PHARMAC
TE PĀTAKA WHAIORANGA

MEMORANDUM FOR CONSIDERATION BY CHIEF EXECUTIVE UNDER DELEGATED AUTHORITY

To: Chief Executive

From: Director of Operations

Date: March 2021

Proposal to widen access for secukinumab to psoriatic arthritis and ankylosing spondylitis via a multiproduct agreement (secukinumab, fingolimod and ciclosporin) with Novartis

Recommendations

It is recommended that having regard to the decision-making framework set out in PHARMAC's Operating Policies and Procedures you exercise your delegated authority and:

resolve to list a new pack size of secukinumab inj 150 mg per ml, 1 ml prefilled syringe, in the Oncology Agents and Immunosuppressants therapeutic group, Immunosuppressants – Monoclonal Antibodies subgroup in Section B and Part II of Section H of the Pharmaceutical Schedule from 1 May 2021 as follows (ex-manufacturer, excl. GST):

Chemical	Presentation	Brand	Pack Size	Price and subsidy
Secukinumab	Inj 150 mg per ml, 1 ml prefilled syringe	Cosentyx	1	$799.50

resolve to approve the amendments to the Pharmaceutical Schedule restrictions relating to secukinumab, adalimumab, etanercept and infliximab as set out in Appendix One of this paper;

resolve to approve the 2 February 2021 agreement with Novartis New Zealand Limited for the listing of secukinumab, fingolimod and ciclosporin;

note that new confidential rebates and subsidy and delisting protection periods would apply to the three products in this agreement;

resolve that the consultation on this proposal was appropriate, and no further consultation is required; and

note the PHARMAC Board delegated decision-making authority to the Chief Executive, at its 29 January 2021 meeting, in relation to the bundle proposal with Novartis New Zealand Limited for secukinumab, fingolimod and ciclosporin.

SUMMARY OF PROPOSAL				
Market data	**Year ending**	**30 Jun 2021**	**30 Jun 2022**	**30 Jun 2023**
	Number of patients	2,624	2,936	3,263
	Number of Māori or Pacific peoples	403	443	485
	Number of new patients	34	247	503
Community Pharmaceutical Expenditure	Subsidy (gross)	$10,500,000	$63,570,000	$66,640,000
	Net cost of community pharmaceuticals	($S 9(2)(b)	($S 9(2)(b)	($S 9(2)(b)
	Net present value	($S 9(2)(b)		
Hospital Pharmaceuticals	Expenditure (gross)	$0	$0	$0
	Net cost to DHBs	$0	$0	$0
	Net present value	$0		
TOTAL - Combined Pharmaceutical Budget (CPB)	Net cost to CPB	($S 9(2)(b)	($S 9(2)(b)	($S 9(2)(b)
	Net present value	($S 9(2)(b)		
Other DHB costs	Net other costs to DHBs	($833)	($10,000)	($40,000)
	Net present value	($200,000)		
Total	Total cost to DHBs	($S 9(2)(b)	($S 9(2)(b)	($S 9(2)(b)
	Net present value cost to DHBs	($S 9(2)(b)		

Notes:
1. Subsidy (gross) and expenditure (gross) = forecast of spending at the proposed price and subsidy.
2. Net cost to DHBs = forecast of change in spending compared with status quo.
3. All pharmaceutical costs are ex-manufacturer.
4. Net other costs to DHBs = distribution costs.
5. All costs are ex-GST.
6. NPV is calculated over 5 years using an annual discount rate of 8%.
7. Calculations are in A1479341.

SUMMARY OF SECUKINUMAB				
Brand Name	Cosentyx	**Chemical Name**	Secukinumab	
Therapeutic Group	Oncology Agents and Immunosuppressants - Monoclonal Antibodies	**Presentation**	Injection 150 mg per ml, 1 ml prefilled syringe	
Supplier	Novartis New Zealand Limited	**Pharmaceutical Type**	Net price change; New pack size listing	
MOH Restrictions	Prescription medicine	**Application Date**	31 July 2020	
Current subsidy	$1,599.00 per 2 prefilled syringes			
Proposed subsidy	$1,599.00 per 2 prefilled syringes	**Manufacturer's surcharge**	Nil	
Proposed restriction	Special Authority for plaque psoriasis (first-line and second-line biologic); psoriatic arthritis (first-line biologic); ankylosing spondylitis (second-line biologic)			
OP	No	**Section F**	No	

Market data	**Year ending**	**30 Jun 2021**	**30 Jun 2022**	**30 Jun 2023**
	Number of patients	565	827	1,102
	Number of new patients	34	247	503
	Number of Māori or Pacific peoples	65	95	127
Community Pharmaceutical Expenditure	Subsidy (gross)	$7,970,000	$48,300,000	$51,040,000
	Net cost of community pharmaceuticals	($S 9(2)	($S 9(2)	$S 9(2)(b)
	Net present value	$S 9(2)(b)		
Hospital Pharmaceuticals	Expenditure (gross)	$0	$0	$0
	Net cost to DHBs	$0	$0	$0
	Net present value	$0		
TOTAL - Combined Pharmaceutical Budget (CPB)	Net cost to CPB	($S 9(2)	($S 9(2)	$S 9(2)(b)
	Net present value	$S 9(2)(b)		
Other DHB costs	Net other costs to DHBs	($833)	($10,000)	($40,000)
	Net present value	($200,000)		
Total	Total cost to DHBs	($S 9(2)	($S 9(2)	$S 9(2)(b)
	Net present value cost to DHBs	$S 9(2)(b)		

Notes:
1. Subsidy (gross) and expenditure (gross) = forecast of spending at the proposed price and subsidy.
2. Net cost to DHBs = forecast of change in spending compared with status quo.
3. All pharmaceutical costs are ex-manufacturer.
4. Net other costs to DHBs = distribution costs.
5. All costs are ex-GST.
6. NPV is calculated over 5 years using an annual discount rate of 8%.
7. Calculations are in A1479341.

