MSAC REAPPLICATION TEMPLATE

Reapplication Name:	**Catheter-based radiofrequency renal denervation for severe treatment-resistant hypertension**
Previous application number	1659
Name of previous application	Catheter-based renal denervation for uncontrolled elevated systolic blood pressure

A. Funding Source

1. **Please check the box that corresponds with the program through which the health technology would be funded:**

☒ Medicare Benefits Schedule (MBS). Please:

a) Upload an in principle Statement of Clinical Relevance[1] when uploading this template.
b) Note in Table 2 below, any changes to the proposed MBS item(s) compared to the previous ADAR.

☐ National Blood Agreement.

☐ National Health Reform Agreement Addendum (high-cost, highly specialised therapies).

☐ National Diabetes Services Scheme.

☐ Other. Please specify the funding program:

2. **Has the funding source changed compared to your previous application?**

☒ No

B. Regulatory Information

1. Does your proposed service or technology involve (check as many as applicable):

☒ the use of a medical device, *in-vitro* diagnostic test, radioactive tracer, or any other type of therapeutic good? Please complete the section titled B1: ARTG Listing.

☐ a service or laboratory requiring accreditation by the National Association of Testing Authorities (NATA)? Please complete the section titled B2: NATA Accreditation.

☐ an MBS item descriptor that refers to a specific radiopharmaceutical or a set of radiopharmaceuticals? Please complete the section titled B3: Radiopharmaceuticals.

☐ None of the above. Proceed to the Other information section.

[1] The in principle Statement of Clinical Relevance demonstrates 'in principle' support for the proposed service. This must be from the most relevant professional medical/health group (i.e., an official college or society) that represents practitioners who would **perform** the proposed services, and (in the case of investigative technologies only) practitioners who would **request** the proposed service.

B1: ARTG Listing

2. Has the proposed health technology been listed or registered or included in the Australian Register of Therapeutic Goods (ARTG) by the Therapeutic Goods Administration (TGA)?

☐ No (Go to question 4)

☒ Yes. Please state the ARTG ID, TGA approved indication(s) and TGA approved purpose:

ARTG ID:	343930
TGA approved indication(s):	The Symplicity Spyral multi-electrode renal denervation catheter is indicated for the treatment of uncontrolled hypertension.
TGA approved purpose:	To deliver radiofrequency (RF) energy through the wall of the renal artery to denervate the human kidney

3. Is the intended purpose in this reapplication the same as the intended purpose of the ARTG listing?

☒ Yes. Go to the next applicable section (B2: NATA Accreditation; B3: Radiopharmaceuticals; or Other Information).

☐ No. Please explain the differences below, then proceed to the next applicable section (B2: NATA Accreditation; B3: Radiopharmaceuticals; or Other Information)

The intended purpose in the application (severe treatment-resistant hypertension) is a narrower population than included in the ARTG (all uncontrolled hypertension).

4. Is the therapeutic good classified by the TGA as either a Class III or Active Implantable Medical Device (AIMD) against the TGA regulatory scheme for devices?

☒ No

☐ AIMD

☐ Class III

5. Is the therapeutic good to be used in the service exempt from the regulatory requirements of the *Therapeutic Goods Act 1989*?

☒ No

☐ Yes. Please attach supporting documentation regarding the nature of the exemption, then proceed to the next applicable section (B2: NATA Accreditation; B3: Radiopharmaceuticals; or Other Information).

6. **Is the therapeutic good classified by the TGA as for Research Use Only (RUO)?**

☒ No

☐ Yes.

7. **Is the therapeutic good in the process of being considered for inclusion by the TGA?**

☒ No.

☐ Yes. Please provide the TGA Application ID and submission date:

Application ID:	
Submission Date:	

8. **Is the intended purpose in this reapplication the same as the intended purpose in the application for inclusion in the ARTG?**

☒ Yes

☐ No. Please explain the differences:

The intended purpose in the application (severe treatment-resistant hypertension) is a narrower population than included in the ARTG (all uncontrolled hypertension).

Other Information

Please advise us if there is anything relevant to MSAC's consideration of the reapplication that is not addressed elsewhere in this template. For example, proposed major changes to the ADAR unrelated to matters of concern raised by MSAC; or the health technology is subject to a recall or other regulatory action. You can also list here any additional organisations, experts, or other stakeholders for consultation.

The proposed change is in line with that suggested by MSAC as per the PSD. In the PSD, MSAC suggested there may be a clinical need for this treatment in a severe-resistant hypertensive patient population (i.e. a narrower definition than the original submission). Therefore, we are planning a re-submission in this narrower patient population, with all other aspects of the ratified PICO remaining the same.

Table 1: Summary of key matters of concern

COMPONENT	MATTER OF CONCERN	HOW MATTER WILL BE ADDRESSED IN ADAR
Population	MSAC considered that there may be a high clinical need for RDN in a specific subset of patients who have treatment resistant hypertension (TRHTN) (e.g., patients who are in 'hypertensive crisis' with >180 mmHg SBP/120 mmHg DBP) who are on optimal medical management (OMM) with no other treatment alternatives as determined by a multidisciplinary team. However, MSAC considered that if this subpopulation was pursued, then a reapplication supported by evidence for the clinical effectiveness of RDN in this specific subpopulation would be required.	Addressed. The re-application will be supported by evidence of clinical effectiveness of RDN in this specific subpopulation of patients with >180 mmHg SBP/120 mmHg DBP who are on OMM. OMM was defined during the PICO process for MSAC application 1659 as patients on three or more antihypertensive drugs, including a diuretic, at optimal tolerated doses.

