)	$[redacted]	$67.19
Cost minimisation, incremental % over EpiPen	[redacted]%	--
Scenario 2f: based on estimated onshore shelf life of neffy vs EpiPen 18 months (0.72 AAI and 0.61 neffy devices per year)		
Drug cost per time horizon	$193.96	$193.96
Cost per device (AEMP)	$[redacted]	$67.19
Cost minimisation, incremental % over EpiPen	[redacted]%	--

Source: Table 3.6.8, p141 of the submission.
AAI = adrenaline autoinjector; AEMP = Approved ex-manufacturer price

~~6.51~~6.53 The total cost per patient of neffy and EpiPen treatment over the two-year time horizon calculated in the alternative scenarios is presented in Table 8.

Table 8: Total drug cost per patient over two years

	neffy	EpiPen	Incremental	%
Scenario 2b: conservative utilisation based on registered shelf life (0.55 EpiPen and 0.49 neffy devices per year)	$[redacted]	$149.16	$[redacted]	[redacted]%
Scenario 2c: aggressive utilisation based on annual refill cycle (0.99 EpiPen and 0.66 neffy devices per year)	$[redacted]	$266.07	-$[redacted]	-[redacted]%
Scenario 2d: onshore shelf-life utilisation approach (6 months EpiPen) (2.06 EpiPen and 0.61 neffy devices per year)	$[redacted]	$552.30	-$[redacted]	-[redacted]%
Scenario 2e: onshore shelf-life utilisation approach (12 months EpiPen) (1.06 EpiPen and 0.61 neffy devices per year)	$[redacted]	$283.54	-$[redacted]	-[redacted]%
Scenario 2f: onshore shelf-life utilisation approach (18 months EpiPen) (0.72 EpiPen and 0.61 neffy devices per year)	$[redacted]	$193.96	$[redacted]	[redacted]%

Source: Table 3.6.9, p142 of the submission.

~~6.52~~6.54 In all the scenarios, the total cost per patient over the two-year time horizon was less or not substantially higher for neffy compared to EpiPen, ranging from -[redacted]% to [redacted]%.

~~6.53~~6.55 The evaluation considered the CMA was uncertain because: (i) the analysis relied on assumed shelf-life advantages for neffy rather than observed utilisation patterns; (ii) the 25% reduction in replacement frequency for neffy 2 mg is not supported by evidence, and no rationale is provided for why a longer registered or on-shore shelf-life would translate into fewer scripts in practice; and (iii) the applied 11% utilisation

rate combines both true clinical use with expiry-related replacement which makes it difficult to estimate cost offsets from replacements due to device shelf-life. The Sub-Committees considered it was a reasonable argument that a high proportion of new prescriptions would be to replace expired devices. The Sub-Committees also noted that a robust supply chain and longer shelf-life were appealing. However, it was uncertain if the 25% longer shelf-life would be entirely translated into a 25% reduction in replacement prescriptions over 24 months (see paragraph 6.52 and Table 7 and Table 8 for potential variation in CMA outcomes). The Sub-Committees also considered this rate of replacement may be impacted by some patients carrying both emergency treatments, particularly in the short term (see paragraph 6.73).

~~6.54~~6.56 In the pre-PBAC response, the sponsor presented key findings from a commissioned survey of 200 Australian pharmacies in January 2026 to better understand the availability and shelf-life of EpiPen in current pharmacy practice:

- The current weighted average shelf-lives calculated from all responses for EpiPen 0.3 mg and 0.15 mg were 13.1 months and 11.8 months, respectively.
- Only 9% of pharmacies had EpiPens with ≥18 months remaining shelf-life.
- In the three months November 2025 – February 2026 (inclusive), 43% of 0.15 mg pens and 32% of 0.3 mg pens received by pharmacies had less than 12 months until the expiry date, despite 56% of pharmacies reporting that they are receiving less short-dated stock than a year ago.
- 81% of pharmacies experienced at least one out-of-stock (OOS) in the last three years, and 28%/21% of pharmacies experienced at least four OOS in the last three years for 0.3 mg/0.15 mg EpiPens, respectively.

~~6.55~~6.57 The pre-PBAC response stated that, in contrast, the expiry of the first shipment of neffy 2 mg which was available for private purchase in Australia is 30 April 2028, representing a shelf-life of 27 months. This exceeds the shelf-life estimates for neffy that were provided in the submission of 24 and 18 months for neffy 2 mg and 1 mg, respectively. Thus, there is a difference of at least 10.9 months (24 – 13.1) in the expected shelf-life of neffy 2 mg versus EpiPen 0.3 mg, and 6.2 months (18 – 11.8) for neffy 1 mg versus EpiPen 0.15 mg. The pre-PBAC response further stated that the requested neffy price will allow for the costs associated with sustaining an efficient supply chain to expedite the delivery of neffy from the US to Australia and facilitate the longest possible onshore shelf-life.

Cost-consequence analysis

~~6.56~~6.58 A CCA was conducted to evaluate a potential reduction in hospitalisations, claimed to result from patients' increased willingness to carry and use neffy. The submission argued that earlier adrenaline administration, driven by better device acceptability and availability, is expected to lower the current rate of anaphylaxis-related hospitalisations.

~~6.57~~6.59 The increased willingness to use a nasal spray rather than an injection has been previously accepted by PBAC. In its March 2019 consideration of naloxone, which uses the same nasal spray device as neffy, the PBAC considered that while the clinical

benefits of intranasal naloxone were similar to injectable naloxone, availability of the intranasal formulation could contribute to increasing use due to ease of administration (para 7.1, naloxone PSD, March 2019 PBAC meeting).

~~6.58~~6.60 In the absence of direct evidence of the impact of neffy on anaphylaxis hospitalisations, the submission modelled scenarios estimating potential reductions in admissions based on assumptions outlined in Table 9.

