

Supplementary Table 1: Detailed input variables (mortality, rehospitalisations and quality of life)

Input variable	Mean	CI	Probability distribution	Source
<i>Mortality</i>				
OMT group				
1-year survival	28%	17 - 39	Beta(17.6; 45.4)	Dembitsky et al., 2004
2-year survival	13%	5 - 22	Beta(7.7; 51.4)	Dembitsky et al., 2004
HM-II				
30-day mortality	10.1%	4 - 18	Beta(7; 62)	UMC Utrecht (and Coyle et al., 2010)
1-year survival	68%	60 - 76	Beta(88.1; 41.5)	Slaughter et al., 2009
2-year survival	58%	49 - 67	Beta(66.4; 48.1)	Slaughter et al., 2009
<i>Rehospitalisations (number of events per patient-year)</i>				
HM-II	2.64		Uniform(+/-50%)	Slaughter et al., 2009
OMT	+20%		3 scenarios (0%, +20%, +40%)	Assumption based on Rose et al., 2001 and Slaughter et al., 2009
<i>Quality of life</i>				
OMT	0.548	0.389 - 0.708	Beta(19.9; 16.5)	Moskowitz et al., 1997
HM-II	0.809	0.745 - 0.873	Beta(116,4; 27,5)	Moskowitz et al., 1997

HM-II: HeartMate II; LVAD: left ventricular assist devices; OMT: optimal medical therapy.

There was a strict correlation between the imposed values of the survival distributions in order to avoid illogical values (i.e., the mortality at 2 years is always greater than that after 1 year).

Supplementary Table 2: Detailed costs for LVAD implantation, repeat hospitalizations and monthly (follow-up) costs

	Mean	Min.	Max.	St.dev	Probability distribution
<i>Cost LVAD implantation</i>					
LVAD device	€70,000				Scenario analysis
Surgery room and PLS	€4,385				Uniform(+/-50%)
Patient days <sup>a</sup>	€42,378	€6,549	€190,994	€30,590	Gamma(1.37; 26,117) + 6549
Imaging <sup>b</sup>	€1,015	€217	€3,453	€744	Gamma(1.15; 693) + 217
Laboratory <sup>c</sup>	€2,319	€541	€8,885	€1,440	Gamma(1.53; 1,166) + 541
Bloodproducts <sup>d</sup>	€4,797	€0	€23,162	€4,935	Gamma(0.95; 5,076)
Function examinations	€411	€17	€2,421	€434	Gamma(0.82; 478) + 17
Social work <sup>e</sup>	€1,200				Uniform(+/-50%)
<b>Total initial costs</b>	<b>€126,505</b>				
<i>Monthly costs</i>					
	LVAD	OMT			
rent PBU	€400				
LVAD accessories <sup>f</sup>	€267				
Physiotherapy <sup>g</sup>	€81	€81			
Dietetics	€11	€11			
Follow-up medication <sup>h</sup>	€288	€687			
Follow-up examinations					
First year	€145	€205			
Subsequent years	€69	€63			
<b>Total monthly costs</b>	<b>€1,261</b>	<b>€1,047</b>			Uniform(+/-50%)

### Costs rehospitalization

Patient days	€7,028	€1,150	€51,165	€8,209	Gamma(0.51; 11,466) + 1150
Imaging	€172	€0	€1,689	€263	Gamma(0.43; 401)
Laboratory	€449	€0	€2,528	€511	Gamma(0.77; 582)
Bloodproducts	€351	€0	€8,216	€1,108	Gamma(0.10; 3,502)
Function examinations	€119	€0	€977	€225	Gamma(0.28; 425)
<b>Total costs rehospitalization</b>	<b>€8,118</b>				

