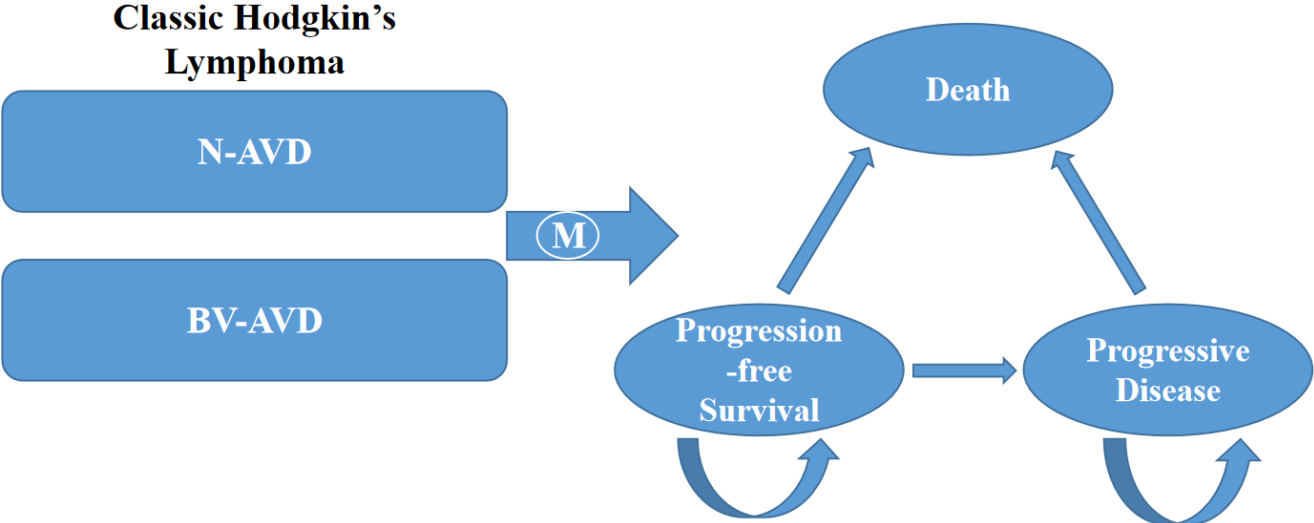


Figure S1. Model Structure.



Abbreviation: M, Markov; N, nivolumab; BV, brentuximab vedotin; AVD, doxorubicin/vinblastine/dacarbazine.

**Table S1.** The CHEERS 2022 Checklist.

<b>Title and abstract</b>	<b>Item No</b>	<b>Recommendation</b>	<b>Reported</b>
Title	1	Identify the study as an economic evaluation and specify the interventions being compared.	P1/L1-L3
Abstract	2	Provide a structured summary that highlights context, key methods, results, and alternative analyses.	P1-2/L16-L32
<b>Introduction</b>			
Background and objectives	3	Give the context for the study, the study question, and its practical relevance for decision making in policy or practice.	P2-5/L35-L96
<b>Methods</b>			
Health economic analysis plan	4	Indicate whether a health economic analysis plan was developed and where available.	P5/L98-114
Study population	5	Describe characteristics of the study population (such as age range, demographics, socioeconomic, or clinical characteristics).	P6/L112-120
Setting and location	6	Provide relevant contextual information that may influence findings.	P5-6/L101-114
Comparators	7	Describe the interventions or strategies being compared and why chosen.	P6/L102-114
Perspective	8	State the perspective(s) adopted by the study and why chosen.	P7/L143-145
Time horizon	9	State the time horizon for the study and why appropriate.	P10/L163-164
Discount rate	10	Report the discount rate(s) and reason chosen.	P6/L123-114
Selection of outcomes	11	Describe what outcomes were used as the measure(s) of benefit(s) and harm(s)	P7/L130-132
Measurement of outcomes	12	Describe how outcomes used to capture benefit(s) and harm(s) were measured.	P8/Table 1
Valuation of outcomes	13	Describe the population and methods used to measure and value outcomes.	P9/L153-154
Measurement and valuation of resources and costs	14	Describe how costs were valued.	P9-10/L155-158
Currency, price date, and conversion	15	Report the dates of the estimated resource quantities and unit costs, plus the currency and year of conversion.	P10/L163-166
Rationale and description of model	16	If modelling is used, describe in detail and why used. Report if the model is publicly available and where it can be accessed.	P7/L126-131
Analytics and assumptions	17	Describe any methods for analysing or statistically transforming data, any extrapolation methods, and approaches for validating any model used.	P11/L171-177
Characterizing heterogeneity	18	Describe any methods used for estimating how the results of the study vary for subgroups.	P11/L179-181
Characterizing distributional effects	19	Describe how impacts are distributed across different individuals or adjustments made to reflect priority	Not applicable