Table 9: Key assumptions and components of the cost-consequence approach

Parameter	Input	Source	Comment
Total patients prescribed an AAI (annual)	137,410	Prospection data (2023-24)	This was reasonable.
Total hospitalisations coded as allergic reactions, 2023-24 (AR-DRG X61A, AR-DRG X61B)	13,364	AIHW [a]	While this approach is reasonable, it is important to note that coding for emergency department presentations and hospital admissions related to allergic disease and anaphylaxis is frequently inaccurate, which may lead to underestimation of admission rates in AIHW datasets [12,13].
Percentage of patients who use adrenaline with EpiPen during an anaphylaxis attack	11%	DUSC report (% prescriptions refilled within 12 months) and Prospection data (2023-24)	This 11% rate combines both actual use during anaphylaxis and replacement due to expiry, and the proportion attributable to utilisation remains uncertain.
Percentage of patients (percentage increase) who use adrenaline with neffy during an anaphylaxis attack	Scenario 3a: 17% (+6%) Scenario 3b: 15% (+4%) Scenario 3c: 19% (+8%) Scenario 3d: 21% (+10%)	Based on attitudinal question conducted on a Likert scale during the DCE.	These were obtained from descriptive, self-reported confidence ratings, rather than from the DCE model analyses. Therefore, they reflect qualitative/ attitudinal opinions, rather than behaviourally derived DCE evidence.
Percentage of patients who receive adrenaline attending hospital ED for observation	100%	ASCIA guidelines	While this was in accordance with the guidelines, the compliance rate may be uncertain.
Hospitalisation rate for those with anaphylaxis with early (before ED) adrenaline administration	17%	Fleming et al. 2015	This was based on a chart review study conducted in the United States (2004-2009) which found that early administration of adrenaline before Emergency Department arrival significantly reduced hospitalisation risk compared to delayed treatment
Hospitalisation rate for those with anaphylaxis with late adrenaline administration	43%	Fleming et al. 2015	
Hospitalisation cost for DRG X61B (Allergic reactions, minor complexity)	$929.02	AR-DRG X61B (Allergic Reactions, Minor Complexity) [a]	This was reasonable.

[12] Deloitte Access Economics, (2025), 'Costly Reactions: The economic and social cost of allergic disease in Australia', Report prepared for Australasian Society of Clinical Immunology and Allergy (ASCIA) and the National Allergy Council.

[13] Bann MA, Carrell DS, Gruber S, et al. (2025), 'Identification and Validation of Anaphylaxis Using Electronic Health Data in a Population-based Setting', Epidemiology, 32(3); 439-443.

Hospitalisation cost for DRG X61A (Allergic reactions, major complexity)	$3,105.70	AR-DRG X61A (Allergic Reactions, Major Complexity) [a]	This was reasonable.

Source: Table 3.7.1, p144 of the submission.
AAI = adrenaline autoinjector; AIHW = Australian Institute of Health and Welfare; AR-DRG = Australian refined diagnosis related group; ASCIA = Australasian Society of Clinical Immunology and Allergy; CMA = cost-minimisation analysis; DCE = discrete choice experiment; DUSC = Drug Utilisation Sub-Committee; ED = emergency department.
[a] Australian Refined Diagnosis Related Group cube 2023-24, available at: https://www.aihw.gov.au/reports/hospitals/ar-drg-data-cubes/contents/summary

~~6.59~~6.61 Table 10 summarises the cost-savings associated with the post-anaphylaxis hospitalisations avoided with neffy compared with EpiPen.

Table 10: Post-anaphylaxis hospitalisations avoided

Outcome, annual	neffy	EpiPen	Difference
Scenario 3a: 6% increase in early adrenaline administration			
Number of anaphylaxis hospitalisations	11,220	13,364	-2,144
Total cost of anaphylaxis hospitalisations	$14,309,362	$17,043,086	-$2,733,724
Cost of anaphylaxis hospitalisation per patient prescribed adrenaline	$104.14	$124.03	-$19.89
Per patient cost saving as incremental % over EpiPen			29.6%
Scenario 3b: 4% increase in early adrenaline administration			
Number of anaphylaxis hospitalisations	11,935	13,364	-1,429
Total cost of anaphylaxis hospitalisations	$15,220,603	$17,043,086	-$1,822,483
Cost of anaphylaxis hospitalisation per patient prescribed adrenaline	$110.77	$124.03	-$13.26
Per patient cost saving as incremental % over EpiPen			19.7%
Scenario 3c: 8% increase in early adrenaline administration			
Number of anaphylaxis hospitalisations	10,506	13,364	-2,858
Total cost of anaphylaxis hospitalisations	$13,398,120	$17,043,086	-$3,644,966
Cost of anaphylaxis hospitalisation per patient prescribed adrenaline	$97.50	$124.03	-$26.53
Per patient cost saving as incremental % over EpiPen			39.5%
Scenario 3d: 10% increase in early adrenaline administration			
Number of anaphylaxis hospitalisations	9,791	13,364	-3,573
Total cost of anaphylaxis hospitalisations	$12,486,879	$17,043,086	-$4,556,207
Cost of anaphylaxis hospitalisation per patient prescribed adrenaline	$90.87	$124.03	-$33.16
Per patient cost saving as incremental % over EpiPen			49.4%

Source: Table 3.7.2, p146 of the submission.

~~6.60~~6.62 Based on the CCA results, earlier use of adrenaline with neffy could generate cost-savings between $1.8 million and $4.5 million. When averaged across all patients prescribed adrenaline, the estimated saving per patient from avoided hospitalisations with neffy ranges from $[redacted] to $[redacted], representing [redacted]% to [redacted]% of the current EpiPen price.

~~6.61~~6.63 The estimated cost-savings are uncertain due to the issues identified in Table 9. Additionally, these estimates do not account for the cost associated with potential increase in utilisation of neffy compared with EpiPen. As a result, the projected cost savings may not be fully realised. During the evaluation, a CMA was undertaken to estimate the AEMP of neffy relative to EpiPen, incorporating both the anticipated increase in neffy utilisation and the corresponding reduction in hospitalisations compared with EpiPen. The results of the CMA analysis are presented in Table 11.

Table 11: Cost minimisation analysis conducted during evaluation

	Calculation	neffy	EpiPen	Difference
Prescription				
Total number of patients who are prescribed adrenaline in a year	A	137,410	137,410	-
Percentage of patients who refill prescription per year	B	17%	11%	6%
Total number of prescriptions per year	C=A*(1+B)	160,770	152,525	8,245
Cost of adrenaline per patient per prescription (AEMP; two devices)	D	$[redacted]	$134.38	$[redacted]
Total cost of adrenaline prescription	**E = C*D**	**$[redacted]**	**$20,496,323**	**$[redacted]**
Hospitalisation				
Patients prescribed adrenaline who have reaction and take adrenaline early	F=A*B	23,360	15,115	8,245
Patients hospitalised after early adrenaline administration	G=F*17%	3,971	2,570	1,402
Patients prescribed adrenaline who have reaction and do not take adrenaline early	H=I/43% [a]	16,859	25,103	-8,245
Patients hospitalised after late adrenaline administration	I=K-G [a]	7,249	10,794	-3,545
Total patients with anaphylaxis	J	40,218	40,218	0
Total hospitalised	K (AR-DRG)	11,220	13,364	-2,144
Weighted hospitalisation cost	L (AR-DRG)	$1,275.30	$1,275.30	$0
Total cost of anaphylaxis hospitalisations	**M=K*L**	**$14,309,362**	**$17,043,086**	**-$2,733,724**
Net cost per year with neffy	**E+M**			**$[redacted]**

Source: Constructed during evaluation using 'App 3.3 neffy Economic Analyses' workbook.
AEMP = approved ex-manufacturer price; AR-DRG = Australian refined diagnosis-related groups.
[a] Calculations are for EpiPen column.

