

MSAC application 1832

**Detection of Measurable Residual
Disease (MRD) in patients with
Multiple Myeloma (MM)**

Application for MBS eligible service or health technology

HPP Application number:

HPP200461

Application title:

Measurable residual disease testing for people with multiple myeloma

Submitting organisation:

HEALTH TECHNOLOGY ANALYSTS PTY LIMITED

Submitting organisation ABN:

13099239442

Application description

Succinct description of the medical condition/s:

Multiple myeloma (MM) is an aggressive cancer that starts in the bone marrow, the site of normal blood cell production. MM causes the abnormal development of plasma cells, a type of white blood cell that helps the immune system fight infection. The abnormal plasma cells build up in the bone marrow, crowding out healthy bone marrow cells, preventing the development of healthy blood cells. Patients typically present with symptoms such as bone pain, recurrent infections, fatigue and signs of kidney disease. Despite initial treatment, patients with MM frequently relapse, and this type of MM is associated with poor long-term survival outcomes.

Succinct description of the service or health technology:

Measurable residual disease (MRD) testing uses very sensitive laboratory methods to look for small amounts of myeloma cells that may persist after treatment, particularly levels too low to see under a microscope. The main test methods used are flow cytometry and molecular methods such as next-generation sequencing (NGS). MRD test results can be used by doctors to determine depth of response and estimate the risk of MM relapse to decide if more or less intensive treatment is needed.

Application contact details

Are you the applicant, or are you a consultant or lobbyist acting on behalf of the applicant?

Consultant

Are you applying on behalf of an organisation, or as an individual?

Organisation

Applicant organisation name:

Adaptive Biotechnologies Corporation

Application details

Does the implementation of your service or health technology rely on a new listing on the Pharmaceutical Benefits Scheme (PBS) and/or the Prescribed List?

No

Is the application for a new service or health technology, or an amendment to an existing listed service or health technology?

New

What is the type of service or health technology?

Investigative

Please select the type of investigative health technology:

Molecular diagnostic tests

Please select the type of molecular diagnostics health technology:

Other genetic test

PICO sets

Application PICO sets:

PICO set name
MRD testing for multiple myeloma patients to inform clinical management and monitoring

State the purpose(s) of the health technology for this PICO set and provide a rationale:

Purpose category:

Monitoring

Purpose description:

To monitor a condition over time.

Purpose category:

Outcome / response assessment

Purpose description:

To assess an outcome or response following an intervention or treatment

Purpose category:

Predictive

Purpose description:

To provide predictive information to support selection of a specific therapy or intervention

Purpose category:

Prognosis

Purpose description:

To provide information about prognosis (staging/re-staging)

What additional purpose(s) could the health technology be used for, other than the purposes listed above for this PICO set?

Purpose category:

Value of knowing

Purpose description:

Tests may also provide additional non-health value to patients or to their family members and carers, and discussion of these outcomes could supplement an assessment of the clinical utility of the technology.

Rationale:

MRD testing provides useful prognostic information that potentially provides patients and clinicians with the value of knowing. However, value of knowing is not a primary reason for ordering the service.

Population

Describe the population in which the proposed health technology is intended to be used:

The proposed health technology is intended to be used in patients with multiple myeloma (MM) requiring assessment of measurable residual disease (MRD) for the purposes of determining response to therapy and monitoring for the risk of relapse. MRD testing is proposed at key treatment milestones: when a patient achieves a complete response to treatment to confirm the depth of response and inform subsequent clinical management, and during the maintenance phase of treatment or following treatment discontinuation, where MRD-status is used to monitor the risk of relapse and inform a risk-adapted treatment strategy.

MRD refers to the detection of small amounts of cancer cells that remain in the body during or after treatment, and MRD-status is being used more often as a surrogate endpoint for PFS and OS in clinical trials, reflecting its growing relevance to clinical practice (Sonneveld et al. 2024). In MM, MRD-negative status is strong prognostic factor for PFS and OS and the growing evidence supports MRD testing to guide treatment decisions (Chen et al. 2026). MM is a rare, progressive, malignant disorder of the plasma cells (Padala et al. 2021). In Australia, over 2,700 people are diagnosed with MM annually, comprising 1.6% of all new cancer cases diagnosed. The average 5-year survival rate in Australia is 61%, being 59.8% for males and 61.8% for females (Cancer Australia 2025). There are over 1,200 deaths attributed to MM in Australia annually, representing 2.3% of all deaths from cancer. MM is a relapsing remitting cancer, meaning people will experience periods of disease control (remission), followed by periods when the disease is active (relapse). Relapse is a nearly inevitable consequence of MM. Patients experience worsening duration of treatment response, median survival and quality of life at each successive line of treatment (Chim et al. 2018; Rodríguez-Lobato et al. 2025) underscoring the importance of achieving a deep and long-lasting remission at the first-line of treatment.

