

Cost-effectiveness of dapagliflozin as a treatment for heart failure with reduced ejection fraction: a multinational health-economic analysis of DAPA-HF

Supplementary Material

Regression models developed for mortality

Parametric survival equations fitted to DAPA-HF individual patient data are used to estimate the incidence of all-cause and CV-specific mortality. Adjusted parametric survival equations have been developed based on the overall DAPA-HF trial population (intention-to-treat) in addition to key subgroups of interest. The parameterisations for the adjusted mortality equations are shown in Table S1. Weibull distributions were used in base case analysis as they result in the most plausible estimates of long-term survival when compared with previously published estimates, however sensitivity analysis showed that cost-effectiveness results were robust to the choice of survival distribution. Parameterisations are also available for Gompertz, Lognormal and Log-logistic distributions, however predictions made using the Gompertz equations are thought to underestimate patient survival, and conversely, Lognormal and Log-logistic distributions are thought to overestimate patient survival.

Table S1. Parameterisations for the adjusted mortality equations

Covariate	All-cause mortality			CV mortality		
	Coefficient	SE	p-value	Coefficient	SE	p-value
Weibull						
Shape	1.245	0.048	<0.001	1.222	0.052	<0.001
Scale	139304.051	51809.337	0.007	209901.536	89817.275	0.019
Dapagliflozin	0.133	0.068	0.051	0.144	0.077	0.060
Female	0.383	0.091	<0.001	0.381	0.103	<0.001
LVEF (centred)	-	-	-	0.017	0.005	0.002
NT-proBNP (log)	-0.545	0.041	<0.001	-0.571	0.047	<0.001
Type 2 diabetes	-0.175	0.068	0.010	-0.208	0.077	0.007
Ischaemic HF	-0.217	0.072	0.002	-0.235	0.081	0.004
KCCQ: 58-77	0.436	0.089	<0.001	0.460	0.100	<0.001
KCCQ: 77-92	0.790	0.097	<0.001	0.809	0.110	<0.001
KCCQ: >92	0.902	0.104	<0.001	0.880	0.115	<0.001
HF > 2 years	-0.303	0.076	<0.001	-0.289	0.086	<0.001
Gompertz						
Shape	0.001	2.146E-04	<0.001	9.061E-04	2.370E-04	<0.001
Scale	1.393E-06	5.505E-07	0.011	9.798E-07	4.308E-07	0.023
Dapagliflozin	-0.164	0.08	0.053	-0.180	0.093	0.054
Female	-0.473	0.11	<0.001	-0.465	0.124	<0.001
LVEF (centred)	-	-	-	-0.021	0.007	0.002
NT-proBNP (log)	0.677	0.04	<0.001	0.695	0.050	<0.001
Type 2 diabetes	0.218	0.08	0.010	0.256	0.093	0.006
Ischaemic HF	0.270	0.09	0.002	0.285	0.098	0.004
KCCQ: 58-77	-0.539	0.11	<0.001	-0.557	0.121	<0.001
KCCQ: 77-92	-0.973	0.12	<0.001	-0.977	0.129	<0.001
KCCQ: >92	-1.101	0.12	<0.001	-1.058	0.136	<0.001
HF > 2 years	0.377	0.09	<0.001	0.354	0.103	<0.001
Log-logistic						
Shape	1.345	0.051	<0.001	1.307	0.055	<0.001
Scale	143414.256	54459.256	0.008	207588.013	89968.930	0.021
Dapagliflozin	0.153	0.071	0.030	0.174	0.079	0.027
Female	0.393	0.092	<0.001	0.390	0.104	<0.001
LVEF (centred)	-	-	-	0.018	0.006	0.002
NT-proBNP (log)	-0.580	0.043	<0.001	-0.599	0.049	<0.001
Type 2 diabetes	-0.170	0.071	0.016	-0.201	0.079	0.011
Ischaemic HF	-0.223	0.074	0.002	-0.238	0.083	0.004
KCCQ: 58-77	0.474	0.093	<0.001	0.494	0.105	<0.001
KCCQ: 77-92	0.830	0.099	<0.001	0.842	0.112	<0.001
KCCQ: >92	0.934	0.105	<0.001	0.912	0.116	<0.001