~~6.62~~6.64 When accounting for both the cost associated with the potential increase in utilisation and the corresponding reduction in hospitalisations with neffy compared to EpiPen, the analysis estimated a net cost of approximately $[redacted]. To ensure that there is zero net cost, if utilisation rises by 6% due to neffy's attributes, the proposed price will need to be reduced by [redacted]%, from $[redacted] to $[redacted]. This reflects a premium of [redacted]% over EpiPen compared to the [redacted]% proposed by the submission. Similarly, if utilisation rises by 10%, the price premium required for zero net cost would be approximately [redacted]%[14]. The Sub-Committees considered that clinical benefits such as reductions in post-anaphylaxis hospitalisations from increased willingness to carry and use the nasal spray were possible. It was also considered that the revised CCA conducted during the evaluation that accounted for increased utilisation with neffy was informative, suggesting a premium of under [redacted]% may be reasonable. The pre-PBAC response noted the incorrect

[14] In the evaluation and Joint Sub-Committees advice this calculation was erroneously presented as [redacted]%. It was noted after the joint Sub-Committees meeting that this calculation was in error — if utilisation rises by 10%, the price premium required for zero net cost would be approximately [redacted]%, not [redacted]%.

calculation (see footnote above) informed the Sub-Committees advice regarding the level of premium that may be considered appropriate.

~~6.63~~6.65 The pre-PBAC response proposed a revision to the evaluation CMA to include replacement due to expiry as a resource use in the calculations, allowing for the inclusion of separate estimates of device replacement due to use and expiry for both neffy and EpiPen. See Table 12.

~~6.64~~6.66 The revised CMA in the pre-PBAC response quantified the number and cost of scripts per year for both neffy and EpiPen by accounting for: 1) excess prescriptions, ie. those refilled within less than 12 months of the previous prescription either due to use for anaphylaxis or short expiry; and 2) regular replacement due to normal device expiry or anaphylaxis plan review:

1) Excess prescriptions: The estimate of 11% for the rate of excess prescriptions for EpiPen cited in the original submission combines both actual use during anaphylaxis and replacement due to expiry within 12 months (see paragraph 6.49), and the proportion attributable to expiry remains uncertain. To inform the different assumptions, the pre-PBAC response identified a recent reference (Muraro 2021[15]), which suggests an incidence of anaphylaxis attacks in children and adolescents with food allergy of 3.72%. Accepting that the excess prescriptions for EpiPen are currently 11%, prescription refills due to expired devices for EpiPen can therefore be calculated as (11% - 3.72%) = 7.28%. Similarly, for neffy it is assumed that a baseline 3.7% of patients will use their device for anaphylaxis, plus 6% of additional patients willing to use neffy rather than EpiPen included in the CMA conducted during the evaluation (see Table 11 and scenario 3a from Table 10), which was the midpoint of the estimates from the DCE in the original submission and accommodates the potential for a 'lower clinical threshold' for use of neffy.

2) Regular replacement: To estimate regular device replacement, it was assumed that all EpiPen prescriptions would be replaced every 12 months. This assumption was justified in the pre-PBAC response given the results of the IQVIA survey indicate that weighted average shelf-lives of 0.15 mg and 0.3 mg EpiPens provided to pharmacies over the past 12 months were 11.8 months and 13.1 months, respectively. For neffy, the pre-PBAC response verified that the likely expiry for patients receiving neffy will be 24 months for 2 mg and 18 months for 1 mg presentations. The following assumptions for regular replacement of neffy were included in the model:
    - All school aged patients (0-19 years) will replace their neffy devices every 12 months in line with annual update to their action plans.

[15] Muraro A, Sublett J, et al (2021), 'Incidence of anaphylaxis and accidental peanut exposure: a systematic review', Clin Transl Allergy, e12064, https://10.1002/clt2.12064.

- All adult patients will replace their neffy devices on average every 18 months.

Table 12: Revised CMA – presented in pre-PBAC response

	Calculation	neffy	EpiPen	Difference
Prescription				
Total no. of patients who are prescribed adrenaline in a year	A	137,410	137,410	-
% of patients who refill prescription per year *due to replacement of used device*	B_1	*9.7%*	*3.7%*	6%
No. of prescriptions per year due to replacement of used device	*C_1=A*B_1*	*13,356*	*5112*	*8245*
% of patients who refill prescription per year due to device expiry	*B_2*	*78.6%*	*107.3%*	*-28.7%*
No. of prescriptions per year due to replacement of expired device	*C_2=A*B_2*	*121,304*	*147,413*	*-26,109*
Total number of prescriptions per year	*C=C1+C2*	*134,661*	*152,525*	*-17,864*
Cost of adrenaline per patient per prescription (AEMP; 2 devices)	D	$	$134.38	$
Total cost of adrenaline prescription	**E = C*D**	**$**	**$20,496,323**	**$**
Hospitalisation				
Patients prescribed adrenaline who have reaction and take adrenaline early	F=A*B_1	*13,356*	*5,112*	8,245
Patients hospitalised after early adrenaline administration	G=F*17%	*2,271*	*869*	1,402
Patients prescribed adrenaline who have reaction and do not take adrenaline early	H=J-F	*20,814*	*29,058*	-8,245
Patients hospitalised after late adrenaline administration	I=H*43%	*8,950*	*12,495*	-3,545
Total patients with anaphylaxis	J	*34,170*	*34,170*	0
Total hospitalised	K=G+I	11,220	13,364	-2,144
Weighted hospitalisation cost	L (AR-DRG)	$1,275.30	$1,275.30	$0
Total cost of anaphylaxis hospitalisations	**M=K*L**	**$14,309,362**	**$17,043,086**	**-$2,733,724**
Net cost per year with neffy	**E+M**			**-$**

Note: Changes from the evaluator's version are shown in italics.
Source: Pre-PBAC response Table 11

~~6.65~~6.67 The PBAC noted there were several uncertainties regarding the assumptions used in the pre-PBAC response revised CMA:

- In row B_1, the additional 6% (totalling 9.7%) of patients who refill their prescription per year due to use of neffy (out of a total of 11% excess prescription refills), inflates the expected number of attacks per year and therefore the rates of hospitalisations potentially avoided. The Muraro reference that was used to represent EpiPen use of 3.7% found the incidence rate of anaphylaxis among children/adolescents with food allergies was 3.72 incident cases of anaphylaxis per 100 person-years.
- In row B_2, the resulting % of patients who refill prescription per year due to device expiry results in an increase in average script duration from 11.2 months (12/1.073) to 15.2 months (12/0.786) It is unclear how this number accounts for regular replacement (see point 2) under paragraph 6.66) as well as replacement due to expiry.
- In row G, the lower risk of hospitalisation due to early administration (17%) was based on US data (see paragraph 4.3) and its applicability to the Australian setting is unclear.

