NICE National Institute for Health and Care Excellence

Putting NICE guidance into practice

Resource impact report:
Nivolumab with ipilimumab for untreated unresectable malignant pleural mesothelioma (TA818)

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Summary

NICE has recommended nivolumab plus ipilimumab as an option for untreated unresectable malignant pleural mesothelioma in adults. See the full recommendation wording in section 1.

By 2026/27 we estimate that:

- around 635 people with unresectable malignant pleural mesothelioma will be eligible for treatment with nivolumab plus ipilimumab each year after adjusting for predicted population growth (assumes no change to the rate of incidence).
- around 570 people will receive nivolumab plus ipilimumab each year after adjusting for predicted population growth. This is based on the expectation that nivolumab plus ipilimumab is superior to pemetrexed plus cisplatin or carboplatin and will become the new standard of care and have a large market share.
- Around 2,523 additional appointments for administering nivolumab plus ipilimumab will be needed as shown in table 2. This is approximately 4 per 100,000 population.

Table 1 Estimated number of people in England receiving nivolumab plus ipilimumab

	2022/23	2023/24	2024/25	2025/26	2026/27
Eligible population (adjusted for predicted population growth each year)	620	623	627	631	635
Uptake rate for nivolumab plus ipilimumab (%)	80	90	90	90	90
Population receiving nivolumab plus ipilimumab each year	**496**	**561**	**564**	**568**	**571**

Table 2 Estimated additional appointments needed in England

	2022/23	2023/24	2024/25	2025/26	2026/27
Additional appointments	2,189	2,478	2,493	2,508	2,523

This report is supported by a local resource impact template because the list prices of nivolumab and ipilimumab have a discount that is commercial in confidence. The discounted prices of nivolumab and ipilimumab can be put into the template and other variables may be amended.

This technology is commissioned by NHS England. Providers are NHS hospital trusts.

1 Nivolumab plus ipilimumab

1.1 NICE has recommended nivolumab plus ipilimumab as an option for untreated unresectable malignant pleural mesothelioma in adults, only if:

- they have an Eastern Cooperative Oncology Group (ECOG) performance status of 0 or 1.
- the company provides it according to the commercial arrangement.

1.2 Malignant pleural mesothelioma is an aggressive cancer of the pleura, the mesothelial cells surrounding the lungs. Most cases are linked to occupational exposure to asbestos, and it typically presents 20 to 50 years after exposure.

1.3 Clinical trial evidence suggests that nivolumab plus ipilimumab is likely to extend how long people live compared with chemotherapy.

1.4 Standard care for untreated unresectable malignant pleural mesothelioma is platinum-doublet chemotherapy using pemetrexed with either cisplatin or carboplatin.

1.5 The option to give nivolumab monotherapy instead of second line chemotherapy to reduce risk of immunosuppression was an interim treatment option to allow for greater flexibility in the management of cancer during the COVID-19 pandemic; ensuring clinicians had additional treatment options through this time. This option only remains in place for patients who started first-line chemotherapy prior to this technology appraisal publishing, when the only first-line option available was chemotherapy.

2 Resource impact of the guidance

2.1 By 2026/27 we estimate that:

- around 635 people with unresectable malignant pleural mesothelioma will be eligible for treatment with nivolumab plus ipilimumab each year after adjusting for predicted population growth.
- around 570 people will receive nivolumab plus ipilimumab each year after adjusting for predicted population growth. This is based on the expectation that nivolumab plus ipilimumab is superior to pemetrexed plus cisplatin or carboplatin and will become the new standard of care and have a large market share.
- around 2,523 additional appointments for administering nivolumab plus ipilimumab will be needed as shown in table 4. This is approximately 4 per 100,000 population.

2.2 The current treatment and future uptake figure assumptions are based on clinical opinion and NICE assumptions and are shown in the resource impact template. Table 3 shows the number of people in England who are estimated to receive nivolumab plus ipilimumab by financial year.

Table 3 Estimated number of people receiving nivolumab plus ipilimumab using NICE assumptions

	2022/23	2023/24	2024/25	2025/26	2026/27
Eligible population (adjusted for predicted population growth each year)	620	623	627	631	635
Uptake rate for nivolumab plus ipilimumab (%)	80	90	90	90	90
Population receiving nivolumab plus ipilimumab each year	**496**	**561**	**564**	**568**	**571**

Table 4 Estimated additional appointments needed in England

	2022/23	2023/24	2024/25	2025/26	2026/27
Additional appointments	2,189	2,478	2,493	2,508	2,523

2.3 This report is supported by a local resource impact template. Nivolumab and ipilimumab both have a simple discount patient access scheme. This makes nivolumab and ipilimumab available to the NHS with a discount. The size of the discount is commercial in confidence. It is the company's responsibility to let relevant NHS organisations know details of the discounts. The discounted prices of nivolumab and ipilimumab can be put into the template and other variables may be amended.