Covariate	All-cause mortality			CV mortality		
	Coefficient	SE	p-value	Coefficient	SE	p-value
HF > 2 years	-0.296	0.078	<0.001	-0.281	0.087	0.001
Log-normal						
Mean log	12.540	0.418	<0.001	13.022	0.480	<0.001
SD log	1.577	0.054	<0.001	1.662	0.063	<0.001
Dapagliflozin	0.204	0.078	0.009	0.231	0.088	0.008
Female	0.393	0.099	<0.001	0.399	0.112	<0.001
LVEF (centred)	-	-	-	0.020	0.006	0.002
NT-proBNP (log)	-0.630	0.048	<0.001	-0.654	0.054	<0.001
Type 2 diabetes	-0.187	0.078	0.017	-0.223	0.088	0.011
Ischaemic HF	-0.242	0.081	0.003	-0.263	0.091	0.004
KCCQ: 58-77	0.558	0.107	<0.001	0.586	0.120	<0.001
KCCQ: 77-92	0.892	0.109	<0.001	0.912	0.123	<0.001
KCCQ: >92	0.989	0.113	<0.001	0.978	0.126	<0.001
HF > 2 years	-0.324	0.084	<0.001	-0.310	0.095	0.001

HF: heart failure; KCCQ: Kansas City Cardiomyopathy Questionnaire; LVEF: left ventricular ejection fraction

KCCQ-TSS transition probabilities

Table S2. KCCQ-TSS transition probabilities

KCCQ-TSS quartile transitions [From, To]	Dapagliflozin + standard therapy				Standard therapy			
	Month 0 - 4		Month 5+		Month 0 - 4		Month 5+	
	Mean	SE	Mean	SE	Mean	SE	Mean	SE
KCCQ[1,1]	0.86240	0.00015	0.94360	0.00007	0.88180	0.00015	0.94140	0.00007
KCCQ[1,2]	0.08042	0.00012	0.03682	0.00006	0.07071	0.00012	0.03876	0.00006
KCCQ[1,3]	0.03679	0.00008	0.01409	0.00004	0.03164	0.00008	0.01212	0.00003
KCCQ[1,4]	0.02043	0.00006	0.00551	0.00002	0.01582	0.00006	0.00776	0.00003
KCCQ[2,1]	0.03126	0.00007	0.02629	0.00004	0.03870	0.00008	0.03220	0.00005
KCCQ[2,2]	0.85790	0.00015	0.92200	0.00007	0.85300	0.00015	0.91550	0.00007
KCCQ[2,3]	0.07122	0.00011	0.03781	0.00005	0.06635	0.00010	0.03708	0.00005
KCCQ[2,4]	0.03959	0.00008	0.01392	0.00003	0.04194	0.00008	0.01519	0.00003
KCCQ[3,1]	0.00903	0.00004	0.00820	0.00002	0.01665	0.00006	0.00747	0.00002
KCCQ[3,2]	0.03829	0.00008	0.02750	0.00004	0.04910	0.00009	0.03459	0.00004
KCCQ[3,3]	0.86130	0.00015	0.92090	0.00006	0.85680	0.00015	0.91960	0.00006
KCCQ[3,4]	0.09133	0.00012	0.04339	0.00005	0.07747	0.00012	0.03833	0.00005
KCCQ[4,1]	0.00713	0.00004	0.00259	0.00001	0.00513	0.00003	0.00426	0.00002
KCCQ[4,2]	0.01519	0.00005	0.01024	0.00002	0.01676	0.00006	0.01359	0.00003
KCCQ[4,3]	0.04547	0.00009	0.03300	0.00004	0.05305	0.00010	0.03852	0.00004
KCCQ[4,4]	0.93220	0.00011	0.95420	0.00004	0.92510	0.00012	0.94360	0.00005

KCCQ TSS: Kansas City Cardiomyopathy Questionnaire total symptom score; SE: standard error

Regression models developed for HHF and urgent HF

Generalised estimating equations are used to predict the incidence of HHF and urgent HF visit events in order to capture both first and recurrent events. The incidence of urgent HF visit events was not adjusted or stratified by patient subgroup due to the limited number of observed events (n = 39).