Overall, the theoretical advantages of a reduction in hospitalisations due to earlier/appropriate use of adrenaline with neffy versus EpiPen, and reduced

replacement prescriptions due to longer shelf-life, could not be accurately calculated to support a particular premium over EpiPen.

Drug cost/patient/year

~~6.66~~6.68 In the case that neffy devices are dispensed 1:1 in place of existing adrenaline injectors at the requested AEMP of $[redacted] per device, with an equal number of devices dispensed per year (1.98 mean devices), the total drug cost per patient (AEMP) over one year time horizon is expected to be $[redacted] with neffy and $133.04 with EpiPen. This equates to a dispensed price per maximum quantity (DPMQ) of $[redacted] for neffy, compared with $160.50 for EpiPen.

Estimated PBS usage & financial implications

~~6.67~~6.69 This submission was jointly considered by DUSC and ESC.

~~6.68~~6.70 The submission used a market share approach to estimate the utilisation and financial impact of listing neffy. Table 13 outlines the key inputs relied on in the financial estimates.

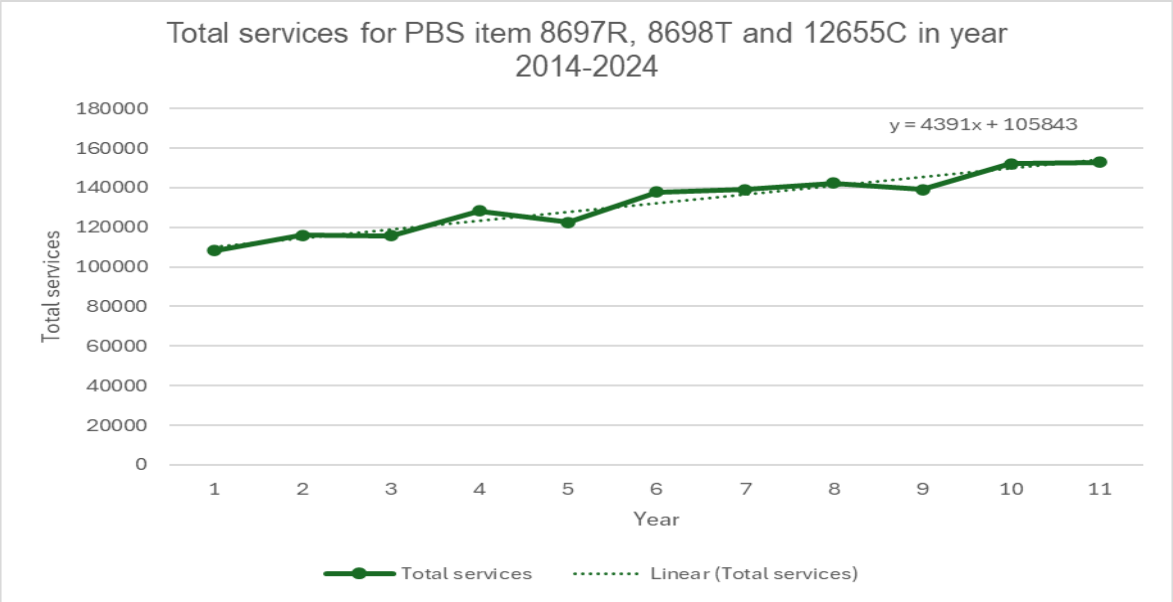
Table 13: Key inputs for financial estimates

Parameter	Value applied and source	Commentary	Sub-Committee's comments
Number of prescriptions for Adrenaline 0.15 mg	32,747 in year 2024 based on the PBS Item Statistic (8697R)	This was reasonable.	Reasonable.
Number of prescriptions for Adrenaline 0.3 mg	114,023 in year 2024 PBS Item Statistic (8698T)	This was reasonable.	Reasonable.
Number of prescriptions for Adrenaline 0.5 mg	6,121 in year 2024 based on the PBS Item Statistic (12655C)	This was reasonable.	Reasonable.
Growth rate	3.52% based on the prescription dispensed in year 2014 and 2024	It may be more appropriate to use a linear forecast based on the service volumes from 2014 to 2024.	Likely overestimated. Agree with the commentary that an annual growth rate of 2.4 to 2.8% would be more appropriate. See below.
Uptake rate	[redacted]% in Year 1 increasing to [redacted]% in Year 6 based on sponsor's assumption using the preference stated in the DCE	This was uncertain; the hypothetical nature of DCEs limits external validity, and it remains unclear whether stated preferences reflect real-world behaviour. The short-term uptake may be higher than projected, driven by neffy's attributes as well as current Anapen supply shortages.	Likely underestimated. Agree with the commentary. Using the upper bound of the sensitivity analysis would be the most appropriate ([redacted]%, [redacted]%, [redacted]%, [redacted]%, [redacted]% and [redacted]% in Years 1 to 6 respectively). See below.
Proposed medicine	$[redacted] based on the requested DPMQ	This was reasonable.	Reasonable.
Comparator	$160.50 based on the DPMQ of PBS Item 8697R, 8698T, and 12655C	This was reasonable.	Reasonable.
Patient copayment	PBS: $20.95 RPBS: $5.67 99.67% PBS and 0.33% RPBS for PBS Item 8697R, 8698T, and 12655C	This was reasonable.	Reasonable.

Source: Table 4.2.1, p15, Table 4.2.2, p151, Table 4.2.7, p154, Table 4.2.8, p154, Table 4.3.3, p156 of the submission.
DCE = discrete choice experiment; DPMQ = dispensed price for maximum quantity; DUSC = Drug Utilisation Sub Committee; PBS = Pharmaceutical Benefits Scheme

~~6.69~~6.71 Figure 5 presents the linear growth trendline of AAIs, based on the total services of AAIs (PBS items 8697R, 8698T and 12655C) in year 2014 to 2024, as analysed during the evaluation.

Figure 5: The linear growth trendline of AAIs, based on the total services of AAIs (PBS items 8697R, 8698T and 12655C) in year 2014 to 2024.



Source: Constructed during the evaluation using total services reported by Services Australia
https://medicarestatistics.humanservices.gov.au/VEA0032/SAS.Web/statistics/pbs_item.html
PBS = Pharmaceutical Benefits Schedule; 8697R = item code for EpiPen Jr 0.15 mg; 8698T = item code for Epipen 0.3 mg; 12655C = item code for Anapen 0.5 mg.
Note: Number 1 to 11 on the x-axis represent years 2014 to 2024

~~6.70~~6.72 Based on a linear forecast of the AAIs utilisation over the period from 2014 to 2024, services in a given year (y) can be estimated using the equation y=4391x + 105843, where x is a time index (x=1,2,3,…) corresponding to calendar years (2014, 2015, 2016,...). Using this linear projection, the evaluation estimated the total services to increase from 158,535 scripts in year 2025 to 184,881 scripts in year 2031, with an annual growth rate ranging from 2.4 to 2.8%, depending on the reference year. Accordingly, the estimated growth rate of 3.52% in the submission may be overestimated. The Sub-Committees agreed with the commentary that the growth rate was likely overestimated and should be 2.4 to 2.8%.