Savings and benefits

2.4 Patient experts noted that immunotherapies such as nivolumab and ipilimumab offer hope for people with malignant pleural mesothelioma.

2.5 The committee stated that malignant pleural mesothelioma is an aggressive disease with a poor prognosis and there is an unmet need for new treatment options.

3 Implications for commissioners

3.1 This technology is commissioned by NHS England. Providers are NHS hospital trusts.

3.2 There will be a capacity impact on chemotherapy units for people who receive nivolumab plus ipilimumab. The resource impact template allows commissioners to assess the resource impact of any additional attendances required at provider services.

3.3 Nivolumab and ipilimumab falls within the programme budgeting category 2D: Cancers and Tumours - Lung.

4 How we estimated the resource impact

The population

4.1 Around 2,270 people were diagnosed with mesothelioma in 2019 [Office for National Statistics 2021 - cancer registration statistics England 2019 data release]. Table 5 shows the details of the population with untreated unresectable malignant pleural mesothelioma who are estimated to be eligible for treatment with nivolumab plus ipilimumab.

Table 5 Number of people eligible for treatment in England

Population	Proportion of previous row (%)	Number of people in 2026/27
Adult population (adjusted for predicted growth each year)		46,263,200
Incidence of mesothelioma[1]	0.005	2,270
Proportion of people with pleural mesothelioma[2]	95	2,150
Proportion of people with unresectable malignant pleural mesothelioma[3]	95	2,045
Proportion of people with an ECOG status of 0 or 1[3]	64	1,310
Proportion of people choosing immunotherapy first line[4]	48.5	635
Number of people estimated to receive nivolumab plus ipilimumab in 2022/23[5]	80	500
Number of people estimated to receive nivolumab plus ipilimumab by year 2026/27 after adjusting for population growth[5]	90	570

[1] Office for National Statistics 2021 - cancer registration statistics England 2019 data release (ICD code C45)

[2] Cancer research, mesothelioma incidence by anatomical site

[3] National-mesothelioma-audit-report-2020-audit-period-2016-18.

[4] CDF team NHS England

[5] Clinical opinion

Assumptions

4.2 The resource impact template assumes that:

- The median duration for people receiving nivolumab with ipilimumab is 5.55 months (8 doses for nivolumab and 4 doses for ipilimumab). This can be amended if data on mean duration becomes available.
- Standard care for untreated unresectable malignant pleural mesothelioma is chemotherapy.
- Nivolumab and ipilimumab are administered intravenously. The recommended dose is 360 mg over 30 minutes every 3 weeks for nivolumab and 1 mg per kilogram over 30 minutes every 6 weeks for ipilimumab.
- Data from NHSE estimates people choosing second line nivolumab is 31 per month - a total of 372 per year. This is estimated to be 60% of those who had first line treatment. Therefore, the number of people choosing first line treatment is back calculated to be approximately 620.
- The option to give nivolumab monotherapy instead of second line chemotherapy to reduce risk of immunosuppression is an interim treatment option to allow for greater flexibility in the management of cancer during the COVID-19 pandemic; ensuring clinicians had additional treatment options through this time. This option only remains in place for patients who started first-line chemotherapy prior to this technology appraisal publishing, when the only first-line option available was chemotherapy.
- The interim use of nivolumab monotherapy at second line is not included in the resource impact calculations.
- Pemetrexed with cisplatin or carboplatin will largely be displaced and used as a second line therapy for patients who are fit enough to receive it on progression with nivolumab with ipilimumab. Clinical expert estimate 40% of patients who receive

nivolumab with ipilimumab would receive subsequent chemotherapy.

- There will not be a significant prevalent population as the disease is rapidly progressing and patients have a limited life expectancy.
- The resource impact over time sheet in the template allows users to input assumption on future incidence rates of mesothelioma.

Administration costs (National Tariff 2022/23)

- SB12Z Deliver simple parenteral chemotherapy at first attendance £162.
- SB13Z Deliver more complex parenteral chemotherapy at first attendance £324.
- SB14Z Deliver Complex Chemotherapy, including Prolonged Infusional Treatment, at First Attendance £486.

About this resource impact report

This resource impact report accompanies the NICE guidance on Nivolumab with ipilimumab for untreated unresectable malignant pleural mesothelioma and should be read with it.