Table S3. Regression models developed for HHF and urgent HF

Covariate	Coefficient	SE	p-value
HHF			
Intercept	-9.321	0.366	<0.001
Dapagliflozin	-0.309	0.074	<0.001
KCCQ: 58-77	-0.488	0.096	<0.001
KCCQ: 77-92	-0.682	0.098	<0.001
KCCQ: >92	-1.101	0.113	<0.001
LVEF (centred)	-0.029	0.005	<0.001
NT-proBNP (log)	0.590	0.043	<0.001
Prior HHF	0.435	0.075	<0.001
Type 2 diabetes	0.387	0.076	<0.001
BMI (kg/m ²) (centred)	0.020	0.006	0.001
Creatinine (µmol/L) (centred)	0.005	0.001	<0.001
HF > 2 years	0.438	0.084	<0.001
Time since baseline (days)	0.0004	0.0002	0.041
Urgent heart failure visit			
Intercept	-9.321	-	-
Dapagliflozin	-0.309	-	-

BMI: body mass index; HF: heart failure; HHF: hospitalisation for heart failure; KCCQ: Kansas City Cardiomyopathy Questionnaire; LVEF: left ventricular ejection fraction

Hypoglycaemic events	0.001	0.001	0.001	0.001
Fractures	0.014	0.005	0.014	0.005
Diabetic ketoacidosis	0.001	0.001	0.000	0.000
Amputation	0.003	0.002	0.003	0.002

SE: standard error; SoC: standard of care

Mixed effects model used to derive patient utility (fixed effects only)

Each of the modelled health states (including transient health states describing the incidence of events) is assigned a utility weighting and the proportion of patients residing within each health state informs the accrual of QALYs over time. Utility estimates were derived from a pooled analysis of individual patient data from the DAPA-HF clinical trial. Linear mixed effects regression models were fitted to predict patient reported utility values derived from EQ-5D-5L questionnaires, which were collected throughout the trial. Mixed effects models were used to account for repeated measures and within-patient correlation adjusted for time from baseline, sex, KCCQ TSS quartile, T2DM at baseline, body mass index and age. EQ-5D-5L responses were mapped to EQ-5D-3L applying the mapping function developed by van Hout et al., in line with NICE technology assessment guidelines and assuming that reported domain scores within individual questionnaires were uncorrelated. Responses were then converted to utility index scores using published utility values for EQ-5D health states, derived using the time trade-off method described by Dolan et al. Utility decrements associated with the incidence of discrete events were derived based on EQ-5D responses reported within one month following the incidence of the event (aligned to model cycle length), except for HHF events which were associated with significant ($\alpha = 0.05$) utility decrement up to one year following the event. The estimated utility decrement associated with the incidence of hypoglycaemic events was not included in the model base case analysis as the number of events was small ($n=8$) and the coefficient estimate was considered to lack face validity.

Table S5. Summary of mixed effects model used to derive patient utility (fixed effects only)

Variable	Coefficient	SE	P value
Intercept	0.6193	0.0120	<0.0001
Time (days)*	0.0000	0.0000	<0.0001
KCCQ TSS Quartile 2	0.1046	0.0032	<0.0001
KCCQ TSS Quartile 3	0.1728	0.0033	<0.0001
KCCQ TSS Quartile 4	0.2328	0.0035	<0.0001
T2DM	-0.0175	0.0034	<0.0001
Age	-0.0003	0.0002	0.0347
Sex: Male	0.0322	0.0041	<0.0001
Europe	-0.0300	0.0045	<0.0001
North America	-0.0267	0.0058	<0.0001
South America	-0.0231	0.0055	<0.0001
Hospitalisation for HF/urgent HF visit event	-0.0357	0.0101	0.0011
Hospitalisation for HF: 1 - <2 months	-0.0303	0.0122	0.0131
Hospitalisation for HF: 2 - <4 months	-0.0288	0.0093	0.0020
Hospitalisation for HF: 4 - <12 months	-0.0247	0.0072	0.0006
Stroke event	-0.2064	0.0333	<0.0001
MI event	-0.1082	0.0353	0.0021
Volume depletion event	-0.0513	0.0123	<0.0001
Renal event	-0.0762	0.0141	<0.0001
Hypoglycaemic event	-0.2631	0.0890	0.0031
Fracture event	-0.1488	0.0325	<0.0001