~~6.71~~6.73 The submission assumed a one-to-one substitution rate for neffy (1 mg and 2 mg) relative to AAI (0.15 mg, 0.3 mg, and 0.5 mg), on the basis that utilisation patterns and device replacement rates would be equivalent for both neffy and EpiPen. However, this assumption was uncertain, as it does not account for the likelihood that some patients may carry both emergency treatments, particularly in the short term. The PSCR included feedback received from clinicians at an advisory board indicated that they will strongly discourage the use of multiple device types to avoid confusion and will educate patients that all devices are equivalent and there is no need to carry alternative devices as 'back up'. The Sub-Committees noted this advice but agreed with the evaluation and considered that there would be patients who would carry both devices, at least in the short term, given the potentially life-threatening outcome of anaphylaxis. Further, the more compact size of neffy and its stability at higher temperatures may lead to 'back up' devices being stored in a car, or on a person,

particularly in hot and/or remote areas in Australia. The Sub-Committees also noted that patients may access neffy on the PBS prior to the expiry of their EpiPen.

~~6.72~~6.74 The Sub-Committees noted that there would be a reduction in prescription frequency for the 2mg dose of neffy due to the longer shelf life. The pre-PBAC response presented updated estimates that apply an overall substitution rate of EpiPen:neffy of 1:0.88 (see paragraph 6.81).

~~6.73~~6.75 Moreover, the submission did not provide evidence that patients would use neffy at the same clinical threshold as AAIs during an anaphylaxis reaction (i.e. patients potentially use neffy for less severe allergic reactions), which could lead to differences in utilisation and replacement rates. The PSCR stated that current ASCIA guidelines that have been in place for many years stipulate that, regardless of dosage form, adrenaline should be used at the first sign of anaphylaxis as per their ASCIA action plan. The TGA indications for both EpiPen and neffy require adrenaline to be used at the first sign of anaphylaxis and there is no evidence that neffy would be used for less severe reactions. Emerging real-world evidence from the US also demonstrates comparable usage patterns for neffy to injectable AAIs. The Sub-Committees discussed the consumer input that fear of receiving or administering an injection can lead to a delay in administration of adrenaline, and that having a nasal spray option may reduce this reluctance to promptly treat anaphylaxis.

6.76 The estimated financial implications of listing neffy, based on the submission's approach and using the alternative linear growth rate calculated during the evaluation, are presented in

6.77

~~6.74~~6.79 Table 14.

Table 14: Estimated use and financial implications

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Estimated extent of use						
Number of prescriptions dispensed	[redacted][1]	[redacted][3]	[redacted][4]	[redacted][5]	[redacted][7]	[redacted][7]
Number of prescriptions dispensed[a]	[redacted][1]	[redacted][2]	[redacted][4]	[redacted][5]	[redacted][6]	[redacted][7]
Estimated financial implications of neffy						
Cost to PBS/RPBS less copayments	$[redacted][8]	$[redacted][8]	$[redacted][9]	$[redacted][9]	$[redacted][9]	$[redacted][9]
Cost to PBS/RPBS less copayments[a]	$[redacted][8]	$[redacted][8]	$[redacted][9]	$[redacted][9]	$[redacted][9]	$[redacted][9]
Estimated financial implications for adrenaline auto injectors						
Cost to PBS/RPBS less copayments	-$[redacted][8]	-$[redacted][8]	-$[redacted][8]	-$[redacted][9]	-$[redacted][9]	-$[redacted][9]
Cost to PBS/RPBS less copayments[a]	-$[redacted][8]	-$[redacted][8]	-$[redacted][8]	-$[redacted][9]	-$[redacted][9]	-$[redacted][9]
Net financial implications						
Net cost to PBS/RPBS	$[redacted][8]	$[redacted][8]	$[redacted][8]	$[redacted][8]	$[redacted][8]	$[redacted][8]
Net cost to PBS/RPBS[a]	$[redacted][8]	$[redacted][8]	$[redacted][8]	$[redacted][8]	$[redacted][8]	$[redacted][8]

Source: Table 4.2.6, p154; Table 4.4.1, p157; and Table 4.5.1, p158 of the submission.
PBS = Pharmaceutical Benefits Scheme; RPBS = Repatriation Pharmaceutical Benefits Scheme.
[a] Costs and figures were updated during the evaluation using a linear forecast based on the service volumes for the period from 2014 to 2024.
The redacted values correspond to the following ranges:
[1] 5,000 to < 10,000
[2] 20,000 to < 30,000
[3] 30,000 to < 40,000
[4] 50,000 to < 60,000
[5] 70,000 to < 80,000
[6] 90,000 to < 100,000
[7] 100,000 to < 200,000
[8] $0 to < $10 million
[9] $10 million to < $20 million

~~6.75~~6.80 The total cost to the PBS/RPBS of listing neffy was estimated to be $0 to < $10 million in Year 6, and a total of $10 million to < $20 million in the first 6 years of listing. Including the cost savings from reduced hospitalisations due to early administration of adrenaline with neffy reduced the overall financial impact to the PBS/RPBS by 53%, to $0 to < $10 million in Year 6 and a total of $0 to < $10 million in the first 6 years of listing, although it is noted that hospital savings will not be a realised saving to the Australian Government. Furthermore, the analysis assumed that patients lacking confidence with EpiPen would feel confident using neffy, leading to earlier intervention and fewer hospitalisations. However, no empirical evidence was provided to substantiate the link between device preference and clinical outcomes.

~~6.76~~6.81 Using a linear forecast based on the service volumes for the period from 2014 to 2024 and not including the cost savings from reduced hospitalisations, the overall financial impact would be $0 to < $10 million in Year 1, increasing to $0 to < $10 million in Year 6, with a total of $10 million to < $20 million in the first 6 years of listing.

~~6.77~~6.82 The results were highly sensitive to assumptions regarding utilisation rate and onshore shelf life. As stated in Table 13, the uptake rate was uncertain, and increasing the uptake rate from [redacted]% to [redacted]% in Year 1 to [redacted]% to [redacted]% by Year 6 increased the estimated financial impact by 16%. When a 25% increase in shelf-life of neffy relative to EpiPen (30 months versus 24 months) was assumed, no cost-saving to the PBS/RPBS were realised. Cost savings were only observed when the on-shore shelf-life of EpiPen was

less than 12 months or under scenarios of high utilisation, such as annual refill of prescription.

