4.05 IBRUTINIB,
140 mg capsules, 90,
Imbruvica®,
Janssen-Cilag Pty Ltd.

# Purpose of Application

* 1. The current minor re-submission sought to address the following issues arising from the PBAC’s rejection of the minor re-submission at the August 2016 Special meeting: the high and uncertain incremental cost-effectiveness ratio and overall cost to Government from adoption of the option 2 proposal in the form of a Risk Share Agreement (RSA).

# Requested listing

* 1. The submission proposed the listing that PBAC considered appropriate in its August 2016 consideration (this corresponds to the 2nd of the two restrictions proposed by Janssen in its submission to the August meeting, and represents the broader patient population). Secretariat suggested additions were marked in Italics.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Name, Restriction,****Manner of administration and form** | **Max.****Qty** | **№.of****Rpts** | **Dispensed Price for Max. Qty** | **Proprietary Name and Manufacturer** |
| ibrutinibCapsule 140 mg, 90 | 1 | 5 | Published $''''''''''''''''''' | Imbruvica | Janssen |
| Authority required (TELEPHONE)  |
|  |
| **Category / Program** | GENERAL – General Schedule (Code GE) |
| **Prescriber type:** | [ ] Dental [x] Medical Practitioners [ ] Nurse practitioners [ ] Optometrists[ ] Midwives |
| **PBS Indication:** | Chronic lymphocytic leukaemia (CLL) or small lymphocytic lymphoma (SLL) |
| **Restriction Level / Method:** | [ ] Restricted benefit[x] Authority Required - In Writing[x] Authority Required - Telephone[ ] Authority Required – Emergency[ ] Authority Required - Electronic[ ] Streamlined |
| **Clinical criteria:** | The treatment must be as monotherapy;ANDThe condition must have relapsed or be refractory to at least one prior therapy;ANDPatient must have a WHO performance status of 0 or 1.ANDThe patient must be considered unsuitable for treatment or retreatment with a purine analogue. |
| **Prescriber Instructions** | A patient is considered unsuitable for treatment or retreatment with a purine analogue as demonstrated by at least one of the following:a. Failure to respond (stable disease or disease progression on treatment), or a progression-free interval of less than 3 years from treatment with a purine analogue-based therapy and anti-CD20-containing chemoimmunotherapy regimen after at least two cyclesb. Age ≥ 70 yearsc. Age ≥ 65 years and the presence of comorbidities (Cumulative Illness Rating Scale ≥ 6 or creatinine clearance <70 mL/min) that might place the patient at an unacceptable risk for treatment-related toxicity with purine analogue-based therapy, provided they have received one or more prior treatment including at least two cycles of an alkylating agent-based (or purine analogue-based) anti-CD20 antibody-containing chemoimmunotherapy regimend. History of purine analogue-associated autoimmune anaemia or autoimmune thrombocytopeniae. 17p deletionTreatment must be discontinued in patients who experience disease progression while on treatment. |
| **Administrative Advice** | *Special Pricing Arrangements apply.* |

# Background

* 1. Ibrutinib is TGA registered for the treatment of (1) patients with CLL/SLL who have received at least one prior therapy or as first line in patients with CLL with 17p deletion and (2) patients with mantle cell lymphoma who have received at least one prior therapy.
	2. The PBAC did not recommend ibrutinib of CLL/SLL in July 2015 (major submission), November 2015 (minor re-submission), March 2016 (minor re-submission) or August 2016 Special (minor re-submission).
	3. In August 2016 the PBAC did not recommend the listing of ibrutinib for the treatment of relapsed or refractory CLL/SLL because, at the price proposed by the submission, the incremental cost per quality adjusted life year (QALY) gained was unacceptably high. Additionally, the PBAC noted the financial impact of listing ibrutinib at the proposed price was high with a total net cost to the PBS of more than $100 million over the first 5 years of listing, and as such, there would be a significant opportunity cost to the Commonwealth.
	4. The current minor re-submission sought to address the outstanding issues of the high incremental cost effectiveness ratio (ICER) and overall cost to government by proposing a revised Risk Share Agreement (RSA), which also had the effect of reducing the ICER, in the event the caps proposed in the risk share arrangement are reached
	5. Table 1 summarises the key differences between the July 2015 submission, the November 2015 minor re-submission, the March 2016 minor re-submission and the August 2016 minor re-submission. Table 2 provides further details on the proposal made in this submission, and presented the revised ICERs calculated during the preparation of the overview of this minor re-submission.