Initial treatment for newly diagnosed MM depends on their eligibility for high dose therapy and autologous stem cell transplant (ASCT) which is determined based on the patient's age, comorbidities and functional status. ASCT offers patients with the best chance for achieving deep and long-lasting remission (MMRF 2026). Prior to ASCT, patients receive high-intensity induction therapy to reduce tumour burden and improve the duration of transplant (Myeloma Australia 2026a). Transplant-ineligible patients often experience worse outcomes compared to transplant-eligible patients due to advanced age, frailty, comorbidities and high discontinuation rates (Jung

2025). Wherever possible, patients should be considered for a clinical trial. Otherwise, transplant-ineligible patients often are recommended to receive continuous daratumumab-based combination regimens until disease progression (Myeloma Australia 2026). Other therapies for first-line transplant-ineligible MM include bortezomib, lenalidomide and dexamethasone (VRd) or bortezomib, cyclophosphamide and dexamethasone (VCd) (Myeloma Australia 2026d). If a patient is refractory to treatment, or relapses after an initial period of response, termed relapsed or refractory MM (RRMM), treatment options in subsequent lines are combinations incorporating lenalidomide, pomalidomide, bortezomib, carfilzomib and daratumumab, among others (Quach 2022). The most common 2L therapy currently is a combination consisting of daratumumab, bortezomib and dexamethasone (DVd)(Quach 2022).

Following the initial course of treatment, patients often receive maintenance therapy to prolong progression-free survival (PFS). Typically, this consists of lenalidomide as monotherapy, if the patient received lenalidomide-based induction therapy (Myeloma Australia 2026b). In patients who received DVd as a 2L treatment, maintenance therapy consists of daratumumab monotherapy after the initial 8 cycles (Facon et al., 2019). Maintenance is often continued indefinitely until disease progression or toxicity. However, this requires careful balancing of treatment benefits against toxicity and quality of life impacts (Myeloma Australia 2026b). Continued exposure to anti-myeloma treatments in the maintenance stage can have negative impacts on quality of life due to the accumulated toxicity and side effects from treatment which can include fatigue, gastrointestinal effects, and muscle cramping (Grossman and Crumrin, 2026). Indefinite use of maintenance therapy also carries a risk in the development of secondary cancers (Kumar et al., 2026). During maintenance therapy, patients are monitored for relapse, which may necessitate the initiation of new therapy. Not all patients with relapsed MM require immediate treatment and may require a 'watch and wait' approach.

Select the most applicable Medical condition terminology (SNOMED CT):

Multiple myeloma

Intervention

Name of the proposed health technology:

Measurable residual disease (MRD) testing assessed via next-generation sequencing (NGS) or multiparametric flow cytometry (MFC)

Comparator

Nominate the appropriate comparator(s) for the proposed medical service (i.e. how is the proposed population currently managed in the absence of the proposed medical service being available in the Australian health care system). This includes identifying health care resources that are needed to be delivered at the same time as the comparator service:

Response to treatment is currently measured using the standard IMWG criteria, which includes assessment of serum and urine M-protein by electrophoresis, immunofixation or both, quantitation of plasma cells in bone marrow biopsy by immunohistochemistry, and sFLC assays (Kumar et al. 2016). Additionally, biochemical response is often paired with functional imaging (PET or MRI), which checks for signs of metabolically active disease. The absence of metabolic lesions combined with an assessment of complete response measured by biochemical tests determines a deep response. In comparison, a discordant assessment between biochemical response and functional imaging suggests that the patient may not truly be in deep remission.