SUMMARY OF FINGOLIMOD				
Brand Name	Gilenya	**Chemical Name**	Fingolimod	
Therapeutic Group	Nervous System - Multiple Sclerosis Treatments	**Presentation**	Cap 0.5 mg	
Supplier	Novartis	**Pharmaceutical Type**	Net price change	
MOH Restrictions	Prescription medicine	**Application Date**	31 July 2020	
Current subsidy	$ 2,200.00 per 28 capsules			
Proposed subsidy	$ 2,200.00 per 28 capsules	**Manufacturer's surcharge**	Nil	
Proposed restriction	No change; Special Authority for multiple sclerosis			
OP	No	**Section F**	No	

Market data	**Year ending**	**30 Jun 2021**	**30 Jun 2022**	**30 Jun 2023**
	Number of patients affected	430	430	430
	Number of Māori or Pacific peoples	12	12	12
Community Pharmaceutical Expenditure	Subsidy (gross)	$2,150,000	$12,970,000	$13,240,000
	Net cost of community pharmaceuticals	($S 9(2)(b)	($S 9(2)(b)	($S 9(2)(b)
	Net present value	($S 9(2)(b)		
Hospital Pharmaceuticals	Expenditure (gross)	$0	$0	$0
	Net cost to DHBs	$0	$0	$0
	Net present value	$0		
TOTAL - Combined Pharmaceutical Budget (CPB)	Net cost to CPB	($S 9(2)(b)	($S 9(2)(b)	($S 9(2)(b)
	Net present value	($S 9(2)(b)		
Other DHB costs	Net other costs to DHBs	$0	$0	$0
	Net present value	$0		
Total	Total cost to DHBs	($S 9(2)(b)	($S 9(2)(b)	($S 9(2)(b)
	Net present value cost to DHBs	($S 9(2)(b)		

Notes:
1. Subsidy (gross) and expenditure (gross) = forecast of spending at the proposed price and subsidy.
2. Net cost to DHBs = forecast of change in spending compared with status quo.
3. All pharmaceutical costs are ex-manufacturer.
4. Net other costs to DHBs = distribution costs.
5. All costs are ex-GST.
6. NPV is calculated over 5 years using an annual discount rate of 8%.
7. Calculations are in A1479341.

SUMMARY OF CICLOSPORIN			
Brand Name	Neoral	**Chemical Name**	Ciclosporin
Therapeutic Group	Oncology Agents and Immunosuppressants - Other Immunosuppressants	**Presentation**	Oral liq 100 mg per ml, Cap 25 mg, Cap 100 mg, Cap 50 mg
Supplier	Novartis	**Pharmaceutical Type**	Net price change
MOH Restrictions	Prescription medicine	**Application Date**	31 July 2020

Formulation	**Current subsidy**	**Proposed subsidy**
Oral liq 100 mg per ml	$198.13 per 50 ml	$198.13 per 50 ml
Cap 25 mg	$44.63 per 50 capsules	$44.63 per 50 capsules
Cap 50 mg	$88.91 per 50 capsules	$88.91 per 50 capsules
Cap 100 mg	$177.81 per 50 capsules	$177.81 per 50 capsules

Proposed restriction	No change; No restrictions	**Manufacturer's surcharge**	Nil
OP	No	**Section F**	No

Market data	**Year ending**	**30 Jun 2021**	**30 Jun 2022**	**30 Jun 2023**
	Number of patients affected	1,629	1,679	1,731
	Number of Māori or Pacific peoples	326	336	346
Community Pharmaceutical Expenditure	Subsidy (gross)	$380,000	$2,300,000	$2,360,000
	Net cost of community pharmaceuticals	($S 9(2))	($S 9(2)(b))	($S 9(2)(b))
	Net present value	($S 9(2)(b))		
Hospital Pharmaceuticals	Expenditure (gross)	$0	$0	$0
	Net cost to DHBs	$0	$0	$0
	Net present value	$0		
TOTAL - Combined Pharmaceutical Budget (CPB)	Net cost to CPB	($S 9(2))	($S 9(2)(b))	($S 9(2)(b))
	Net present value	($S 9(2)(b))		
Other DHB costs	Net other costs to DHBs	$0	$0	$0
	Net present value	$0		
Total	Total cost to DHBs	($S 9(2))	($S 9(2)(b))	($S 9(2)(b))
	Net present value cost to DHBs	($S 9(2)(b))		

Notes:
1. Subsidy (gross) and expenditure (gross) = forecast of spending at the proposed price and subsidy.
2. Net cost to DHBs = forecast of change in spending compared with status quo.
3. All pharmaceutical costs are ex-manufacturer.
4. Net other costs to DHBs = distribution costs.
5. All costs are ex-GST.
6. NPV is calculated over 5 years using an annual discount rate of 8%.
7. Calculations are in A1479341.

EXECUTIVE SUMMARY

- The proposal is to widen access to secukinumab and amend the contractual arrangements to secukinumab, fingolimod and ciclosporin, from 1 May 2021, as follows:
    - Widening access for secukinumab to psoriatic arthritis and ankylosing spondylitis;
    - Amendment of the contractual arrangements for secukinumab (Cosentyx), resulting in a net price reduction and protection from delisting and subsidy reduction until 30 April 2023;
    - Amendment of the contractual arrangements for fingolimod (Gilenya) and ciclosporin capsules and oral liquid (Neoral), resulting in a net price reduction and protection from delisting and subsidy reduction until 31 December 2022.
- Secukinumab is a monoclonal antibody indicated for use in the treatment of plaque psoriasis, psoriatic arthritis and ankylosing spondylitis. Secukinumab is already funded for the treatment of moderate to severe plaque psoriasis.
- Secukinumab is an IL-17A inhibitor (a "biologic") and would offer patients with psoriatic arthritis and ankylosing spondylitis another line of treatment with a different mechanism of action to the currently funded biologic treatments. We estimate 891 people with psoriatic or ankylosing spondylitis would be eligible for treatment under the proposed criteria by FYE 30 June 2025. Approximately 34 people would be eligible for treatment in FYR 2021.
- Fingolimod is an immunomodulating treatment that is funded for use in multiple sclerosis, subject to funding restrictions. No amendments to the current funding criteria for fingolimod are proposed. Ciclosporin is an immunosuppressant treatment that is funded for use in a range of immune and inflammatory diseases and is not subject to funding restrictions.
- Direct negotiations with Novartis were successful in reaching a commercial agreement that meets the health need of people with psoriatic arthritis or ankylosing spondylitis. The overall cost-effectiveness of the bundle proposal is estimated as S 9(2)(b)(ii), 9 quality adjusted life years (QALYs) per $1 million versus the status quo.
- The bundle proposal is ranked #S 9(2) on the current Options for Investment priority list (as at March 2021). Individually, secukinumab for psoriatic arthritis (first line) is ranked #S 9(2) and secukinumab for ankylosing spondylitis (second line) is ranked #S 9(2); S 9(2)(b)(ii), 9(2)(ba)(i) & 9(2)(j)
S 9(2)(b)(ii), 9(2)(ba)(i) & 9(2)(j)
S 9(2)(b)(ii), 9(2)(ba)(i) & 9(2)(j)
- Consultation undertaken in February 2021 received 16 responses from a range of consumers, advocacy groups and clinicians. Responders were supportive of the proposal however several responders requested amendments to the proposed Special Authority criteria. Following consideration of the feedback, minor changes to the adalimumab, etanercept and infliximab Special Authority criteria have been made to allow patients to transition between biologic treatments. No other changes to the consulted proposal have been made. The feedback and consideration by PHARMAC staff are detailed in this paper.
- S 9(2)(b)(ii), 9(2)(ba)(i) & 9(2)(j)
S 9(2)(b)(ii), 9(2)(ba)(i) & 9(2)(j)
S 9(2)(b)(ii), 9(2)(ba)(i) & 9(2)(j)