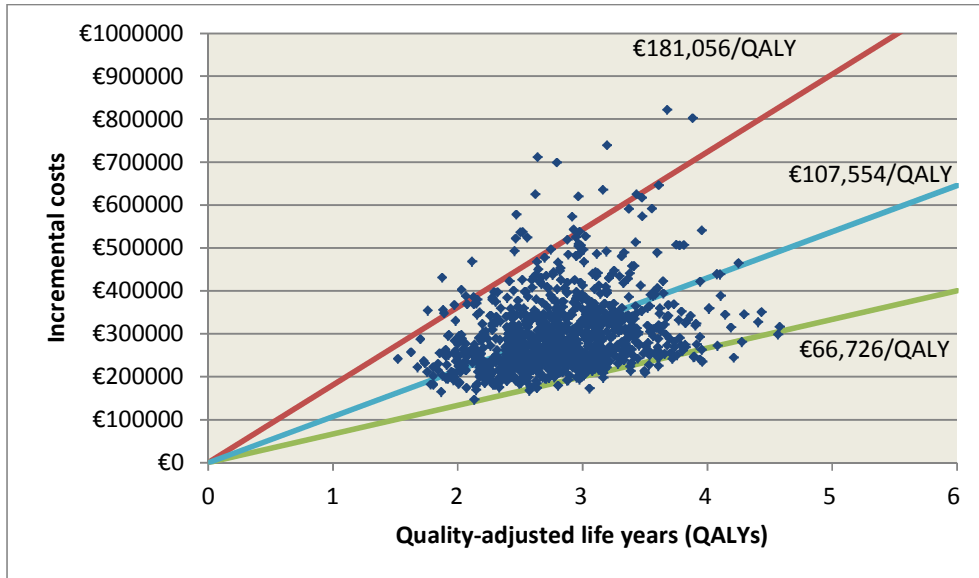
### Cost LVAD replacement<sup>1</sup>

<b>Total cost replacement</b>	<b>€126,505</b>
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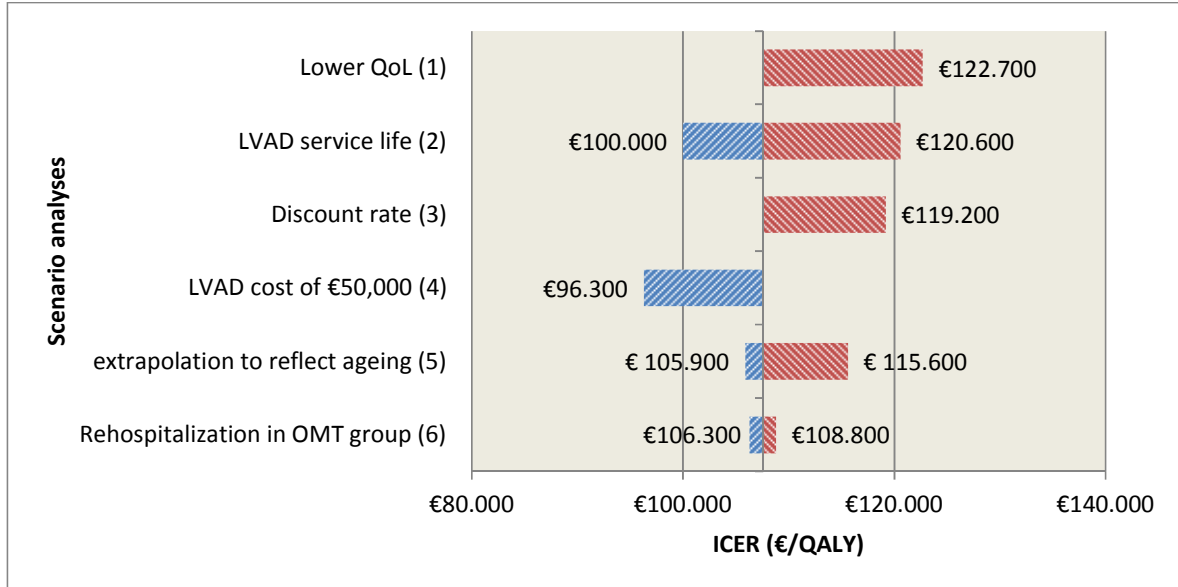
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- LVAD: left ventricular assist devices; OMT: optimal medical therapy; PBU: power base unit; PLS: permanent life support
  - The gamma distributions with a shift parameter model exactly the same minimum, average and standard deviation as measured in the sample.
  - a: Patients were hospitalized on average 40.9 days, with 11.7 IC days (€2,183/day) and 29.2 nursing days (€575/day). Reference costs from the Dutch guideline (2010) for cost analyses were used.(9) For rehospitalisation, this was 11.7 days (0.2 IC and 11.5 nursing days).
  - b: The cost for imaging and function examinations are based on 2010 NZa (Dutch Healthcare authority) rates.
  - c: The costs for laboratory tests are based on the UMC Utrecht financial records. The so called 'order rate' of €12.9 per sampling(9) was taken into account.
  - d: Reference costs from the Dutch guideline (2010) for cost analyses were used for blood products (erythrocytes, platelets, aphaeresis plasma, etc.).(9)
  - e: Specialty codes for social work were not available in the financial database. Costs for this category were estimated at €1,200, accountable shortly after LVAD implantation (expert opinion).
  - f: LVAD accessories: yearly cost of about €3,200 (€267/month) for extra batteries, battery holder, backup battery, shower kit, etc (expert opinion).
  - g: The monthly costs for physiotherapy and dietetics in the OMT group is assumed to be the same as measured in the LVAD group.

- h: The cost for follow-up medication and examinations is based on expert based treatment protocols. Follow-up examinations are more intensive in the beginning than after one year. Travel costs are included in these follow-up costs (€30 (incl. parking ticket) for an average distance of 68km for LVAD patients to the hospital).
- i: LVAD replacement costs are assumed to equal initial LVAD implantation costs.
- Details for all these cost categories are available in table format in the full HTA report (in Dutch).(1)

Supplementary Figure 1: the cost-effectiveness plane



Supplementary Figure 2: tornado graph (one-way sensitivity analysis)



ICER: incremental cost-effectiveness ratio; LVAD: left ventricular assist devices; OMT: optimal medical therapy; QALY: quality-adjusted life-year; QoL: quality of life.

1) Lowering QoL with 0.15 in both the LVAD and OMT group; 2) LVAD service life of 3 or 5 years; 3) Discount rate of 3% for costs and effects; 4) LVAD cost of €50,000 instead of €70,000; 5) no increase in the monthly mortality risk or a relative increase according to the age and gender-adjusted mortality risk in the Dutch population; 6) 0% or 40% more hospitalizations per patient year in the OMT group.