Outcomes

Outcome description – please include information about whether a change in patient management, or prognosis, occurs as a result of the test information:

Health benefits

MRD testing is expected to provide prognostic value, informing the safe avoidance of continuing treatment or maintenance, and predictive value, predicting response to treatment including ASCT, and the risk of relapse during disease monitoring.

MRD testing is expected to result in a change in management (safe treatment de-escalation, or intensification) resulting in change in patient health outcomes (mortality, morbidity, quality of life).

Health harms

The MRD test itself is in-vitro, however the bone marrow biopsy procedure to obtain the sample for testing carries a risk of adverse events (such as haemorrhage, infection, pain). The procedure is relatively safe with a low rate of adverse events reported (less than 0.1%) (Bain 2005).

Health resources

MRD testing enables a risk-adapted approach to care, supporting treatment de-escalation or discontinuation in patients with sustained MRD negativity, optimising

healthcare resource utilisation by providing cost-savings from treatment avoided.

Value of knowing

MRD testing provides clinicians and patients with reassurance and the confidence in treatment decisions. A study published by Chen and Tang (2014) highlights the importance of prognostic disclosure to patients, supporting the value of knowing from MRD testing.

Proposed MBS items

Please provide at least one proposed item with their descriptor and associated costs, for each population / intervention:

Proposed item:

AAAAA

Category number:

6

Category description:

Pathology services

Proposed item descriptor:

Measurable residual disease (MRD) testing by next-generation sequencing, performed on bone marrow from a patient diagnosed with multiple myeloma currently receiving active treatment, to confirm treatment response, or for disease monitoring to guide clinical management, as requested by a specialist or consultant physician practising as a haematologist or oncologist

Proposed MBS fee:

\$2,100.00

Indicate the overall cost per patient of providing the proposed health technology:

\$0.00

Please specify any anticipated out of pocket expenses:

\$0.00

Provide any further details and explain:

No out-of-pocket costs are anticipated at the proposed item fee.

Proposed item:

BBBBB

Category number:

6

Category description:

Pathology services

Proposed item descriptor:

Measurable residual disease (MRD) testing by multiparametric flow cytometry to a minimum sensitivity of 10^{-5} performed on bone marrow from a patient diagnosed with multiple myeloma currently on active treatment, to confirm treatment response, or for disease monitoring during maintenance therapy, as requested by a specialist or consultant physician practising as a haematologist or oncologist

Proposed MBS fee:

\$563.20

Indicate the overall cost per patient of providing the proposed health technology:

\$0.00

Please specify any anticipated out of pocket expenses:

\$0.00

Provide any further details and explain:

No anticipated out-of-pocket costs at the proposed item fee.

How is the technology / service funded at present? (For example: research funding; State-based funding; self-funded by patients; no funding or payments):

Some patients access MRD testing through clinical trials. Hospitals that provide MRD testing rely on a mix of internal budgets to run at-cost or at a loss, and charitable support. Patients may make co-payments to help fund the service. Because MRD testing can be also delivered as an outpatient service, out of pocket costs may apply to both private and public patients.

Claims

In terms of health outcomes (comparative benefits and harms), is the proposed technology claimed to be superior, non-inferior or inferior to the comparator(s)?

Superior

Please state what the overall claim is, and provide a rationale:

In comparison to current assessments of treatment response alone, MRD testing is claimed to result in superior health outcomes by enabling timely, and MRD-driven clinical management to improve PFS and OS.

In combination with an achievement of complete response, MRD-negativity is a strong prognostic indicator for PFS and OS and can serve as a clinical endpoint to guide treatment goals. Combined complete response and MRD-negativity can safely inform treatment de-escalation or discontinuation, avoid adverse events from

treatment and improve quality of life. Patients also benefit from the value of knowing the depth of treatment response and can feel reassured in treatment decisions. In contrast, MRD-positivity despite an assessment of complete response is an indicator of persistent disease and increases the risk of early relapse. In such cases, the patient may benefit from seeking treatment intensification. During monitoring, MRD testing can help to detect early disease resurgence allowing clinicians to adopt a dynamic risk-adapted strategy to prolong PFS.

Estimated utilisation

Estimate the prevalence and/or incidence of the proposed population:

As MRD is proposed to guide clinical management and inform treatment decisions, it is expected that the population will primarily consist of patients in earlier lines of therapy. The 5-year prevalence rate of MM was considered a suitable proxy for the eligible patient population. To estimate the utilisation of the proposed health technology, the 5-year prevalence of multiple myeloma was projected from 2025 at the historical rate of growth. In the first year of listing, the 5-year prevalence was estimated at 10, 668.