**Table 1: Key differences between the July 2015 submission, the November 2015, March 2016 and August 2016 minor re-submissions**

|  | **July 2015 submission** | **November 2015 minor re-submission** | **March 2016 minor re-submission** | **August 2016 minor resubmission** | **November 2016 minor resubmission** |
| --- | --- | --- | --- | --- | --- |
| Requested PBS listing for: | Relapsed or refractory CLL and SLL, where the patient must have received ≥1 prior therapy, and be considered unsuitable for treatment or retreatment with a purine analogue. | As per the July 2015 major submission. Additional criteria were included in the requested listing to define patients who are unsuitable for treatment or retreatment with a purine analogue based on the eligibility criteria in the RESONATE study. | No change | Two options 1. As per March 2016 PBAC recommendation;
2. As per Nov 15 and Mar 16 minor resubmissions
 | Broader population as per Nov 15 and Mar 16 minor resubmissions |
| Requested restriction | Authority required (STREAMLINED) | Authority required (TELEPHONE) | No change | No change | No Change |
| Effective ex-manufacturer price | $''''''''''''''''''''''' | The minor re-submission offered a '''''% price reduction with a new effective ex-manufacturer price of $''''''''''''''''''''.PBAC stated that the effective price should be such that the economic evaluation has an ICER of <$''''''''''''''''/QALY with the criteria stated in Table 2.  | No change, as new model resulted in ICER <$'''''''''''''''/QALY | Option 1$'''''''''''''''''' Option 2''''''''''' ''''' '''''''''''''''''''''''''''''''''''' ''''' '''''''''''''''''''''' ''''''''''''''''''''''''' ''''''''''''''''' ''''''''''' ''''''''''''' ''''''''''''''' '''''''''' '''''''''''''''''''''''''' | No Change'''''''''' '''''' '''''''''''''''''''''''''''''''''''' ''''' ''''''''''''''''''''''' ''''''''''''''''''''''''' '''''''''''''''' ''''''''''' ''''''''''''' ''''''''''''' '''''''''' '''''''''''''''''''''''' |
| Main comparator | Rituximab plus chlorambucil | No change | No change | No change | No Change |
| Clinical evidence | Interim analysis (median follow-up 9.4 months)**Median OS**Ibrutinib (N=195): not reachedOfatumumab (N=196): not reachedHR: 0.43 (95% CI: 0.24, 0.79)Longer-term follow-up (median follow-up 16 months)**Median OS**Ibrutinib (N=195): not reachedOfatumumab (N=196): not reached* '''''''''' '''''''''' '''*''''''''''' '''''''* ''''''''''''' ''''''''''''''' '''''''' ''''''''''''''''''''''
* '''''''' '''''''''' '''*'''''''''' '''''''* ''''''''''' '''''''''''''''' '''''''''' ''''''''''''''''''''''''' ''''' '''''''''''''''''''''''
 | No changeA comparison of ibrutinib to idelalisib + ofatumumab using ofatumumab as the common comparator was provided. This information was not pivotal to the minor re-submission.The minor re-submission examined four methodologies to adjust for crossover. The preferred method was the RPFST.*For ibrutinib versus ofatumumab the OS HR adjusted using the RPSFT method for the median follow-up of 16 months was '''''''''' '''''''''''''' ''''''' '''''''''''' '''''''''''''* | Presentation of ITT (EOS), RPSFT methodology and ITT (amended). | No change | No Change |
| Clinical claim | As evidenced by statistically significant and clinically relevant improvements in PFS, OS, and ORR, ibrutinib has a superior efficacy profile compared to ofatumumab (and by extension chlorambucil plus rituximab, the main comparator) and a different but acceptable safety and tolerability profile.See paragraph 7.7, July 2015 PBAC Public Summary Document (PSD) for PBAC comments on appropriateness.  | No change. The minor resubmission did not identify any new evidence to determine the magnitude of benefit of ibrutinib over rituximab given in combination with chlorambucil. | No change | No change | No Change |
| Economic model | Cost-utility analysis.3-state model.20-year time horizon.LYG and QALY outcomes.Markov model.Transition probabilities derived based on extrapolated PFS and OS KM estimates.Convergence of overall survival curves starting at 2 years with full convergence at 25 years. | The structure of the economic model was unchanged.The following relevant model inputs were revised:* Discounted price for ibrutinib.
* Time horizon truncated to15 years (from 20 years).
* '''''''''' reduction in the hazard of event in comparator arm (progression and death) to address the uncertainty in the magnitude of the treatment effect of ofatumumab versus rituximab plus chlorambucil.
 | The following model inputs were revised:* Time horizon truncated to 10 years (from 15 years).
* Removal of the convergence of the overall survival curves.
 | November 2015 model with the following adjustments specified by PBAC at that meeting:* 10 year time horizon;
* OS based on the unadjusted ITT analysis;
* '''''''''' reduction in hazard of events with ofatumumab