- PHARMAC has released a Request for Proposals (RFP) for adalimumab in March 2021 and a competitive procurement process for fingolimod is planned for late 2022, both of which would reduce the expected savings from this proposal (in the case of adalimumab this is because the proposal assumes that patients would take secukinumab instead of a TNF inhibitor). However, as any potential savings are unknown, they have not been included in the base case financial analysis of this proposal. S 9(2)(b)(ii), 9(2)(ba)(i) & 9(2)(j)
S 9(2)(b)(ii), 9(2)(ba)(i) & 9(2)(j)
S 9(2)(b)(ii), 9(2)(ba)(i) & 9(2)(j)
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S 9(2)(b)(ii), 9(2)(ba)(i) & 9(2)(j)

Why proposal should be considered by the Chief Executive under Delegated Authority

The proposal involves a Schedule change that has an estimated Financial Impact (NPV) of greater than S 9(2)(b)(ii), 9(2)(ba)(i) & 9(2)(j) (when accounting for savings and costs associated with this proposal), however it:

- would not result in the Pharmaceutical budget or its future funding path being exceeded;
- would not be inconsistent with previous Board decisions;
- is not considered contentious by PHARMAC staff; and
- the Board delegated decision-making authority to the Chief Executive in relation to this bundle proposal with Novartis at its January 2021 meeting.

Please note that the Financial Impact (NPV) is calculated on the basis of the net present value of the proposed subsidy (ex-manufacturer exclusive of GST) over 5 years at a discount rate of 8% to be paid by the funder for the products and the forecast demand, taking into account any effect of the change on that demand, versus the status quo.

The Proposal

The proposal is to widen access and amend the contractual arrangements to secukinumab and amend the contractual arrangements for fingolimod and ciclosporin, from 1 May 2021, as follows:

- widening access for secukinumab to psoriatic arthritis and ankylosing spondylitis
- amendment of the contractual arrangements for secukinumab (Cosentyx), resulting in a net price reduction and protection from delisting and subsidy reduction until 30 April 2023
- amendment of the contractual arrangements for fingolimod (Gilenya) and ciclosporin capsules and oral liquid (Neoral), resulting in a net price reduction and protection from delisting and subsidy reduction until 31 December 2022.

No changes are proposed to the listing or contractual arrangements for ciclosporin inj 50 mg per ml, 5 ml ampoule (Sandimmun), listed in Part II of Section H of the Pharmaceutical Schedule.

Following negotiations an agreement was reached between Novartis and PHARMAC. This agreement, conditional on consultation and PHARMAC Board (or its delegate's) approval and dated 2 February 2021, is available as Appendix 2.

Bundle proposal overview

The following table summarises the key components of the multiproduct proposal:

Product	Indication	Listing type	Subsidy/ delisting protection	PTAC Priority	QALYs per $1 million (likely range)	Priority list position (March 2021)
New investments						
Secukinumab	Psoriatic arthritis (first-line)	Access widening	30 April 2023	Medium	S 9(2)	S 9
Secukinumab	Ankylosing spondylitis (second-line)	Access widening	30 April 2023	Medium	S 9	S 9
Amended contractual terms						
Secukinumab	Plaque psoriasis	Reduction in net price	30 April 2023	n/a	n/a	n/a
Fingolimod	Multiple Sclerosis	Reduction in net price	31 December 2022	n/a	n/a	n/a
Ciclosporin	Immunosuppression of various diseases	Reduction in net price	31 December 2022	n/a	n/a	n/a
Overall proposal						
Multiproduct proposal					S 9(2)	S 9

S 9(2)(b)(ii), 9(2)(ba)(i) & 9(2)(j)
S 9(2)(b)(ii), 9(2)(ba)(i) & 9(2)(j)
S 9(2)(b)(ii), 9(2)(ba)(i) & 9(2)(j)