~~6.78~~6.83 The Sub-Committees considered that the uptake rate was a significant driver of PBS costs, and that using the upper bound of the sensitivity analysis would be the most appropriate, starting with year 3 uptake in year 1 (█%, █%, █%, █%, █% and █% in Years 1 to 6 respectively). This resulted in an increase in the net cost to the PBS/RPBS in the first 6 years of listing to $20 million to < $30 million. Costs could be higher if patients carrying both devices is taken into account.

~~6.79~~6.84 The pre-PBAC response updated financial estimates using a substitution rate of EpiPen:neffy of 1:0.88 and uptake/switch rate using the sensitivity analysis upper bound estimates (█%, █%, █%, █%, █%, █%).

Table 15: Summary table of estimated utilisation rates and financial impact of neffy and AAI prescriptions

Variable	Year 1 (2026)	Year 2 (2027)	Year 3 (2028)	Year 4 (2029)	Year 5 (2030)	Year 6 (2031)
Scenario: substitution rate of 1:0.88 using base case uptake rates						
Uptake/switch rates: Base case	[redacted]%	[redacted]%	[redacted]%	[redacted]%	[redacted]%	[redacted]%
Total PBS + RPBS neffy scripts dispensed	[redacted][3]	[redacted][4]	[redacted][5]	[redacted][6]	[redacted][7]	[redacted][8]
Total PBS + RPBS AAI scripts replaced	-[redacted][3]	-[redacted][9]	-[redacted][5]	-[redacted][6]	-[redacted][10]	-[redacted][10]
Net cost PBS/RPBS: Financial impact of listing neffy	$[redacted][1]	$[redacted][1]	$[redacted][1]	$[redacted][2]	$[redacted][2]	$[redacted][2]
Net cost PBS/RPBS: Financial impact of AAI displaced	-$[redacted][1]	-$[redacted][1]	-$[redacted][1]	-$[redacted][2]	-$[redacted][2]	-$[redacted][2]
Estimated financial impact to PBS & RPBS	**$[redacted][1]**	**$[redacted][1]**	**$[redacted][1]**	**$[redacted][1]**	**$[redacted][1]**	**$[redacted][1]**
Scenario: substitution rate of 1:0.88 using upper bound uptake rates						
Uptake/switch rates: Upper bound	[redacted]%	[redacted]%	[redacted]%	[redacted]%	[redacted]%	[redacted]%
Total PBS + RPBS neffy scripts dispensed	[redacted][11]	[redacted][12]	[redacted][13]	[redacted][6]	[redacted][8]	[redacted][10]
Total PBS + RPBS AAI scripts replaced	-[redacted][11]	-[redacted][12]	-[redacted][6]	-[redacted][7]	-[redacted][10]	-[redacted][10]
Net cost PBS/RPBS: Financial impact of listing neffy	$[redacted][1]	$[redacted][1]	$[redacted][2]	$[redacted][2]	$[redacted][2]	$[redacted][2]
Net cost PBS/RPBS: Financial impact of AAI displaced	-$[redacted][1]	-$[redacted][1]	-$[redacted][1]	-$[redacted][2]	-$[redacted][2]	-$[redacted][2]
Estimated financial impact to PBS & RPBS	**$[redacted][1]**	**$[redacted][1]**	**$[redacted][1]**	**$[redacted][1]**	**$[redacted][1]**	**$[redacted][1]**

Source: Pre-PBAC response

The redacted values correspond to the following ranges:

[1] *$0 to < $10 million*
[2] *$10 million to < $20 million*
[3] *5,000 to < 10,000*
[4] *20,000 to < 30,000*
[5] *50,000 to < 60,000*
[6] *70,000 to < 80,000*
[7] *80,000 to < 90,000*
[8] *90,000 to < 100,000*
[9] *30,000 to < 40,000*
[10] *100,000 to < 200,000*
[11] *10,000 to < 20,000*
[12] *40,000 to < 50,000*
[13] *60,000 to < 70,000*

Quality Use of Medicines

~~6.80~~6.85 The submission stated that a comprehensive patient education and training resources will be provided to ensure the safe and effective use of self-administered adrenaline nasal spray. These resources will include a Consumer Medicine Information leaflet, visual aids to facilitate correct intranasal administration, training modules and demonstration devices for both patients and carers. The sponsor is also seeking federal Poisons Schedule and state legislation changes to enable use of neffy in schools, ensuring its availability of an alternative adrenaline device to support national anaphylaxis management.

~~6.81~~6.86 The Sub-Committees noted the positive public consultation feedback on the inclusion of a nasal spray as a treatment option for anaphylaxis. Pragmatic and widespread QUM will be necessary, particularly around the administration of neffy as it contains only one spray per device and cannot be primed. If a second dose is required, it is preferable to be administered in the same nostril as the first dose which may not be intuitive to patients and carers.

For more detail on PBAC's view, see section 7 PBAC outcome.

7 PBAC Outcome

7.1 The PBAC recommended the listing of neffy® nasal spray, a new form of adrenaline (epinephrine), as a General Schedule listing for the emergency treatment of acute severe allergic reactions in children or adults at significant risk of anaphylaxis. The PBAC considered that this new form of adrenaline (epinephrine) was equivalent to the auto-injectable form, EpiPen, in terms of alleviating symptoms of anaphylaxis. However, the PBAC considered that there were potential reductions in hospital admissions from improvements in appropriate and timely use of neffy compared to EpiPen, and potential cost savings from reduced prescription refills for expired devices, for which a small price premium over EpiPen was justified.

7.2 The equi-effective doses of neffy and EpiPen are a one-for-one substitution, based on the dosing schedule as specified in their respective PIs:

- EpiPen 0.3 mg/0.3 mL = neffy 2 mg/0.1 mL
- EpiPen 0.15 mg/0.3 mL = neffy 1 mg/0.1 mL

7.3 The PBAC noted the submission claim that that adrenaline remains underused in anaphylaxis, and delayed administration is associated with poorer clinical outcomes. The PBAC considered there was an identified clinical need for an alternative adrenaline product, particularly given previous shortages with supply of adrenaline[16]. The PBAC noted that although no individual consumers provided input to support this submission, the input from a clinical nurse consultant and multiple consumer and medical organisations supported having a needle-free option, which may be easier to carry and use for some patients. The PBAC noted the consumer input highlighted that neffy was more stable to temperature variations and has a longer shelf life than EpiPen, potentially resulting in less frequent replacement, which is particularly important for rural and remote communities.