The OS had been converged as per the November 2015 model. The period over which the OS curves converge had not been adjusted for the revised time horizon, and hence the curves did not converge at the end of the 10 years (they converged at 25 years which was beyond the model time horizon). | No Change in model structure. |
| Base case ICER | Main submission: base case $''''''''''''''''/QALY, with OS based on the unadjusted ITT analysisPre-PBAC response: respecified base case $''''''''''''''''''/QALY, using RPSFT methodology. | $'''''''''''''''''/QALY (with OS adjusted using the RPSFT methodology) | $''''''''''''''''/QALY | Option 1$'''''''''''''''' Option 2$''''''''''''''''' | If caps reached:$'''''''''''''''''' (25 y Converge)$'''''''''''''''' (10 y Converge)*See also Table 2* |
| Financial estimates | Incidence based approach.*Method was inappropriate, DUSC developed new estimates.*  | The financial estimates prepared by the DUSC for the July 2015 submission were accepted. | Unchanged | Option 1''''''''''' of DUSC populationOption 2'''''''''''' of DUSC population | No Change |
| Risk sharing arrangement | The submission stated that a risk share arrangement should be based upon an assumption of ''''''''''% uptake in eligible patients with an appropriate financial buffer before any rebates apply.To reduce the risk of leakage, the submission stated willingness to work with the Department to negotiate a risk-sharing arrangement. | The minor re-submission used the DUSC estimates to calculate caps for the proposed RSA. The proposed caps are based upon the assumption that all eligible patients as proposed by the DUSC’s estimates will access ibrutinib.The minor re-submission acknowledges the potential for leakage to other populations (purine suitable, first-line CLL with 17p deletion and mantle cell lymphoma). An additional rebate of '''''% for all Commonwealth payments exceeding the subsidisation caps was proposed.*The PBAC recommended that a RSA would be required consisting of a cap on expenditure with a ''''''''''% rebate for budget certainty. The PBAC recommended that the RSA should be based on the DUSC estimates of the patient population representative of those included in the RESONATE trial.* | The minor re-submission requested negotiations with the Department. | Same for Options 1 and 2'''''''''' '''' '''''''' ''''' '''''''''' '''' ''''''''''''''' ''''''''''''''''' '''''''''''''''''''''''' ''''''''' ''''''''''''''''''''''' ''' '''''''''''''' '''''''''''''''''' ''''' ''''''''''''''''''''''''' '''''''''''' ''''''' '''''''''''''''''''''''''''''' ''''''''' ''''' '''''''''' '''''''''''''''''''''''''''''''' '''''''''''''''''''''''' ''''' ''''''''' '''''''''''''' ''' ''''''' ''''' '''''''''''' '''' '''''''''''''' ''''''''''''''''' ''''''''''''''''''''''''' '''''''''' ''''''''''''''''''''' '''' ''''''''''''' ''''''''''''''''' '''' ''''''''''''''''''''' '''' ''''''''''' '''''''''''''''''''''''''''''''' '''''''''''''''''''''''' '''' '''''''' ''''''''''''''' ''''''''''''''' ''''''''''' '''''''' '''''Special Pricing Arrangement with public DPMQ of $'''''''''''''''''' | No Change to prices and cap numbers.Reduces overall cap to $'''''''''' '''' over 5 years. |