Future Commercial Considerations

Market dynamics

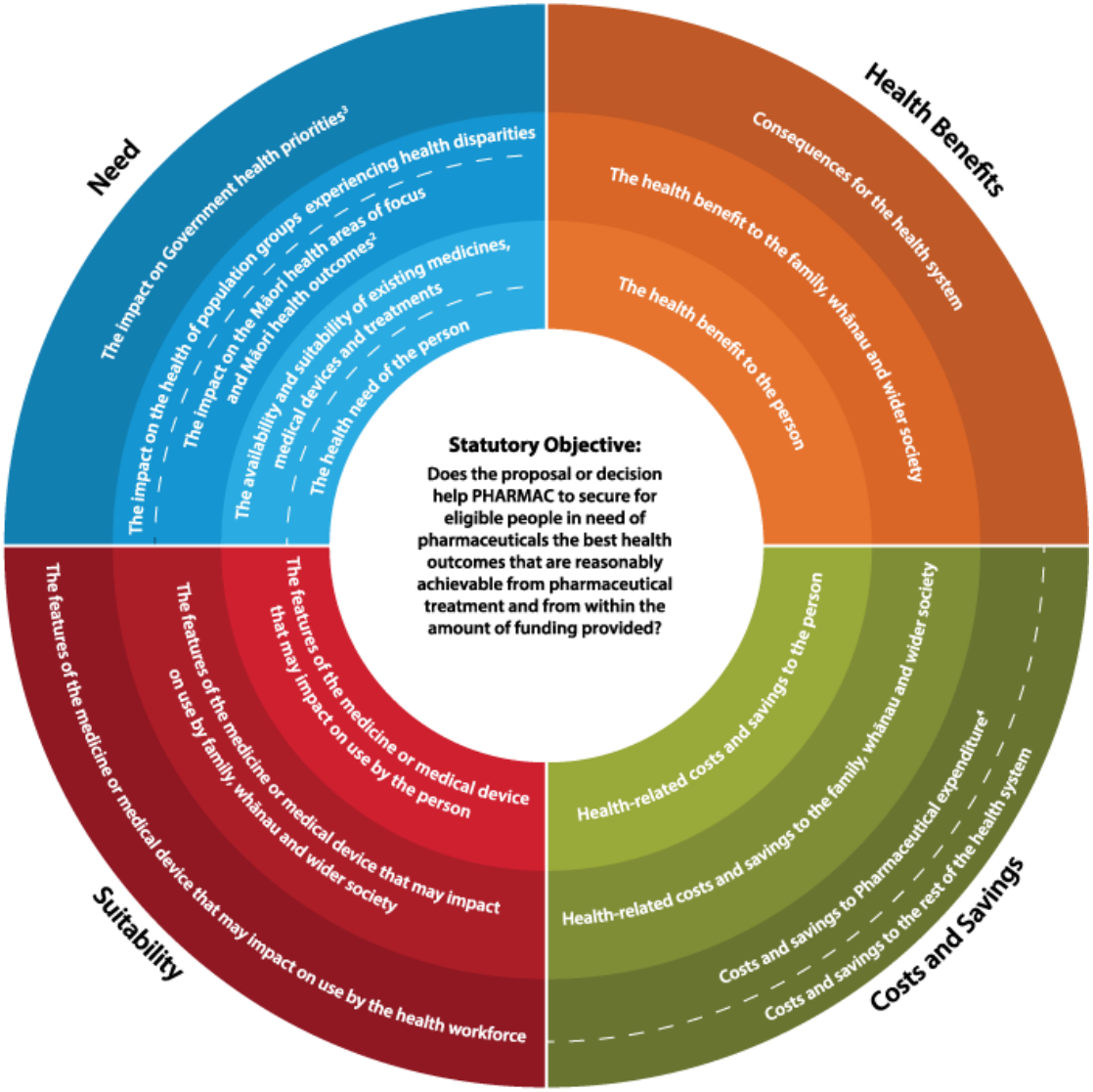
A summary of the market dynamics for each of the components is presented in the table below.

Product	Proposed subsidy and delisting protection end date	Chemical market dynamics
Secukinumab	30 April 2023	Novartis is the only supplier in New Zealand with Medsafe approval for secukinumab. It has a patent on this product until August 2025. It is likely that future biosimilar suppliers may enter this market, but there are no currently available biosimilar secukinumab products available internationally (based on EU and FDA approval data).
Fingolimod	31 December 2022	Novartis is the only supplier with active Medsafe approval for fingolimod, Apotex has approval (not currently available) but is actively leaving the New Zealand market, and Teva is in the process of obtaining Medsafe approval for its brand of fingolimod (additional evaluation started October 2020). There is potential for a competitive process for this market which may generate greater savings than those offered by Novartis. Planning for this has not yet begun and is unlikely to be a priority in the short term (eg next 6 months) until the latter part of 2021. If approved, Novartis would have subsidy and delisting protection until 31 December 2022. Planning and preparation for any competitive process is unlikely to be impacted by this proposal as it is likely that, should a process be run, it would occur in 2022 and still enable a price change date from early 2023. We are aware of a number of active NZ patents for fingolimod, which may potentially block a manufacturer from supplying a generic fingolimod product to the NZ market. However, in 2019 an Australian patent for fingolimod was opposed by a generic supplier, which may have implications for NZ patents (however that specific patent does not have a NZ counterpart). It does not appear that the generic brand has been reimbursed by the PBS at this current time. We consider it is likely that fingolimod generics would come to market in the coming years, and some within the period of subsidy and delisting protection proposed. If this proposal is approved, PHARMAC staff would engage with Teva (given its active Medsafe approval application) regarding fingolimod to reiterate interest in generic fingolimod and to discuss the patent landscape further. PHARMAC staff note Teva did not respond to the consultation regarding this proposal.
Ciclosporin	31 December 2022	Novartis is the only supplier with active Medsafe approval for ciclosporin; both Abbott and Douglas Pharmaceuticals have previous Medsafe approvals (now lapsed). Whilst there are three potential suppliers in the market, any brand change in this market would be highly resource intensive due to the number of transplant patients who would need to be closely monitored during any change in brand. There are no current plans to compete this market and any competitive process would require clinical advice which is not currently being actively progressed.

As this proposal involves a change to the net pricing only for fingolimod (Gilenya) and ciclosporin (Neoral), fingolimod and ciclosporin are not further discussed in this paper other than in the *Costs & Savings* section.

Factors for Consideration

This paper sets out PHARMAC staff's assessment of the proposal using the Factors for Consideration in the Operating Policies and Procedures. Some Factors may be more or less relevant (or may not be relevant at all) depending on the type and nature of the decision being made and, therefore, judgement is always required. The Decision-maker is not bound to accept PHARMAC staff's assessment of the proposal under the Factors for Consideration and may attribute different significance to each of the Factors from that attributed by PHARMAC staff.



Footnotes

[1] The person receiving the medicine or medical device must be an eligible person, as set out in the Health and Disability Services Eligibility Direction 2011 under Section 32 of the New Zealand Public Health and Disability Act 2000.

[2] The current Māori health areas of focus are set out in PHARMAC's Te Whaioranga Strategy.

[3] Government health priorities are currently communicated to PHARMAC by the Minister of Health's Letter of Expectations.

[4] Pharmaceutical expenditure includes the impact on the Combined Pharmaceutical Budget (CPB) and / or DHB hospital budgets (as appropriate).

[5] Please note PHARMAC's Factors for Consideration schematic currently does not explicitly refer to the health needs of family, whānau and wider society, but this factor should be considered alongside those depicted in the schematic.