7.4 The PBAC noted the proposed restriction was inconsistent with the TGA indication which limits neffy to adults and children aged 4 years and older weighing 15 kg or greater. In contrast, the EpiPen TGA indication does not limit use by age. The PBAC noted the TGA Delegate's concerns that there was insufficient evidence that neffy achieves pharmacokinetic (PK) equivalence to parenteral adrenaline (i.e., AAIs) in children under 4 years, and that there are practical challenges to administering neffy effectively in this age group such as nasal congestion, vomiting, agitation, and anatomical limitations during acute anaphylaxis, and self-administration in this age group was inappropriate. The PBAC agreed with the Sub-Committees that it would be

[16] A 2020 DUSC review noted intermittent medicine shortages affecting supply of adrenaline auto-injectors in Australia (Adrenaline-autoinjectors-analysis-dusc-prd-2020-10v2.PDF). The PBAC has also acknowledged the recurring issue of shortage of adrenaline products in its previous considerations of adrenaline auto-injector devices (Anapen®, November 2020; Jext®, July 2024). Also see paragraph 2.3.

appropriate to restrict use of neffy to patients aged 4 years or older who weigh 15 kg or more in the PBS restriction.

7.5 The PBAC noted the submission's request for brand substitution ('a' flagging) with the AAIs. Given the age specification for neffy differs to the AAI restrictions, the PBAC considered 'a' flagging of the neffy 1 mg strength nasal spray to 150 microgram pen devices would be inappropriate, as these AAI devices may be used in children under 4 years. In addition, the PBAC considered 'a' flagging would pose unreasonable QUM issues given the administration of neffy of either strength requires specific comprehensive patient education and training. Therefore, the PBAC did not endorse 'a' flagging for the neffy 2 mg strength to the 300 microgram pen devices either, as it did not consider the different forms should be considered equivalent at the pharmacy level for the purposes of substitution.

7.6 The PBAC advised that the restriction wording for neffy should align with the existing restrictions except for the differences in age and weight, and noted that flow-on restriction changes to the Caution and Administrative notes for the AAIs are required to acknowledge the different administration devices and techniques.

7.7 The PBAC discussed it would be interested in reviewing barriers to access under the current restrictions for adrenaline in relation to prescriber type and discharge from hospital or an emergency department. It was noted that these requirements may create access issues, particularly in rural and remote locations where access to specialist prescribers and emergency treatment settings is difficult. The PBAC requested the PBS restrictions for all adrenaline products be reviewed to consider barriers to access as part of a separate post market review project for future consideration.

7.8 The PBAC accepted the nominated comparator of PBS-listed AAIs (EpiPen, EpiPen Jr., Adrenaline Viatris, Adrenaline Viatris Jr., and Anapen) as the main comparator. It was noted, EpiPen was the predominant brand of adrenaline supplied in Australia.

7.9 The PBAC noted that in the absence of a head-to-head trial, the submission relied on two pharmacokinetic and pharmacodynamic (PK/PD) studies and a clinical study to demonstrate that neffy was non-inferior to AAIs in terms of effectiveness and safety. The PBAC noted the TGA Delegate's considerations (see paragraphs 6.21 and 6.22) and the Committee accepted the submission's claim that neffy is non-inferior in terms of comparative effectiveness to the AAIs, supported by PK/PD for patients aged 4 years and older who weighed more than 15 kgs.

7.10 The PBAC noted the safety profile in adults and children, as noted in the TGA PI, and accepted that neffy is non-inferior but with different safety compared with AAIs.

7.11 The PBAC noted the submission claimed superiority in terms of patient acceptability based on the patient preferences elicited from a discrete choice experiment (DCE). The PBAC considered it was reasonable to expect that the different attributes of neffy would be valued by patients, however the PBAC agreed with the Sub-Committees that

it was unclear to what extent valued differences in pack attributes lead to changes in clinical outcomes for patients.

7.12 The PBAC noted the submission requested a price premium of [redacted]% over the EpiPen AEMP. The PBAC noted the submission supported the proposed premium with multiple approaches: a willingness to pay (WTP) estimate derived from a DCE quantifying consumer preferences for neffy's attributes; a cost-minimisation approach (CMA) which included a cost offset for decreased utilisation of neffy 2 mg devices due to their longer shelf-life compared to EpiPen (30 months compared to 24 months); and a cost-consequence analysis (CCA) estimating potential reductions in hospital admissions based on earlier adrenaline administration, driven by better device acceptability and availability.

7.13 The PBAC agreed with the Sub-Committees that the DCE reflects qualitative/attitudinal views rather than direct evidence that a change in self-reported confidence ratings would lead to a change in actual behaviour and utilisation. The PBAC noted the CMA presented in the submission was uncertain as it was based on assumed shelf life of adrenaline devices and the estimated utilisation of devices per patient each year. The PBAC noted the additional information provided in the pre-PBAC response in support of current shelf-life and availability of EpiPen across Australian pharmacies (see paragraph 6.56) and the willingness of the sponsor to ensure efficient supply chain to expedite the delivery of neffy from the US to Australia and facilitate the longest possible onshore shelf-life (see paragraph 6.57). However, it was considered the translation of additional shelf-life to realised gains in reduced prescription numbers was difficult to accurately quantify and relied on behaviours of suppliers, pharmacies and patients that remain uncertain in future clinical practice.

7.14 The PBAC noted the CCA presented in the submission did not factor in the cost of increased use of neffy when presenting cost savings due to an estimated reduction in anaphylaxis-related hospitalisations. The evaluation calculated that a premium of [redacted]%–[redacted]% would achieve a net zero cost to Government, based on the submission's assumption of hospitalisation costs avoided and increased neffy use of between 6%–10% during an attack. The PBAC considered the number of hospitalisations avoided was inherently uncertain.

7.15 The PBAC noted the Sub-Committees suggested a CMA may have been a more appropriate primary analysis, specifically one incorporating both the anticipated increase in neffy utilisation and the corresponding assumed reduction in hospitalisations compared with EpiPen. The pre-PBAC response provided a revised CMA which included a reduction in anaphylaxis-related hospitalisations as well as fewer replacement prescriptions due to expiry, resulting in a net savings to Government of $0 to < $10 million at the requested neffy price (see Table 12).

7.16 The PBAC noted there were several uncertainties with the revised CMA (see paragraph 6.67). Overall, the PBAC did not consider the calculations robustly supported the proposed premium. The PBAC considered that there was potential benefit of earlier, appropriate use of adrenaline leading to reduced hospitalisations and a likely increase

in shelf-life which would reduce replacement of expired devices (noting the additional evidence presented in the pre-PBAC response, see paragraph 6.56). However, the overall impact is uncertain and the cost to Government may increase or decrease depending on patient behaviour, risk of anaphylaxis, pharmacy stocking, and refills of prescriptions. Overall, the PBAC considered a smaller premium over the price of the AAIs of up to [redacted]% was reasonable for neffy to account for potential increased appropriate use of adrenaline during and anaphylactic attack and potential reduction in prescription refills due to longer shelf-life.