Source: compiled for the Minor Overview

CLL = chronic lymphocytic leukaemia; SLL = small lymphocytic lymphoma; PBS = pharmaceutical benefit scheme; DPMQ = dispensed price for maximum quantity; ICER = incremental cost effectiveness ratio; QALY = quality adjusted life years; PBAC = pharmaceutical benefit advisory committee; OS = overall survival; RPSFT = rank preserving structural failure time; HR = hazard ratio; EOS = end of study; ITT = intention to treat; PFS = progression free survival; ORR = overall response rate; LYG = life year gained; KM = Kaplan–Meier; DUSC = Drug Utilisation Sub Committee; RSA =risk sharing arrangement

**Table 2: Comparison between previous considerations and current submission**

|  | **Previous considerations** | **November 2016 submission** |
| --- | --- | --- |
|  | Nov 2015 submission | Nov 2015PBAC | March 2016PBAC | August 2016Option 1 | August 2016Option 2 | Option 2 |
| Target population | RR CLL or SLL with- have received at least one prior therapy; and- must be considered unsuitable1 for treatment or retreatment with a purine analogue | RR CLL or SLL who have received at least one prior therapy and with17p deletion and/or 11q deletion and/orTP 53 mutation ORRefractory to FCR2 | RR CLL or SLL who have received at least one prior therapy and with17p deletion and/or 11q deletion and/orTP 53 mutation ORRefractory to FCR2 | RR CLL or SLL with- have received at least one prior therapy; and- must be considered unsuitable for treatment or retreatment with a purine analogue | RR CLL or SLL with- have received at least one prior therapy; and- must be considered unsuitable for treatment or retreatment with a purine analogue |
| Price (AEMP) | $''''''''''''''''''''' | $''''''''''''''''''' | $''''''''''''''''' | '''''''''''''''''''''' ''''' '''''''' ''''''''''''''''''''''''''''' '''' '''''''''' ''''' | ''''''''''' ''''' ''''''''''''''''''''''''''''''''' ''''' '''''''''''''''''''''''' | '''''''''' ''''' '''''''''''''''''''''''''''''''''' '''''' ''''''''''''''''''''''' |
| ICER ($/QALY) | $75,000/QALY - $105,000/QALY | $45,000/QALY - $75,000/QALY | $45,000/QALY - $75,000/QALY | $45,000/QALY - $75,000/QALY ''''' ''''''''' ''''[$45,000/QALY - $75,000/QALY ''''' '''''''' '''] | $45,000/QALY - $75,000/QALY3 | $45,000/QALY - $75,000/QALY4$75,000/QALY - $105,000/QALY5 |
| No patients | Less than 10,0006 | Less than 10,000 | Less than 10,000 ('''''% of '''''''''''')  | Less than 10,000 ('''''''% of '''''''''''''') | Less than 10,000 | Less than 10,000 |
| Cost to PBS over 5 years7 | More than $100 million | More than $100 million | More than $100 million | More than $100 million ''''''''''' ''''''[More than $100 million (''''''''' '''''] | More than $100 million ''''''''''' '''''More than $100 million ''''''''''''' ''''' | More than $100 million |