HF: heart failure; KCCQ TSS: Kansas City Cardiomyopathy Questionnaire total symptom score; T2DM: type 2 diabetes mellitus; SE: standard error

* estimates have been rounded; mean (SE)=0.000019 (0.000004)

Table S6. Costs inputs for UK, Germany and Spain

Cost Inputs	UK		Germany		Spain	
Treatment	Annual drug acquisition costs	Source	Annual drug acquisition costs	Source	Annual drug acquisition costs	Source
Dapagliflozin	£477	MIMS ¹	€ 256	AstraZeneca	€ 675	Vademecum ₂
Dapagliflozin monitoring costs	£268	NHS Reference Costs	€169	WHO-CHOICE ³	€167	WHO-CHOICE ⁴
Standard treatment	£176*	MIMS ¹	€ 219	DIMDI ⁵	€ 132	Vademecum ₂
Health state	Mean	Source	Mean	Source	Mean	Source
Background resource use associated with HF management	£878 [#]	McMurray et al. ⁶ , NHS Reference Costs ⁷ , PSSRU ⁸	€ 702	Biermann et al. ⁹	€ 861	Delgado et al. ¹⁰
T2DM	£1,092	Alva et al. ¹¹	€ 1,244 [§]	Alva et al. ¹¹	€ 1,244 [§]	Alva et al. ¹¹
Event	Mean	Source	Mean	Source	Mean	Source
HHF	£2,832 [#]	NHS Reference Costs ^{*7}	€ 3,790	Kahm et al. ¹²	€ 3,898	Perez et al. ₁₃
Urgent HF visit	£402 [#]	NHS Reference Costs ^{^7}	€ 794	van der Pol et al. ¹⁴	€ 918	Sicras Mainar et al. ¹⁵
CV death	£3,126	Alva et al. ¹¹ ;	€ 11,531	Kahm et al. ¹²	€ 4,246	Barrios et al. ₁₆
Volume depletion	£39	PSSRU ⁸	€ 30	WHO-CHOICE ⁴	€ 24	WHO-CHOICE ⁴
Acute kidney injury	£1,865	NHS Reference Costs ⁷	€ 2,126	NHS Reference Costs ^{§7}	€ 2,126	NHS Reference Costs ^{§7}
Major hypoglycaemia	£361	Hammer et al. ¹⁷	€ 395	Hammer et al. ¹⁷	€ 800	Pérez et al. ₁₃
Fracture	£2,322	NHS Reference Costs ⁷	€ 7,198	Bleibler et al. ¹⁸	€ 2,646	NHS Reference Costs ^{§7}
Diabetic ketoacidosis	£2,212	Dhatariya et al. ¹⁹	€ 2,448	Dhatariya et al. ¹⁹ §	€ 2,448	Dhatariya et al. ¹⁹ §
Amputation	£13,498	Alva et al. ¹¹	€ 14,224	Kahm et al. ¹²	€ 11,675	Pérez et al. ₁₃
Genital infection	£39	PSSRU ⁸	€ 30	WHO-CHOICE ⁴	€ 24	WHO-CHOICE ⁴
Urinary tract infection	£39	PSSRU ⁸	€ 30	WHO-CHOICE ⁴	€ 24	WHO-CHOICE ⁴

◆ Applied within first year only

^ includes 71% of patients in receipt of MRA (annual cost £28 for spironolactone sourced from MIMS¹)

* 56% of patients in receipt of ACEi, 28% of patients in receipt of ARB, 11% of patients in receipt of sacubitril/valsartan, 71% of patients in receipt of MRA (costs sourced from MIMS¹)

weighted mean by finished consultant episode (EB03A-E, heart failure or shock, non-elective inpatient)