The eligible population comprises of patients receiving active treatment who achieve a complete response at key treatment milestones, and patients receiving maintenance therapy who require MRD testing for disease monitoring. Therefore, not all patients with MM are expected to receive MRD testing. To estimate utilisation accurately, the Applicant intends to request DUSC utilisation data to determine the number of patients receiving active treatment who may require confirmation of depth of response or MRD-based disease monitoring. /to summarise the extent of patients on each line of therapy.

Of the eligible patients, it is expected that most will receive MRD testing during the disease journey, with frequency and timing tailored to treatment and at the discretion of the treating clinician. In the first year of MBS listing, utilisation is expected to be low due to the time it would take laboratories to receive NATA accreditation. At steady-state, utilisation is expected to be high (~90% of patients eligible will receive MRD testing at some point in their lifetime).

Provide the percentage uptake of the proposed health technology by the proposed population:

Year 1 estimated uptake (%):

30

Year 2 estimated uptake (%):

60

Year 3 estimated uptake (%):

80

Year 4 estimated uptake (%):

90

Estimate the number of patients who will utilise the proposed technology for the first full year:

2,811

Optionally, provide details:

Utilisation of MRD testing will depend on patterns of treatment in MM patients. MRD testing is proposed to occur after determination of CR using standard methods. As treatments become more effective and rates of CR increase, the number of patients who are eligible for MRD testing is expected to increase over time.

The current approach is based on the 5-year prevalence of MM. Utilisation data for current treatments will be requested to inform more robust estimates.

Will the technology be needed more than once per patient?

Yes, multiple times

Over what duration will the health technology or service be provided for a patient? (preferably a number of years):

Variable

Optionally, provide details:

MRD testing is proposed to inform clinical management and guide treatment decisions. Its use is therefore expected to be concentrated among patients in earlier lines of therapy.

The course of disease for MM patients varies widely, with some patients experiencing long periods of survival following diagnosis. In these patients, MRD testing may be required multiple times over the patient's lifetime. As such, no duration is specified in this application, reflecting the variability of patient experience and clinical need.

What frequency will the health technology or service be required by the patient over the duration? (range, preferably on an annual basis):

Variable

Optionally, provide details:

Some limitation to the frequency or number of services delivered should be placed to ensure MRD testing is used to guide clinical management. Use of MRD testing is proposed to be tailored in frequency and timing according to treatment received and proposed to be used when a complete response to treatment is achieved. Because MRD testing requires a bone marrow aspirate, the invasiveness of the bone marrow biopsy procedure is expected to limit use to circumstances where results are likely to materially influence care, reducing the risk of overuse.

For disease monitoring, MRD monitoring is proposed annually (NCCN 2026) with the potential for more frequent monitoring of every 6 months for MRD-positive patients (Chen et al. 2026).

No specific restriction on frequency or number of services is presented in this application; however, it is anticipated that this will be refined through consultation with experts during the PICO development process.

Consultation

List all entities that are relevant to the proposed service / health technology. The list can include professional bodies / organisations who provide, request, may be impacted by the service/health technology; sponsor(s) and / or manufacturer(s) who produce similar products; patient and consumer advocacy organisations or individuals relevant to the proposed service/health technology.

Entity who provides the health technology/service:

The Royal College of Pathologists of Australasia (RCPA)

Entity who requests the health technology/service:

The Haematology Society of Australia and New Zealand (HSANZ)

Patient and consumer advocacy organisations relevant to the proposed service/health technology:

Myeloma Australia

Regulatory information

Would the proposed health technology involve the use of a medical device, in-vitro diagnostic test, radioactive tracer or any other type of therapeutic good?

Yes

Has it been listed or registered or included in the Australian Register of Therapeutic Goods (ARTG) by the Therapeutic Goods Administration (TGA)?

Yes

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?

Class III

Please enter all relevant ARTG IDs:

ARTG ID	ARTG name
439530	Acquired genetic alteration IVDs
439531	Interpretive software IVDs

Is the intended purpose in this application the same as the intended purpose of the ARTG listing(s)?

Yes