1 The additional criteria put forward by Janssen for consideration at the November 2015 PBAC meeting to define “unsuitable” are reproduced below:

a) Failure to respond (stable disease or disease progression on treatment), or a progression-free interval of less than 3 years from treatment with a purine analogue– based therapy and anti-CD20-containing chemo-immunotherapy regimen after at least two cycles OR

b) Age ≥ 70 years OR

c) Age ≥ 65 and the presence of comorbidities (Cumulative Illness Rating Scale ≥ 6 or creatinine clearance <70 mL/min) that might place the patient at an unacceptable risk for treatment-related toxicity with purine analogue–based therapy, provided they have received one or more prior treatment including at least two cycles of an alkylating agent–based (or purine analogue–based) anti-CD20 antibody–containing chemoimmunotherapy regimen. OR

d) History of purine analogue–associated autoimmune anaemia or autoimmune thrombocytopenia OR

e) del17p

2 Refractory to FCR = refractory to fludarabine, cyclophosphamide and rituximab: failure to achieve at least a partial response at the completion of FCR (a minimum of 3 cycles) or a progression free interval of less than 1 year following completion of FCR; 3 calculated using weighted AEMP of $''''''''''''''''''; 4 calculated using weighted AEMP of $''''''''''''''''''' with convergence of OS curves at 25 years; 5 calculated using weighted AEMP of $''''''''''''''''' with convergence of OS curves at 10 years 6 No patients per DUSC advice July 2015; 7 Approximate cost, calculated using $'''''''''' cost estimate from November submission adjusted to take into account price and number of patients in each scenario

*For more detail on PBAC’s view, see section 5 “PBAC outcome”*

1. Consideration of the evidence

## Sponsor hearing

* 1. There was no hearing for this item as it was a minor submission

## Consumer comment

* 1. The PBAC noted that no consumer comments were received for this item.

## Estimated PBS usage & financial implications

* 1. The November 2016 minor re-submission presented updated financial estimates that appropriately assume the same eligible population with RR CLL or SLL as identified by the July 2015 DUSC advice to the PBAC and a mean duration of ibrutinib therapy of ''''''''''' months. The only difference to the August 2016 minor re-submission was that the ''''''''''' ''''' '''''''''''' ''''''' '''' '''''''' '''''''''' ''''''''''' '''''''''''''''''' ''''''' ''''''''''''''''''''' ''''''''''''' ''''' ''''''''' ''''''''''''''' ''''''''''' ''''''' ''''''''''''''''''''''''''' ''''' ''''''' ''''''''''''''''
	2. The PBAC noted that the submission’s estimates of the number of patients assumed to initiate treatment with ibrutinib were consistent with the July 2015 DUSC advice.
	3. The PBAC noted that, consistent with the DUSC advice, the estimated number of patients was highest in year 1 and the estimated number of packs highest in year 2 because of the assumption (from DUSC July 2015) that prevalent patients diagnosed to 2013 inclusive would start ibrutinib in the first 2 years of listing and continue treatment for an average of '''''''''' months. Patients diagnosed from 2014 onwards would start 2 years after diagnosis. This was considered to still be applicable to the current submission.

**Table 3: November 2016 resubmission financial Implications of listing ibrutinib**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|   | Ex-Manufacturer Price | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Cumulative total |
| August 2016 re-submission | Net Cost R/PBS of Ibrutinib (based on re-submission estimates)  |
| Option 2:  | ''''''% at $''''''''''''''''''''''''''''% at $'''''''''''''''''''' | $'''''''''''''''''''''''''' | $''''''''''''''''''''''''''' | $'''''''''''''''''''''''''''' | $''''''''''''''''''''''''''''' | $''''''''''''''''''''''''''' | $''''''''''''''''''''''''''''' |
| Current Proposal to PBAC | Net Cost R/PBS of Ibrutinib (based on re-submission estimates removing some packs)  |
| Modified Option 2:  | ''''''% at $'''''''''''''''''''''''''% at $'''''''''''''''''''''' | $''''''''''''''''''''''''''''' | $''''''''''''''''''''''''''' | $'''''''''''''''''''''''''' | $'''''''''''''''''''''''' | $''''''''''''''''''''''''' | $'''''''''''''''''''''''''''''''' |

Source: Table 3, pp 6 of November 2016 minor resubmission

## Risk Share Proposal

* 1. The minor re-submission proposed the same risk share arrangement structure as in the August 2016 minor re-submission.