^ weighted mean by finished consultant episode (EB03A-E, heart failure or shock, day case)

+ weighted mean cost of fatal myocardial infarction, fatal ischaemic heart disease or fatal stroke

§ Exchange rate used: £1=€1.1397

ACEi: angiotensin converting enzyme inhibitor; ARB: angiotensin receptor blocker; CV: cardiovascular; HF: heart failure; HHF: hospitalisation for heart failure; MRA: mineralocorticoid receptor antagonists; SE: standard error; T2DM: type 2 diabetes mellitus

Table S7. Results of sub-group analysis (UK)

Scenario		UK		
		Dapagliflozin + GRT	GRT	Incremental
Age ≤ 65	LYs	6.67	6.06	0.61
	QALYs	4.95	4.45	0.50
	Costs	£17,425	£14,478	£2,947
	ICER			£5,883
Aged > 65 years	LYs	5.73	5.20	0.53
	QALYs	4.26	3.83	0.44
	Costs	£15,399	£12,830	£2,569
	ICER			£5,872
LVEF ≤ median	LYs	5.82	5.25	0.57
	QALYs	4.33	3.86	0.46
	Costs	£16,225	£13,642	£2,583
	ICER			£5,570
LVEF > median	LYs	6.64	6.04	0.60
	QALYs	4.93	4.44	0.49
	Costs	£16,741	£13,760	£2,981
	ICER			£6,071
NTproBNP ≤ median	LYs	8.94	8.32	0.62
	QALYs	6.65	6.13	0.52
	Costs	£20,826	£17,305	£3,520
	ICER			£6,761
NTproBNP > median	LYs	5.02	4.50	0.52
	QALYs	3.72	3.30	0.43
	Costs	£14,563	£12,238	£2,325
	ICER			£5,469
Prior HHF	LYs	6.08	5.50	0.58
	QALYs	4.52	4.04	0.47
	Costs	£16,889	£14,221	£2,668
	ICER			£5,625
No Prior HHF	LYs	6.31	5.72	0.59
	QALYs	4.69	4.21	0.48
	Costs	£16,150	£13,284	£2,866
	ICER			£5,968
T2DM	LYs	5.51	4.95	0.55
	QALYs	4.04	3.60	0.45
	Costs	£19,017	£16,184	£2,833
	ICER			£6,350
No T2DM	LYs	6.77	6.17	0.60
	QALYs	5.08	4.58	0.50
	Costs	£14,081	£11,369	£2,712
	ICER			£5,419
BMI ≤ median	LYs	5.91	5.35	0.57
	QALYs	4.42	3.95	0.47
	Costs	£15,241	£12,583	£2,658
	ICER			£5,701

Scenario	UK			
	Dapagliflozin + GRT	GRT	Incremental	
BMI > median	LYs	6.60	6.00	0.60
	QALYs	4.88	4.39	0.49
	Costs	£17,880	£14,951	£2,929
	ICER			£5,962
Creatinine ≤ median	LYs	7.03	6.42	0.61
	QALYs	5.23	4.73	0.51
	Costs	£17,325	£14,285	£3,040
	ICER			£6,008
Creatinine > median	LYs	5.50	4.95	0.55
	QALYs	4.08	3.64	0.45
	Costs	£15,679	£13,155	£2,524
	ICER			£5,643
KCCQ-TSS ≤ median	LYs	5.55	4.99	0.56
	QALYs	4.04	3.59	0.45
	Costs	£15,525	£12,981	£2,543
	ICER			£5,668
KCCQ-TSS > median	LYs	6.88	6.28	0.60
	QALYs	5.21	4.70	0.50
	Costs	£17,405	£14,401	£3,004
	ICER			£5,981
HF duration ≤2 years	LYs	7.17	6.55	0.62
	QALYs	5.33	4.82	0.51
	Costs	£17,856	£14,750	£3,106
	ICER			£6,114
HF duration >2 years	LYs	5.66	5.10	0.56
	QALYs	4.21	3.75	0.46
	Costs	£15,654	£13,082	£2,572
	ICER			£5,648
Ischaemic HF	LYs	5.66	5.10	0.56
	QALYs	4.20	3.75	0.45
	Costs	£15,528	£12,877	£2,651
	ICER			£5,839
Non-ischaemic HF	LYs	6.96	6.35	0.61
	QALYs	5.18	4.68	0.50
	Costs	£17,637	£14,700	£2,937
	ICER			£5,819