Health need

Disease/illness

Psoriatic arthritis

Psoriatic arthritis is a chronic inflammatory arthritis associated with psoriasis, an inflammatory skin condition. Psoriatic arthritis has a variety of clinical manifestations, with symptoms including pain, tenderness and swelling in the joints, difficulty moving or stiffness in the joints and/or in the back. It is associated with psoriasis, which is characterised by skin patches (also called plaques) that are dry or red and usually covered with silvery-white scales, which may have raised edges, and nail abnormalities. Psoriatic arthritis occurs in 15 to 25% of people with psoriasis (PTAC, February 2018). Over 40% of psoriatic arthritis patients require caregiver assistance with daily activities (Kavanaugh et al. 2013).

Psoriatic arthritis typically develops in people aged 35-55 years but can occur at almost any age. Life expectancy of people with psoriatic arthritis is shortened by approximately three years (McLaughlin 2014).

Ankylosing spondylitis

Ankylosing spondylitis is a chronic inflammatory disease that causes a wide variety of morbidities, including progressive, irreversible, structural damage to the skeleton. During the course of the disease, spinal mobility is progressively restricted due to fusion of the vertebral and sacroiliac joints and eventual fusion (ankylosis) of the inflamed spinal joints.

Ankylosing spondylitis is associated with joint pain and stiffness and can result in significant disability and loss of quality of life. Ankylosing spondylitis impacts on patient disability and ability to undertake regular employment, and is also associated with complications of uveitis and inflammatory bowel disease. Ankylosing spondylitis characteristically affects young adults with a peak age of onset between 20 and 30 years.

Prevalence of ankylosing spondylitis ranges from 0.1% to 1.4% globally, translating to approximately 7.2–100 million people with ankylosing spondylitis worldwide (Braun et al., 2007). In February 2018, PTAC noted that the prevalence of ankylosing spondylitis in New Zealand is unknown.

Availability and suitability of existing treatments

Patients with psoriatic arthritis or ankylosing spondylitis would use first line non-steroidal anti-inflammatory drugs (NSAIDs) and then progress to conventional synthetic disease modifying anti-rheumatic drugs (DMARDs); methotrexate concomitant with sulfasalazine or leflunomide. Patients who do not receive an adequate response to conventional synthetic DMARDs can proceed to access funded adalimumab, etanercept and then infliximab.

Adalimumab and etanercept are both subcutaneous injections, administered fortnightly. Adalimumab and etanercept are both anti-TNFα treatments (TNF-inhibitors). If patients do not receive an adequate response or experience intolerable side effects from adalimumab or etanercept, they may access funded infliximab. Infliximab is administered as an infusion in a hospital setting.

Those with waning (or no initial) response to these biologics currently have no alternative treatments. There are no other IL-17A monoclonal antibodies listed on the Pharmaceutical Schedule therefore secukinumab would offer patients with a new line of treatment with a different mechanism of action to currently funded treatments.

Both psoriatic arthritis and ankylosing spondylitis are chronic conditions. Once a patient no longer receives benefit from funded treatments, their disease will continue to progress, as outlined above.

Health need of others

None identified

Impact on Māori health areas of focus and health outcomes

Psoriatic Arthritis

The Dermatology Subcommittee of PTAC has previously advised that both Māori and Pacific people have more severe eczema and that it is likely that this translates to more severe psoriasis, with a higher prevalence of associated comorbidities. Therefore, PHARMAC staff consider it likely that Māori and Pacific people have a higher prevalence of psoriatic arthritis than non-Māori and non-Pacific people.

Ankylosing Spondylitis

No studies comparing prevalence in Māori and European populations have been identified. It is, however, noted that the HLA-B27 allele is strongly associated with ankylosing spondylitis (Burke et al., 2017; Sheehan et al., 2014), which is noted as being less common in Māori (Edinur et al., 2013).

Any other populations experiencing health disparities

Psoriatic Arthritis

None identified. As noted above, PHARMAC staff consider it likely that Pacific people have a higher prevalence of psoriatic arthritis than non-Pacific people.

Ankylosing Spondylitis

None identified

Is the disease/illness a Government health priority

Both psoriatic arthritis and ankylosing spondylitis are long-term conditions, which is a government health priority.

Health Benefit

Treatment under consideration

Secukinumab is a recombinant fully human monoclonal antibody, that selectively binds to the protein interleukin-17A to inhibit its proinflammatory effects, that is delivered by subcutaneous injection. It is Medsafe-approved for use in the treatment of:

- moderate to severe plaque psoriasis in adult patients who are candidates for systemic therapy or phototherapy;
- adult patients with active psoriatic arthritis when the response to previous DMARD therapy has been inadequate; and
- adult patients with active ankylosing spondylitis.

Secukinumab offers a different mechanism of action to currently funded TNF-inhibitors.

Health benefits to the person

The evidence for the safety and efficacy of secukinumab for the treatment of patients with severe psoriatic arthritis and severe ankylosing spondylitis was considered by PTAC in 2018. The full record of PTAC's discussion is included as Appendix Five. No conflicts of interest from the Committee were noted for this agenda item.

When considering applications relevant to this proposal, PTAC made the following recommendations specific to this proposal:

- secukinumab in the treatment of psoriatic arthritis as a first biologic line (same criteria as adalimumab or etanercept) be listed with a medium priority;

- secukinumab in the treatment of ankylosing spondylitis arthritis as second biologic line (after failure of adalimumab or etanercept) be listed with a medium priority.

PTAC also recommended:

- secukinumab in the treatment of psoriatic arthritis as second biologic line (after failure of adalimumab or etanercept) be listed with a medium priority;

- secukinumab in the treatment of ankylosing spondylitis arthritis as first biologic line (same criteria as adalimumab or etanercept) be deferred until the results of the SURPASS trial are released;

- secukinumab in the treatment of all above indications be referred to the Rheumatology Subcommittee for advice on dosing and patient numbers.

The primary evidence for the treatment of patients with severe psoriatic arthritis is provided by two clinical trials:

- The FUTURE-1 and FUTURE-2 trials (Mease et al N Engl J Med 2015;373:1329-39, and McInnes et al Lancet 2015;386:1137-46) for psoriatic arthritis were considered by PTAC to show clear evidence benefit compared to placebo, regardless of TNF-inhibitor experience. PTAC considered there was only poor-quality evidence of its comparative efficacy vs currently available biologic agents. PTAC considered there was sufficient evidence of secukinumab's relative efficacy in psoriatic arthritis to recommend it at first biologic line with the same restrictions as currently apply to the TNF-inhibitors.