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* 1. The sponsor has adjusted the overall cost to government in the risk share agreement, by '''''''''''''''''''''' ''''''''''''' '''''''''''''', to give an overall reduction in the net cost to the R/PBS of ibrutinib over 5 years of '''''''''''% to more than $100 million.
	2. The incremental cost-effectiveness ratio of ibrutinib for CLL/SLL under the November 2016 proposal was estimated to be $45,000 - $75,000 per QALY gained when the OS curves converged at 25 years and $75,000 - $105,000 per QALY gained when the OS curves converged at 10 years.
	3. The Secretariat noted that it may be appropriate for the risk share arrangement to include a requirement that, if the ''''''' ''' cap is not exceeded in a deed year, reconciliation is conducted to ensure that '''''% of use in that year is at $''''''''''''''''''' and ''''''% at $''''''''''''''''''''''.

*For more detail on PBAC’s view, see section 5 “PBAC outcome”*

1. PBAC Outcome
	1. The PBAC did not recommend the listing of ibrutinib for the treatment of relapsed or refractory chronic lymphocytic leukaemia (CLL) or small lymphocytic lymphoma (SLL) because, although the new submission proposed a reduction in the total expenditure caps for ibrutinib compared to the previous submission, and although that reduction would effectively reduce the incremental cost per quality adjusted life year (QALY) gained in the event that usage exceeded the level of the new caps, the cost-effectiveness of treatment remained unacceptably high and uncertain. Additionally, the PBAC remained of the view that, at a total net cost to the PBS of more than $100 million over the first 5 years of listing ibrutinib, there would be a significant opportunity cost to the Commonwealth.
	2. The PBAC recalled its previous clinical advice that ibrutinib is an effective treatment for CLL and SLL based on the results of the RESONATE trial and that the broader PBS restriction for use as monotherapy, in patients with a WHO performance status of 0 or 1; who have relapsed or are refractory to at least one prior therapy; and who are unsuitable for treatment or retreatment with a purine analogue, is appropriate.
	3. The PBAC recalled its previous advice from August 2016 that the incremental benefit of ibrutinib over its comparator (chlorambucil plus rituximab) as estimated in the economic model remained uncertain. A key driver of this uncertainty was the large proportion of the estimated survival gain was from the extrapolated part of the survival curves ('''''''''' '''''''''' ''''' ''''''''''''''''''''''''''' '''''''''' '''''''''''' ''''''''''''''''''''''''''''''''''''''' when the model is truncated at 10 years). As a result, the extent of benefit was highly influenced by the approach taken to extrapolate the survival curves and in particular the period over which the curves were converged (see figures 1 and 2).

Figure 1: Convergence of OS over 25 years

![Convergence of overall survival over 25 years [Redacted]]()

Figure 2: Convergence of OS over 10 years

 ![Convergence of overall survival over 10 years [redacted]]()