BMI: body mass index; GRT: guideline-recommended therapy; HF: heart failure; HHF: hospitalisation for heart failure; ICER: incremental cost effectiveness ratio; KCCQ-TSS: Kansas City Cardiomyopathy Questionnaire; LVEF: left ventricular ejection fraction; LY: life year; NTproBNP: N-terminal pro-B-type natriuretic peptide; QALY: quality adjusted life year; T2DM: type 2 diabetes mellitus

Table S8. Results of sub-group analysis (Spain)

Scenario		Spain		
		Dapagliflozin + GRT	GRT	Incremental
Age ≤ 65	LYs	6.84	6.20	0.64
	QALYs	5.08	4.56	0.52
	Costs	€ 25,841	€ 20,885	€ 4,955
	ICER			€ 9,472
Aged > 65 years	LYs	5.92	5.35	0.56
	QALYs	4.40	3.94	0.46
	Costs	€ 23,014	€ 18,617	€ 4,396
	ICER			€ 9,503
LVEF ≤ median	LYs	5.96	5.37	0.59
	QALYs	4.43	3.95	0.48
	Costs	€ 24,019	€ 19,630	€ 4,389
	ICER			€ 9,071
LVEF > median	LYs	6.81	6.19	0.63
	QALYs	5.06	4.55	0.51
	Costs	€ 24,894	€ 19,889	€ 5,006
	ICER			€ 9,730
NTproBNP ≤ median	LYs	9.30	8.64	0.67
	QALYs	6.92	6.36	0.56
	Costs	€ 31,426	€ 25,462	€ 5,964
	ICER			€ 10,706
NTproBNP > median	LYs	5.12	4.58	0.54
	QALYs	3.79	3.35	0.44
	Costs	€ 21,425	€ 17,485	€ 3,941
	ICER			€ 8,957
Prior HHF	LYs	6.22	5.62	0.60
	QALYs	4.62	4.13	0.49
	Costs	€ 24,944	€ 20,425	€ 4,519
	ICER			€ 9,140
No Prior HHF	LYs	6.47	5.85	0.61
	QALYs	4.81	4.31	0.50
	Costs	€ 24,014	€ 19,195	€ 4,820
	ICER			€ 9,602
T2DM	LYs	5.62	5.05	0.57
	QALYs	4.13	3.66	0.46
	Costs	€ 26,970	€ 22,344	€ 4,626
	ICER			€ 9,991
No T2DM	LYs	6.96	6.32	0.63
	QALYs	5.22	4.69	0.52
	Costs	€ 21,952	€ 17,247	€ 4,705
	ICER			€ 8,964
BMI ≤ median	LYs	6.05	5.46	0.59
	QALYs	4.52	4.04	0.49
	Costs	€ 22,736	€ 18,234	€ 4,502
	ICER			€ 9,270
BMI > median	LYs	6.77	6.14	0.63