		populations.	
Characterizing uncertainty	20	Describe methods to characterise any sources of uncertainty in the analysis.	P11/L179-181
Approach to engagement with patients and others affected by the study	21	Describe any approaches to engage patients or service recipients, the general public, communities, or stakeholders (such as clinicians or payers) in the design of the study.	Not applicable
<b>Results</b>			
Study parameters	22	Report all analytic inputs (such as values, ranges, references) including uncertainty or distributional assumptions.	P10/L195-205
Summary of main results	23	Report the mean values for the main categories of costs and outcomes of interest and summarise them in the most appropriate overall measure.	P11/L185-232
Effect of uncertainty	24	Describe how uncertainty about analytic judgments, inputs, or projections affect findings. Report the effect of choice of discount rate and time horizon, if applicable.	P14/L198-206
Effect of engagement with patients and others affected by the study	25	Report on any difference patient/service recipient, general public, community, or stakeholder involvement made to the approach or findings of the study.	Not applicable
<b>Discussion</b>			
Study findings, limitations, generalizability, and current knowledge	26	Report key findings, limitations, ethical or equity considerations not captured, and how these could affect patients, policy, or practice.	P16/L328-351
<b>Other</b>			
Source of funding	27	Describe how the study was funded and any role of the funder in the identification, design, conduct, and reporting of the analysis	P18/L371-372
Conflicts of interest	28	Report authors conflicts of interest according to journal or International Committee of Medical Journal Editors requirements.	P18/L374-375

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*Reference:*

1. Husereau D, Drummond M, Augustovski F, de Bekker-Grob E, Briggs AH, Carswell C, et al. Consolidated Health Economic Evaluation Reporting Standards 2022 (CHEERS 2022) Statement: Updated Reporting Guidance for Health Economic Evaluations. *Value Health*. 2022;25(1):3-9.

**Table S2.** Treatment Strategy.

<b>Treatment Strategy</b>	<b>Dose</b>	<b>Time</b>
Nivolumab-AVD	Nivolumab, 240 mg (adults); 3 mg/kg (children)	Administered intravenously chemotherapy every 4 weeks for 6 cycles
	Doxorubicin, 25 mg/m <sup>2</sup>	
	Vinblastine, 6 mg/m <sup>2</sup>	
	Dacarbazine, 375 mg/m <sup>2</sup> on days 1 and 15	
Brentuximab vedotin-AVD	Brentuximab vedotin, 12 mg/kg	Administered intravenously chemotherapy every 4 weeks for 6 cycles
	Doxorubicin, 25 mg/m <sup>2</sup>	
	Vinblastine, 6 mg/m <sup>2</sup>	
	Dacarbazine, 375 mg/m <sup>2</sup> on days 1 and 15	
Second-line therapy	Dexamethasone, 40 mg/m <sup>2</sup> on days 1-4	Administered intravenously every 4 weeks
	Cisplatin, 100 mg/m <sup>2</sup>	
	Cytarabine, 2 g/m <sup>2</sup>	

Abbreviation: AVD, doxorubicin/vinblastine/dacarbazine.

**Table S3.** Results of Subgroup Analyses.

<b>Subgroup</b>	<b>PFS HR (95% CI)</b>	<b>ICER, \$/QALY<sup>a</sup></b>	<b>INHB, QALYs median (range)</b>	<b>Cost-effectiveness probability of nivolumab-AVD, %</b>
<b>Age, years</b>				
12-17	0.31 (0.13-0.74)	92,941.669	0.668	59
18-60	0.59 (0.36-0.95)	Dominant	0.709	100
> 60	0.30 (0.12-0.72)	89,388.410	0.665	58
<b>IPS risk group</b>				
0-3	0.46 (0.28-0.76)	236,543.100	0.961	60
4-7	0.46 (0.26-0.83)	236,543.100	0.961	60
<b>Stage</b>				
III	0.45 (0.22-0.92)	214,179.514	0.695	55
IV	0.48 (0.31-0.74)	299,195.340	0.699	57
<b>Symptoms</b>				
B	0.47 (0.30-0.74)	264,177.536	0.698	59

A	0.44 (0.22-0.86)	195,710.276	0.693	55
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<sup>a</sup> The nivolumab-AVD versus the brentuximab vedotin-AVD.

Abbreviation: CI, confidence interval; ICER, incremental cost-effectiveness ratio; PFS HR, progression-free survival hazard ratio; QALY, quality-adjusted life-year; N-AVD, nivolumab plus doxorubicin/vinblastine/dacarbazine; BV-AVD, Brentuximab vedotin plus doxorubicin/vinblastine/dacarbazine.