* 1. The PBAC also recalled that in November 2015, it had considered an effective ex-manufacturer price of $''''''''''''''''''' to represent a cost-effective price, however in subsequent deliberations the PBAC had noted this price only gave an acceptable cost per QALY gained ($45,000 - $75,000) if the overall survival curves were assumed to converge over 25 years. If the survival curves were assumed to converge over 10 years, then at a price of $'''''''''''''''''''''', the cost per QALY gained was $75,000 - $105,000. The PBAC recalled it had noted at that time that the large difference in ratios that result from the different approaches taken to convergence highlight that the cost-effectiveness ratios for ibrutinib are imprecise and hence uncertain.
	2. The PBAC acknowledged that the sponsor proposed a reduction in the expenditure caps in the risk share arrangement compared with the August 2016 submission which resulted in an approximately ''''''''''''% reduction in the overall cost to the Commonwealth.
	3. The PBAC further acknowledged that if usage is consistent with the proposed new risk share caps, the cost per QALY gained was ($45,000 - $75,000 if the overall survival curves were assumed to converge over 25 years and $75,000 - $105,000 per QALY gained if the curves were converged over 10 years. The PBAC again noted that converging the overall survival curves over 10 years rather than 25 years had a substantial impact on the incremental gain in survival and thus the cost per QALY gained. Furthermore, the assumption that the survival curves converge over 25 years resulted in '''''''% of patients treated with ibrutinib being alive at 10 years compared with ''''''% of patients in the comparator arm. As previously, the PBAC considered this difference at 10 years to be inconsistent with a life expectancy of less than 24 months for patients with relapsed or refractory CLL or SLL. The PBAC considered a further reduction in price would be required to achieve cost-effectiveness in the population preferred by the sponsor, clinicians and PBAC. Alternatively, a further reduction in the overall expenditure caps could potentially provide the PBAC with additional confidence in the cost effectiveness of ibrutinib for this condition to enable a recommendation for listing.
	4. The PBAC noted that the named patient program was not included in current re-submission but that the sponsor had previously requested grandfathering for '''''''' (March 2016 submission Pre-PBAC response). Any new submission would need to include data on how many of the named patient population would meet the PBS eligibility criteria and include all grandfathered patients into the financial estimates.
	5. The PBAC acknowledged the sponsor’s proposal for a '''''''''% rebate for usage beyond the ''''''''''''''''''' '''''''''' '''''''''''''' ''''''''. However, the PBAC noted that it would be appropriate for the risk share arrangement to include a requirement that, if ''''''' ''''''' ''' '''''''''' was not exceeded in a deed year, reconciliation would conducted to ensure that '''''% of use in that year was at '''''''' '''''''''''''''' ''''''' ''' '''''''''''' and ''''''''''' '''' '''''''' ''''''' ''' price.
	6. The PBAC noted that this submission is eligible for an Independent Review.

**Outcome:**

Rejected

1. **Context for Decision**

The PBAC helps decide whether and, if so, how medicines should be subsidised in Australia. It considers submissions in this context. A PBAC decision not to recommend listing or not to recommend changing a listing does not represent a final PBAC view about the merits of the medicine. A company can resubmit to the PBAC or seek independent review of the PBAC decision.

1. **Sponsor’s Comment**

Janssen will continue to engage with the PBAC and Department of Health to work towards a resolution.

1. **Addendum to November 2016 PBAC Minutes**

## Background

Subsequent to the November 2016 PBAC meeting, the sponsor revised the proposal it had made to the PBAC in the November 2016 submission. The new offer, dated 23 January 2017 represents a ''''''''''''% reduction in the gross cost to the PBS over the August 2016 submission (more than $100 million) and a ''''''''''% reduction in gross cost to the PBS from the November 2016 submission (more than $100 million), to be achieved by a reduction in the level of the first cap (from '''''' ''''' ''''''% of estimated expenditure) and the total cap.

A summary of the revised proposal follows:

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* ''''''' ''''''''''''''''''''''''''''''''' ''''' '''''''''''''''''''''''''' ''''''''''''' '''''''''''' '''' '''''''''''''''' ''' '''''''''''' '''''''''' ''''' '''''''''''''';
* an estimated gross PBS impact over 5 years of more than $100 million (with the cost offset for the comparator (rituximab plus chlorambucil) the net cost to the PBS is more than $100 million); and
* an incremental cost per quality adjusted life year (QALY) gained of $45,000 - $75,000 if OS curves are converged over 10 years, $45,000 - $75,000if OS curves converged over 25 years.

The submission’s estimates of the impact of the revisions to the caps on the gross financial implications to the PBS of listing ibrutinib are as follows:

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  | **Annual Cost (millions)** |
|   | **Ex-Manufacturer Price** | **DPMQ** | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Cumulative total** |
| **Net Cost R/PBS of listing Ibrutinib**  | '''''''''' '''' '''''''''''''''''''''''''''''''''' ''''' '''''''''''''''''''''''''' | ''''''''''' '''' ''''''''''''''''''''''''''''''''''' '''' ''''''''''''''''''''''''' | $'''''''''' | $'''''''''''' | $'''''''''' | $'''''''''' | $''''''''''' | $'''''''''''' |

The redacted table shows that at year 5, the net cost to the PBS would be $30 – $60 million.