7.17 For estimated utilisation, the PBAC agreed with the Sub-Committees that the growth rate was likely overestimated and should be 2.4 to 2.8%, based on a linear forecast of the AAIs utilisation over the period from 2014 to 2024. The PBAC noted the Sub-Committees advised that uptake was likely to be higher in the earlier years and agreed with the Sub-Committees that increasing the uptake from the upper bound of the sensitivity analysis to reflect uptake starting at [redacted]% in year 1 and increasing [redacted]% annually up to [redacted]% in year 6 would be reasonable. The PBAC noted the pre-PBAC response updated estimates assuming 1:0.88 replacement of Epipen:neffy. The PBAC also noted the uncertainty of replacement given a reduction in prescription frequency for the 2 mg dose of neffy due to the longer shelf life, but also assumed increased early use of neffy and potential for patients to carry both devices, particularly in the early years of neffy being available. As such, the PBAC recommended 1:1 replacement was a more conservative estimate of potential increase in the net PBS cost to Government.

7.18 The PBAC advised, under Section 101 (4AACD) of the *National Health Act*, that adrenaline (epinephrine), nasal spray and adrenaline (epinephrine), injection should not be considered equivalent for the purposes of substitution (i.e., 'a' flagged in the Schedule with a NOTE stating PBS of one form and PBS of another form are equivalent for the purposes of substitution).

7.19 The PBAC noted that its recommendation was on a cost-minimisation basis and advised that, because adrenaline (epinephrine), nasal spray is not expected to provide a substantial and clinically relevant improvement in efficacy, or reduction of toxicity, over adrenaline (epinephrine), injection, or not expected to address a high and urgent unmet clinical need given the presence of an alternative therapy, the criteria prescribed by the *National Health (Pharmaceuticals and Vaccines – Cost Recovery) Regulations 2022* for Pricing Pathway A were not met.

7.20 The PBAC noted that this submission is not eligible for an Independent Review as it received a positive recommendation.

Outcome:
Recommended

8 Recommended listing

8.1 Add new item and amend restrictions (additions show in italics and deletions are in strikethrough):

MEDICINAL PRODUCT medicinal product pack	PBS item code	Max. qty packs	Max. qty units	№.of Rpts	Available brands
ADRENALINE (EPINEPHRINE)					
adrenaline (epinephrine) 150 microgram/0.3 mL injection, 0.3 mL pen device	8697R	2	2	0	Adrenaline Jr Viatris[a] Anapen Junior 150[a] EpiPen Jr[a]
adrenaline (epinephrine) 300 microgram/0.3 mL injection, 0.3 mL pen device	8698T	2	2	0	Adrenaline Viatris[b] Anapen Junior 300[b] EpiPen[b]
adrenaline (epinephrine) 1 mg/actuation nasal spray, 1 actuation	*NEW1*	*1*	*2*	*0*	*neffy*
adrenaline (epinephrine) 2 mg/actuation nasal spray, 1 actuation	*NEW2*	*1*	*2*	*0*	*neffy*

Concept ID (for internal Dept. use)		**Category / Program:** ☒ GENERAL - General Schedule (Code GE)
		Prescriber type: ☒Medical Practitioners ☒Nurse practitioners
		Restriction type: ☒Authority Required (immediate assessment) – Telephone/Online
Prescribing rule level		**Caution:** *Adrenaline* ~~Non-Anapen and Anapen~~ products ~~for the emergency administration of adrenaline~~ have different administration techniques. These products should not be prescribed to the same patient without training in their use. Pharmacists should ensure that patients are educated regarding the product differences upon dispensing.
		Administrative Note: The ~~auto-injector~~ *adrenaline devices* should be provided in the framework of a comprehensive anaphylaxis prevention program and an emergency action plan including training in recognition of the symptoms of anaphylaxis and the use of the device. (For further information see the Australasian Society of Clinical Immunology and Allergy website at www.allergy.org.au.)
		Administrative Advice: No increase in the maximum quantity or number of units may be authorised.
		Administrative Advice: No increase in the maximum number of repeats may be authorised.
		Administrative Advice: Applications for authorisation under this restriction may be made in real time using the Online PBS Authorities system (see www.servicesaustralia.gov.au/HPOS) or by telephone by contacting Services Australia on 1800 888 333.
Restriction Summary / Treatment of Concept:		
		Indication: Acute allergic reaction with anaphylaxis
		Treatment phase: Initial sole PBS-subsidised supply for anticipated emergency treatment
		Clinical criteria:
		Patient must have been assessed to be at significant risk of anaphylaxis by, or in consultation with a clinical immunologist; or
		Patient must have been assessed to be at significant risk of anaphylaxis by, or in consultation with an allergist; or
		Patient must have been assessed to be at significant risk of anaphylaxis by, or in consultation with a paediatrician; or
		Patient must have been assessed to be at significant risk of anaphylaxis by, or in consultation with a respiratory physician
		Population criteria:
		Patient must be aged 4 years or older

	AND
	Population criteria:
	Patient must weigh 15 kg or more
	Prescribing Instructions: The name of the specialist consulted must be provided at the time of application for initial supply.
Restriction Summary 8695 / Treatment of Concept: 8734	
Concept ID (for internal Dept. use)	**Category / Program:** ☒ GENERAL - General Schedule (Code GE)
	Prescriber type: ☒Medical Practitioners ☒Nurse practitioners
	Restriction type: ☒Authority Required (immediate assessment)
	Indication: Acute allergic reaction with anaphylaxis
	Treatment Phase: Initial sole PBS-subsidised supply for anticipated emergency treatment
	Clinical criteria:
	Patient must have been discharged from hospital or an emergency department after treatment with adrenaline (epinephrine) for acute allergic reaction with anaphylaxis
	Population criteria:
	Patient must be aged 4 years or older
	AND
	Population criteria:
	Patient must weigh 15 kg or more
Restriction Summary 7351 / Treatment of Concept: 4947	
Concept ID (for internal Dept. use)	**Category / Program:** ☒ GENERAL - General Schedule (Code GE)
	Prescriber type: ☒Medical Practitioners ☒Nurse practitioners
	Restriction type: ☒Authority Required (immediate assessment)
	Indication: Acute allergic reaction with anaphylaxis
	Treatment Phase: Continuing sole PBS-subsidised supply for anticipated emergency treatment
	Clinical criteria:
	Patient must have previously been issued with an authority prescription for *any form of* this drug *for this indication*
	Population criteria:
	Patient must be aged 4 years or older
	AND
	Population criteria:
	Patient must weigh 15 kg or more

These restrictions may be subject to further review. Should there be any changes made to the restriction the sponsor will be informed.

9 Context for Decision

The PBAC helps decide whether and, if so, how medicines should be subsidised through the Pharmaceutical Benefits Scheme (PBS) in Australia. It considers applications regarding the listing of medicines on the PBS and provides advice about other matters relating to the operation of the PBS in this context. A PBAC decision in relation to PBS listings does not necessarily represent a final PBAC view about the merits of the medicine or the circumstances in which it should be made available

through the PBS. The PBAC welcomes applications containing new information at any time.

10 Sponsor's Comment

The sponsor had no comment.