Scenario	Spain			
		Dapagliflozin + GRT	GRT	Incremental
	QALYs	5.01	4.49	0.51
	Costs	€ 26,371	€ 21,449	€ 4,923
	ICER			€ 9,568
Creatinine ≤ median	LYs	7.23	6.58	0.65
	QALYs	5.38	4.85	0.53
	Costs	€ 25,928	€ 20,797	€ 5,131
	ICER			€ 9,657
Creatinine > median	LYs	5.62	5.05	0.57
	QALYs	4.17	3.71	0.46
	Costs	€ 23,057	€ 18,797	€ 4,261
	ICER			€ 9,170
KCCQ-TSS ≤ median	LYs	5.67	5.09	0.58
	QALYs	4.13	3.66	0.47
	Costs	€ 22,881	€ 18,589	€ 4,292
	ICER			€ 9,199
KCCQ-TSS > median	LYs	7.07	6.44	0.63
	QALYs	5.35	4.82	0.53
	Costs	€ 25,951	€ 20,882	€ 5,069
	ICER			€ 9,621
HF duration ≤2 years	LYs	7.38	6.73	0.65
	QALYs	5.49	4.95	0.53
	Costs	€ 26,647	€ 21,415	€ 5,232
	ICER			€ 9,792
HF duration >2 years	LYs	5.78	5.20	0.58
	QALYs	4.30	3.82	0.47
	Costs	€ 23,116	€ 18,769	€ 4,347
	ICER			€ 9,181
Ischaemic HF	LYs	5.78	5.20	0.58
	QALYs	4.30	3.82	0.47
	Costs	€ 22,878	€ 18,428	€ 4,450
	ICER			€ 9,427
Non-ischaemic HF	LYs	7.16	6.51	0.64
	QALYs	5.33	4.80	0.53
	Costs	€ 26,372	€ 21,386	€ 4,986
	ICER			€ 9,408

BMI: body mass index; GRT: guideline-recommended therapy; HF: heart failure; HHF: hospitalisation for heart failure; ICER: incremental cost effectiveness ratio; KCCQ-TSS: Kansas City Cardiomyopathy Questionnaire; LVEF: left ventricular ejection fraction; LY: life year; NTproBNP: N-terminal pro-B-type natriuretic peptide; QALY: quality adjusted life year; T2DM: type 2 diabetes mellitus

Table S9. Results of sub-group analysis (Germany)

Scenario		Germany		
		Dapagliflozin + GRT	GRT	Incremental
Age ≤ 65	LYs	6.84	6.20	0.64
	QALYs	5.08	4.56	0.52
	Costs	€ 26,644	€ 23,791	€ 2,853
	ICER			€ 5,454
Aged > 65 years	LYs	5.91	5.35	0.56
	QALYs	4.40	3.94	0.46
	Costs	€ 24,088	€ 21,630	€ 2,458
	ICER			€ 5,324
LVEF ≤ median	LYs	5.94	5.35	0.59
	QALYs	4.42	3.93	0.48
	Costs	€ 25,744	€ 23,295	€ 2,449
	ICER			€ 5,077
LVEF > median	LYs	6.81	6.18	0.63
	QALYs	5.06	4.55	0.51
	Costs	€ 25,076	€ 22,163	€ 2,914
	ICER			€ 5,668
NTproBNP ≤ median	LYs	9.26	8.60	0.66
	QALYs	6.89	6.34	0.55
	Costs	€ 30,110	€ 26,715	€ 3,395
	ICER			€ 6,125
NTproBNP > median	LYs	5.11	4.57	0.54
	QALYs	3.79	3.35	0.44
	Costs	€ 23,420	€ 21,204	€ 2,216
	ICER			€ 5,036
Prior HHF	LYs	6.22	5.62	0.60
	QALYs	4.62	4.13	0.49
	Costs	€ 26,056	€ 23,513	€ 2,542
	ICER			€ 5,142
No Prior HHF	LYs	6.46	5.85	0.61
	QALYs	4.81	4.31	0.50
	Costs	€ 24,915	€ 22,130	€ 2,785
	ICER			€ 5,549
T2DM	LYs	5.62	5.04	0.57
	QALYs	4.13	3.66	0.46
	Costs	€ 28,551	€ 25,770	€ 2,782
	ICER			€ 6,008
No T2DM	LYs	6.95	6.32	0.63
	QALYs	5.21	4.69	0.52
	Costs	€ 22,474	€ 19,907	€ 2,567
	ICER			€ 4,893
BMI ≤ median	LYs	6.04	5.45	0.59
	QALYs	4.52	4.03	0.49
	Costs	€ 23,988	€ 21,431	€ 2,557
	ICER			€ 5,264