Table 2: Summary of changes to PICO criteria since previous consideration by MSAC

☐ The proposed ADAR **will not** contain any changes to the PICO previously considered by MSAC.

☒ The proposed ADAR will reflect changes to the PICO as detailed below.

PICO COMPONENT	COMPONENT DESCRIPTION AS CONSIDERED BY MSAC	REVISED COMPONENT DESCRIPTION AND RATIONALE
POPULATION	Adults ≥18 years of age with treatment-resistant hypertension confirmed by a specialist, with elevated systolic blood pressure ≥ 150 mm Hg and/or elevated diastolic blood pressure ≥110 mm Hg despite optimal medical management (using three or more antihypertensive drugs, including a diuretic, at optimal tolerated doses) and one or more of the following: • systolic blood pressure > 180 mm Hg • previous myocardial infarction • previous stroke or transient ischaemic attack (TIA) • diabetes mellitus • chronic kidney disease • atrial fibrillation • heart failure • peripheral arterial disease. Prior specialist consultation is required to confirm optimal medical management and verify treatment-resistant hypertension.	Adults ≥18 years of age with treatment-resistant hypertension confirmed by a specialist, with elevated systolic blood pressure **≥ 180 mm Hg** and/or elevated diastolic blood pressure **≥120 mm Hg** despite optimal medical management (using three or more antihypertensive drugs, including a diuretic, at optimal tolerated doses). Prior specialist consultation is required to confirm optimal medical management and verify treatment-resistant hypertension. NB. The list of additional criteria of one or more of the cardiovascular risk factors has been removed as one of the options in the original list was “systolic blood pressure > 180 mm Hg” which makes this list redundant as the restricted population in the re-submission will automatically be at high cardiovascular risk due to having severe hypertension.
<PRIOR TEST> (IF APPLICABLE)	N/A	N/A

INTERVENTION	Renal denervation with radiofrequency ablation catheter (single electrode or multielectrode catheters) plus optimal medical management	No change
COMPARATOR	Optimal medical management, with or without sham renal denervation.	No change
OUTCOMES **Safety**:	**Safety outcomes:** • Incidence of major adverse events • Renal artery re-intervention (e.g. as a result of perforation or dissection) • Vascular complications • New stroke • Embolic event resulting in end-organ damage • New-onset of end-stage renal disease • Renal artery stenosis (>70%) • All-cause mortality (short-term only – long term mortality outcomes are captured as efficacy outcomes).	No change – all outcomes to be presented as the clinical evidence allows.
Effectiveness:	**Efficacy outcomes:** • Incidence of cardiovascular disease – composite outcome and also reported separately for: o New onset of end-stage renal disease o New myocardial infarction o New stroke or transient ischaemic attack (TIA) o New onset atrial fibrillation o New onset heart failure o new myocardial infarction • Change in SBP (24-h ABPM and OBPM) • Change in DBP (24-h ABPM and OBPM)	

Health care system outcomes:	• Incidence of achieving target SBP or DBP (140 mm Hg) • Incidence of achieving target DBP (90 mm Hg) • Quality of life • Cardiovascular mortality • All-cause mortality. **Healthcare resources:** • Cost of catheter (the applicant intends to apply for listing on Part C of Prostheses List) • Cost of procedure (i.e. proposed service fee; anaesthetist services; theatre/admission costs, including consumables; amortised cost of generator) • Cost associated with changes in clinical management (e.g. radiographic imaging for renal stenosis; PBS-listed hypertension medications).	

SYSTEMATIC REVIEW QUESTIONS – ORIGINAL AS CONSIDERED BY MSAC	**SYSTEMATIC REVIEW QUESTIONS – CHANGES**
What is the safety, effectiveness, and cost effectiveness of Renal denervation with radiofrequency ablation catheter (single electrode or multielectrode catheters) plus optimal medical management compared to optimal medical management in adults ≥18 years of age with treatment-resistant hypertension confirmed by a specialist, **with elevated systolic blood pressure ≥ 150 mm Hg and/or elevated diastolic blood pressure ≥110 mm Hg** despite optimal medical management (using three or more antihypertensive drugs, including a diuretic, at optimal tolerated doses) and high risk of CVD.	What is the safety, effectiveness, and cost effectiveness of Renal denervation with radiofrequency ablation catheter (single electrode or multielectrode catheters) plus optimal medical management compared to optimal medical management in adults ≥18 years of age with treatment-resistant hypertension confirmed by a specialist, **with elevated systolic blood pressure ≥ 180 mm Hg and/or elevated diastolic blood pressure ≥120 mm Hg** despite optimal medical management (using three or more antihypertensive drugs, including a diuretic, at optimal tolerated doses) and high risk of CVD. NB: The change from the original submission has been highlighted in bold.