## PBAC outcome

The PBAC recommended the listing of ibrutinib, but on the basis that it be available only in the circumstances: for use as monotherapy for CLL and SLL for, in patients with a WHO performance status of 0 or 1; who have relapsed or are refractory to at least one prior therapy; and who are unsuitable for treatment or retreatment with a purine analogue.

The PBAC is satisfied that ibrutinib provides, for some patients, a significant improvement in efficacy over rituximab in combination with chlorambucil.

The PBAC’s recommendation for listing was based on, among other matters, its assessment, that the cost-effectiveness of ibrutinib would be acceptable at the prices cited above and proposed in the sponsor’s submission dated 23 January 2017, and if the measures cited above and in the sponsors submission dated 23 January 2017 were implemented to contain risks associated with the cost of the drug to the PBS.

As previously, the PBAC agreed that ibrutinib is an effective treatment for CLL and SLL based on the results of the RESONATE trial and that the broader PBS restriction for use as monotherapy, in patients with a WHO performance status of 0 or 1; who have relapsed or are refractory to at least one prior therapy; and who are unsuitable for treatment or retreatment with a purine analogue, is appropriate.

The PBAC recommended that ibrutinib should not be treated as interchangeable on an individual patient basis with any other drugs.

The PBAC advised that ibrutinib is not suitable for prescribing by nurse practitioners.

The PBAC recommended that the Early Supply Rule should apply to ibrutinib.

The PBAC noted that this submission is not eligible for an Independent Review as ibrutinib has been recommended for listing.

**Outcome:**

Recommended

## Recommended listing

Add item:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Name, Restriction,****Manner of administration and form** | **Max.****Qty** | **№.of****Rpts** |  | **Proprietary Name and Manufacturer** |
| ibrutinibCapsule 140 mg, 90 | 1 | 5 |  | Imbruvica | Janssen |
|  |
| **Category / Program** | GENERAL – General Schedule (Code GE) |
| **Prescriber type:** | [ ] Dental [x] Medical Practitioners [ ] Nurse practitioners [ ] Optometrists[ ] Midwives |
| **PBS Indication:** | Chronic lymphocytic leukaemia (CLL) or small lymphocytic lymphoma (SLL) |
| **Restriction Level / Method:** | [ ] Restricted benefit[x] Authority Required - In Writing[x] Authority Required - Telephone[ ] Authority Required – Emergency[ ] Authority Required - Electronic[ ] Streamlined |
| **Clinical criteria:** | The treatment must be as monotherapy;ANDThe condition must have relapsed or be refractory to at least one prior therapy;ANDPatient must have a WHO performance status of 0 or 1.ANDThe patient must be considered unsuitable for treatment or retreatment with a purine analogue. |
| **Prescriber Instructions** | A patient is considered unsuitable for treatment or retreatment with a purine analogue as demonstrated by at least one of the following:a. Failure to respond (stable disease or disease progression on treatment), or a progression-free interval of less than 3 years from treatment with a purine analogue-based therapy and anti-CD20-containing chemoimmunotherapy regimen after at least two cyclesb. Age ≥ 70 yearsc. Age ≥ 65 years and the presence of comorbidities (Cumulative Illness Rating Scale ≥ 6 or creatinine clearance <70 mL/min) that might place the patient at an unacceptable risk for treatment-related toxicity with purine analogue-based therapy, provided they have received one or more prior treatment including at least two cycles of an alkylating agent-based (or purine analogue-based) anti-CD20 antibody-containing chemoimmunotherapy regimend. History of purine analogue-associated autoimmune anaemia or autoimmune thrombocytopeniae. 17p deletionTreatment must be discontinued in patients who experience disease progression while on treatment. |
| **Administrative Advice** | Special Pricing Arrangements apply. |

1. Sponsor’s Comment

The sponsor had no comment.