- In the FUTURE 2 study, at week 24 secukinumab showed better rates than placebo in achieving ACR50 (51%). In FUTURE 2 patients showed improvement in physical function (Health Assessment Questionnaire Disability Index (HAQ-DI) regardless of TNF-inhibitor experience. There was also improvement in the Dermatology Life Quality Index (DLQI), Psoriasis Activity Score Index (PASI) and Health Related Quality of Life (HRQoL). In comparison to anti-TNFs adalimumab and etanercept, PTAC considered there was an incremental benefit.

The primary evidence for the treatment of patients with severe ankylosing spondylitis is provided by three clinical trials:

- The MEASURE-1, MEASURE-2 and MEASURE-3 trials (Baeten et al N Engl J Med 2015; 373:2534-48 and Pavelka et al Arthritis Research & Therapy 2017; 19:285) for ankylosing spondylitis were considered by PTAC to show clear evidence of benefit compared to placebo, while PTAC also considered there was only poor-quality evidence of its comparative efficacy vs currently available biologic agents.

PTAC considered there to be a lack of evidence for the efficacy of secukinumab as a first-line biologic treatment for ankylosing spondylitis (ie the same line as adalimumab and etanercept). PTAC deferred a recommendation until the results of the SURPASS trial are released. PHARMAC staff note, as at March 2021, the results of the SURPASS trial have not been released.

Based on the advice received from PTAC, the available evidence indicates secukinumab is an effective treatment option for patients with:

- psoriatic arthritis, as a first- or second-line biologic treatment; or
- ankylosing spondylitis in a second-line setting (ie those who have received inadequate benefit from the existing funded alternatives).

PTAC recommended seeking advice from the Rheumatology Subcommittee regarding dosing and patient numbers. However, as adalimumab, etanercept and infliximab (all biologic treatments) are funded for psoriatic arthritis and ankylosing spondylitis via Special Authority, PHARMAC staff considered further advice was not required for the assessment of this proposal, given our good understanding of the potential patient group and disease context and that a positive funding recommendation was mooted.

PHARMAC staff sent the consultation on this proposal directly to the Rheumatology Subcommittee; members did not raise any concerns regarding the estimated patient numbers or dosing limits within the Special Authority criteria.

Health benefit to others

PHARMAC staff note that, in the later stages of psoriatic arthritis and ankylosing spondylitis, there can be a significant carer burden. Secukinumab offers a self-administered line of treatment which would delay the need for significant family and whānau support.

Consequences for the health system

Secukinumab is administered at home and therefore would help address a government health priority of primary health care; another community-administered treatment option may also delay or prevent progression to IV-administered infliximab in a hospital setting.

Suitability

Secukinumab offers a treatment with less frequent dosing (ie every four weeks as a maintenance dose rather than every two weeks for adalimumab treatment).

Given the lower dosing for psoriatic arthritis and ankylosing spondylitis compared to plaque psoriasis, PHARMAC staff propose listing the 1 prefilled syringe pack as part of this proposal. Secukinumab is currently available in a 2 prefilled syringe pack. Novartis' brand of secukinumab is also available in a 1 prefilled syringe pack. PHARMAC has not listed the 1 prefilled syringe pack given the dosing regimen for plaque psoriasis.

Secukinumab is administered as a subcutaneous injection. The recommended dosing for secukinumab is as follows:

Indication	Dosing regimen
Moderate to severe plaque psoriasis (currently funded, subject to Special Authority criteria)	Initial: 300 mg every week for the first five doses Maintenance: 300 mg every month
Psoriatic arthritis (not responded adequately to other DMARDs)	Initial: 150 mg every week for the first five doses Maintenance: 150 mg every month, increased up to 300 mg every month as needed
Psoriatic arthritis (not responded adequately to TNF-inhibitor treatment or with concomitant moderate to severe plaque psoriasis)	Initial: 300 mg every week for the first five doses Maintenance: 300 mg every month
Severe active ankylosing spondylitis	Initial: 150 mg every week for the first five doses Maintenance: 150 mg every month

DMARDs; disease modifying anti-rheumatic treatment.

Information regarding secukinumab dosing and administration can be found in the Medsafe datasheet.

Costs and Savings

Health related costs and savings to the person

None identified

Health related costs and savings to the family, whānau and wider community

None identified

Cost and savings to Pharmaceutical expenditure

Estimated incremental patient numbers for secukinumab, as a result of this proposal, are as follows:

Financial year end	30 June 2021	30 June 2022	30 June 2023	30 June 2024	30 June 2025
Patient Numbers	34	247	503	770	891

The patient numbers above do not include current or forecasted patient numbers for people receiving secukinumab for severe plaque psoriasis.

The estimated patient numbers include a number of assumptions regarding the use of secukinumab in psoriatic arthritis as a first line biologic, and use in ankylosing spondylitis a second line biologic:

- initial market growth of 10% in both the psoriatic arthritis and ankylosing spondylitis biologic market with the listing of a new agent with a 9% annual growth in the psoriatic arthritis market, and 5% annual growth in the ankylosing spondylitis biologic market
- gradual uptake of secukinumab as a psoriatic arthritis first line agent, with a first line market share of 10% in year one increasing to 40% by year five

- gradual update of secukinumab as an ankylosing spondylitis second line agent; initially 10% of the total ankylosing spondylitis patient population (based on current use of adalimumab/etanercept), increasing to 30% for year three onwards.

These assumptions are based on PHARMAC's current understanding of biologic market dynamics, including the impact of listing a new biologic agent.

In 2020, there were 861 patients receiving adalimumab or etanercept for psoriatic arthritis and 995 patients receiving adalimumab or etanercept for ankylosing spondylitis (i.e., patients taking treatment at full dose and adherence based on PHARMHOUSE dispensing data).

The budget impact assumes a maximum maintenance dose of 150 mg monthly for ankylosing spondylitis (as per the Special Authority criteria proposed by the supplier and reviewed by PTAC), and a maximum dose of 300 mg monthly for psoriatic arthritis (as per the Special Authority criteria proposed by the supplier and reviewed by PTAC) with 50% of psoriatic arthritis patients using the lower dose of 150 mg and 50% dosing at the maximum dose. This assumption is based on evidence from other markets (primarily the US) in which secukinumab is used in the treatment of psoriatic arthritis and/or ankylosing spondylitis.

Budget Impact Summary

The below table shows the list (subsidy) and net price (after confidential rebate) for individual products in the proposal:

Product	Unit	List price	Current net price	Proposal net price
Secukinumab (Cosentyx)	Inj 150 mg per ml, 1 ml prefilled syringe x 1 syringes	$799.50*	$S 9(2) *	$S 9(2)(b)
	Inj 150 mg per ml, 1 ml prefilled syringe x 2 syringes	$1,599.00	$S 9(2)(b)	$S 9(2)
Fingolimod (Gilenya)	0.5 mg capsules x 28	$2,200.00	$S 9(2)	$S 9(2)(b)
Ciclosporin (Neoral)	25 mg capsules x	$44.63	$S 9(2)	$S 9(2)
	50 mg capsules x	$88.91	$S 9(2)	$S 9(2)
	100 mg capsules x	$177.81	$S 9(2)	$S 9(2)
	Oral liquid 100 mg per ml x 50 ml	$198.13	$S 9(2)	$S 9(2)

*Secukinumab inj 150 mg per ml, 1 ml prefilled syringe (1 prefilled syringe pack) is not currently listed on the Pharmaceutical Schedule however the previous agreement for Cosentyx includes agreed pricing for this pack size.

The below table shows the costs or savings of each medicine to the CPB compared to the status quo (no PHARMAC interventions):

Product	Current net CPB costs 5-Year NPV ($ Million)	New net CPB costs 5-Year NPV ($ Million)	Net CPB savings 5-Year NPV ($ Million)
Secukinumab (psoriasis)	S 9(2)	N/A	S 9(2)
Secukinumab (access widening; psoriatic arthritis and ankylosing spondylitis)	N/A	S 9(2)	N/A
Fingolimod	S 9(2)	N/A	S 9(2)
Ciclosporin	S 9(2)	N/A	S 9(2)

Total investments/savings	S 9(2)(b)	S 9(2)(b)
Total CPB changes versus status quo	S 9(2)	

S 9(2)(b)(ii), 9(2)(ba)(i) & 9(2)(j)
S 9(2)(b)(ii), 9(2)(ba)(i) & 9(2)(j)
S 9(2)(b)(ii), 9(2)(ba)(i) & 9(2)(j)
S 9(2)(b)(ii), 9(2)(ba)(i) & 9(2)(j)
S 9(2)(b)(ii), 9(2)(ba)(i) & 9(2)(j)

S 9(2)(b)(ii), 9(2)(ba)(i) & 9(2)(j)
S 9(2)(b)(ii), 9(2)(ba)(i) & 9(2)(j)
S 9(2)(b)(ii), 9(2)(ba)(i) & 9(2)(j)

Alternative scenario

The analysis on this proposal has been conducted against the status quo (ie using the current contracted prices). However, PHARMAC staff note the following uncertainties in the assessment:

- an RFP for adalimumab has been released, which is forecast to realise savings from 1 April 2022. However, the level of these savings is unknown and therefore have not been included in the budget impact analysis
- PHARMAC staff intend to run a competitive procurement process for fingolimod in 2022, following the patent(s) expiry for the current product. S 9(2)(b)(ii), 9(2)(ba)(i) & 9(2)(j)
  S 9(2)(b)(ii), 9(2)(ba)(i) & 9(2)(j)
  S 9(2)(b)(ii), 9(2)(ba)(i) & 9(2)(j)
  S 9(2)(b)(ii), 9(2)(ba)(i) & 9(2)(j)

S 9(2)(b)(ii), 9(2)(ba)(i) & 9(2)(j)
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S 9(2)(b)(ii), 9(2)(ba)(i) & 9(2)(j)
S 9(2)(b)(ii), 9(2)(ba)(i) & 9(2)(j)
S 9(2)(b)(ii), 9(2)(ba)(i) & 9(2)(j)

Costs and savings to the rest of the health system

No other changes to DHBs have been identified, noting all patients would be shifting from existing funded treatments to secukinumab (as the proposed Special Authority requires patients to trial funded alternatives and currently these patients then progress to adalimumab and/or etanercept).

Cost-Effectiveness

The likely cost-effectiveness of this bundle proposal on the Options for Investment list is S 9(2) to S 9(2) QALYs per $1 million, which PHARMAC staff note is considered S 9(2)(b)(ii), 9(2)(ba)(i) & 9(2)(j) when ranking investment options.

As stand-alone proposals, secukinumab for the treatment of ankylosing spondylitis and psoriatic arthritis are estimated to have [redacted] and [redacted] QALYs per $1m respectively). This bundle proposal has [redacted] because of the combined price reductions in ciclosporin, fingolimod and secukinumab (which is currently listed for plaque psoriasis).

Cost-effectiveness compared to the status quo

This bundle proposal was ranked with price decreases of [redacted] for adalimumab and fingolimod as outlined above included in the assessment. PHARMAC staff consider the cost-effectiveness of this proposal [redacted].

Updated dosing in the cost-effectiveness model

As noted in the Direct Contracting Coversheet (Appendix 4), the cost-effectiveness range of [redacted] QALYs per $1 million invested does not account for updated dosing assumptions where 50% of psoriatic arthritis patients are expected to be on the maximum monthly maintenance dose of 300 mg monthly (remaining 50% dosing at 150 mg monthly). When accounting for this, [redacted], which based on re-seeding on the OFI would result in a placement of approximately [redacted].

Comments from Interested Parties

Section 49(a) of the New Zealand Public Health and Disability Act 2000 (the Act) requires PHARMAC to consult, when it considers appropriate to do so, on matters that relate to the management of pharmaceutical expenditure with any sections of the public, groups or individuals that, in the view of PHARMAC, may be affected by decisions on those matters.

Accordingly, a consultation letter specific to widening access for secukinumab to psoriatic arthritis and ankylosing spondylitis was circulated on 5 February 2021 to all suppliers and other parties that, in the view of PHARMAC, may be affected by the recommendations contained in this paper. Of note, the consultation was distributed to clinicians, patient advocacy groups, and other parties interested in rheumatology and dermatology.

The consultation letter, the distribution list, and all responses received by 22 February 2021 are attached as Appendix 2. One response, from Arthritis New Zealand (Arthritis NZ), was received late, however PHARMAC staff were made aware this would be submitted late in order for Arthritis NZ to meaningfully engage with its members. This response was supportive of the proposal to widen access and is included below. No other late responses were received. Summaries of what PHARMAC staff believe are the significant matters raised in these responses are provided below. For the full responses, please refer to Appendix 3. No feedback was received regarding the fingolimod and ciclosporin aspects of the multiproduct agreement.

Stakeholder group	Theme	PHARMAC Comment
Supportive of proposal to widen access to secukinumab		
Multiple responders (patients, clinicians, clinician groups, DHBs and advocacy groups)	Supportive of widening access to secukinumab to psoriatic arthritis and ankylosing spondylitis.	PHARMAC staff note many responders were supportive of the proposal.
Positive impact of secukinumab on patient's lives (patient stories)		
Multiple responders (patients)	Described their experience or experience of a family member with psoriatic arthritis and/or ankylosing spondylitis. Some responses noted that since commencing secukinumab (eg through self-funding or while overseas), their quality of life has improved dramatically, including their ability to work.	PHARMAC staff note the efficacy, suitability and impact of secukinumab on the lives of patients who have received secukinumab prior to funding and thank the respondents for sharing their personal stories.
Supportive of proposed Special Authority criteria		
New Zealand Rheumatology Association	Supportive of proposed Special Authority criteria.	PHARMAC staff note the responses in support of the proposed Special Authority criteria.
Funding of secukinumab in other countries		
Multiple respondents (patients, advocacy groups)	Noted the funding of secukinumab in other countries (Australia and the UK) and the length of time secukinumab has been funded in these countries. Responses also noted the challenges for patients moving from these countries to New Zealand and the difficulty of moving off treatment.	PHARMAC staff note the responses. PHARMAC staff note PHARMAC works to get the best health outcomes for New Zealanders possible by funding medicines from within the available budget. Having a fixed budget means careful and considered funding choices are made in the interests of all New Zealanders. PHARMAC staff thank the respondents for sharing their stories.
Ability for patients to transition between funded biologic treatments		
Clinician	Request to amend adalimumab and etanercept Special Authority criteria to allow patients who have received intolerable side effects or received insufficient benefit from secukinumab for psoriatic arthritis to transition to an alternative funded biologic treatment.	PHARMAC staff note this response and have included amendments to the Special Authority for adalimumab, etanercept and infliximab to reflect this as part of this proposal. These amendments are included in Appendix One.
Ability to access funded treatment given current self-funding		
Patient	Concern regarding ability to access funded secukinumab where self-funding patients have controlled disease and therefore would not meet the proposed criteria.	PHARMAC staff note those patients currently self-funding would be considered under the Special Authority Waiver process. Patients who have received treatment via another source of funding (eg self-funding or treatment overseas) are required to demonstrate they would have met the Special Authority criteria prior to initiating treatment in order to receive a Special Authority waiver approval.
Widening access to patients with normal C-reactive protein (CRP) and/or erythrocyte sedimentation rate (ESR)		

Multiple responders (patients and two rheumatologists, including one member of the Rheumatology Subcommittee of PTAC)	Requested amendment or removal of requirement for abnormal CRP, ESR or regular prednisone administration. Responses noted some patients with psoriatic arthritis do not have an abnormal CRP or ESR and considered that prednisone is not indicated for psoriatic arthritis. Responses suggested criteria to include patients with a CRP/ESR > upper limit of normal or presence of erosions on x-rays would be better aligned with recent clinical trials.	PHARMAC staff note the proposed Special Authority criteria align with that of currently funded psoriatic arthritis biologic treatments. S 9(2)(b)(ii), 9(2)(ba)(i) & 9 S 9(2)(b)(ii), 9(2)(ba)(i) & 9(2)(j) S 9(2)(b)(ii), 9(2)(ba)(i) & 9(2)(j) S 9(2)(b)(ii), 9(2)(ba)(i) & 9(2)(j) S 9(2)(b)(ii), 9(2)(ba)(i) & 9(2)(j) S 9(2)(b)(ii), PHARMAC staff note some respondents to the consultation noted they had trialled prednisone, and that 50% of patients seeking access to funded adalimumab or etanercept as a first-line biologic treatment for psoriatic arthritis in 2020 were trialling prednisone. PHARMAC staff intend to consider this proposed change and seek advice, if needed, from the Rheumatology Subcommittee of PTAC later in 2021 in order to better understand the potential implications of removing these criteria across all treatments for psoriatic arthritis, and to rank this change in comparison with other options for investment.
Amendment to Special Authority to change its place in the sequencing of treatment in psoriatic arthritis		
Supplier	Amendment of Special Authority to reflect current international guidelines on the use of anti-TNF inhibitors and IL-17 inhibitors.	PHARMAC staff note the guidelines provided. PHARMAC staff consider PHARMAC's Special Authority criteria are implemented as funding tools rather than to determine best treatment pathways. PHARMAC staff note PTAC considered the evidence and recommended secukinumab for first-line psoriatic arthritis with a medium priority. PHARMAC staff consider the proposed Special Authority criteria provide flexibility for clinicians to determine the best treatment option for their patients (ie TNF inhibitor or IL-17 inhibitor) and that they would not restrict use of secukinumab against current international guidelines.

Legal Advice

Where necessary, management will obtain legal advice on issues such as whether any proposal is consistent with PHARMAC's legislative and public law obligations, including those which may have specific relevance to the particular proposal eg human rights implications of a proposal.

No legal advice has been sought regarding this proposal because PHARMAC staff do not consider it to be contentious or to raise any issues of legal concern.

Implementation

Section 49(b) of the Act requires PHARMAC to take measures to inform the public, groups and individuals of PHARMAC's decisions concerning the pharmaceutical schedule. Accordingly, if the PHARMAC Board's delegate adopts the recommendations contained in this paper PHARMAC staff would take the following measures to inform the public, groups and individuals of that decision:

- prepare key messages to support consumer engagement and to respond to any media queries;

- notify health professionals including clinicians and pharmacists through appropriate information channels, including the Pharmaceutical Schedule Update, and other newsletter and email networks. Send the notification through the same channels as the consultation, as well as directly to all people who responded to the consultation; and
- contact relevant key stakeholders, informing them of the decision. PHARMAC would update the web page and may issue a media release about the decision.

Appendices

Appendix One: Proposed amendments to the Pharmaceutical Schedule restrictions relating to secukinumab, adalimumab, etanercept and infliximab

Appendix Two: Provisional agreement between PHARMAC and Novartis, dated 2 February 2021

Appendix Three: Consultation letter and responses

Appendix Four: Direct Contracting Coversheet

Appendix Five: Record from the February 2018 PTAC meeting relating to secukinumab for psoriatic arthritis and ankylosing spondylitis