Scenario	Germany			
	Dapagliflozin + GRT	GRT	Incremental	
BMI > median	LYs	6.77	6.14	0.63
	QALYs	5.01	4.49	0.51
	Costs	€ 27,038	€ 24,207	€ 2,831
	ICER			€ 5,505
Creatinine ≤ median	LYs	7.23	6.58	0.65
	QALYs	5.38	4.85	0.53
	Costs	€ 26,322	€ 23,378	€ 2,944
	ICER			€ 5,543
Creatinine > median	LYs	5.61	5.04	0.57
	QALYs	4.17	3.70	0.46
	Costs	€ 24,576	€ 22,159	€ 2,417
	ICER			€ 5,202
KCCQ-TSS ≤ median	LYs	5.67	5.09	0.58
	QALYs	4.13	3.66	0.47
	Costs	€ 24,370	€ 21,927	€ 2,444
	ICER			€ 5,239
KCCQ-TSS > median	LYs	7.06	6.43	0.63
	QALYs	5.34	4.81	0.53
	Costs	€ 26,407	€ 23,508	€ 2,900
	ICER			€ 5,506
HF duration ≤2 years	LYs	7.37	6.72	0.65
	QALYs	5.48	4.95	0.53
	Costs	€ 26,962	€ 23,949	€ 3,013
	ICER			€ 5,640
HF duration >2 years	LYs	5.78	5.20	0.58
	QALYs	4.29	3.82	0.47
	Costs	€ 24,502	€ 22,035	€ 2,467
	ICER			€ 5,210
Ischaemic HF	LYs	5.78	5.20	0.58
	QALYs	4.29	3.82	0.47
	Costs	€ 24,258	€ 21,689	€ 2,568
	ICER			€ 5,442
Non-ischaemic HF	LYs	7.15	6.51	0.64
	QALYs	5.32	4.79	0.53
	Costs	€ 26,847	€ 24,034	€ 2,813
	ICER			€ 5,310

BMI: body mass index; GRT: guideline-recommended therapy; HF: heart failure; HHF: hospitalisation for heart failure; ICER: incremental cost effectiveness ratio; KCCQ-TSS: Kansas City Cardiomyopathy Questionnaire; LVEF: left ventricular ejection fraction; LY: life year; NTproBNP: N-terminal pro-B-type natriuretic peptide; QALY: quality adjusted life year; T2DM: type 2 diabetes mellitus

Table S10. Results of deterministic scenario analysis (UK)

Scenario		UK		
		Dapagliflozin + GRT	GRT	Incremental
Model horizon (10 years)	LYs	5.35	4.97	0.38
	QALYs	3.98	3.66	0.32
	Costs	£14,197	£12,034	£2,163
	ICER			£6,774
Model horizon (lifetime)	LYs	6.20	5.62	0.58
	QALYs	4.61	4.13	0.48
	Costs	£16,408	£13,628	£2,780
	ICER			£5,822
Cost discounting (0.00%)	LYs	6.20	5.62	0.58
	QALYs	4.61	4.13	0.48
	Costs	£19,466	£15,992	£3,473
	ICER			£7,275
Cost discounting (6.00%)	LYs	6.20	5.62	0.58
	QALYs	4.61	4.13	0.48
	Costs	£14,782	£12,354	£2,428
	ICER			£5,086
Benefit discounting (0.00%)	LYs	7.36	6.57	0.79
	QALYs	5.48	4.84	0.64
	Costs	£16,408	£13,628	£2,780
	ICER			£4,348
Benefit discounting (6.00%)	LYs	5.59	5.11	0.48
	QALYs	4.15	3.75	0.40
	Costs	£16,408	£13,628	£2,780
	ICER			£6,991
Adverse events (excluded)	LYs	6.20	5.62	0.58
	QALYs	4.61	4.14	0.48
	Costs	£15,424	£12,700	£2,724
	ICER			£5,702
Adverse events (included)	LYs	6.20	5.62	0.58
	QALYs	4.61	4.13	0.48
	Costs	£16,408	£13,628	£2,780
	ICER			£5,822
Societal costs (excluded)	LYs	6.20	5.62	0.58
	QALYs	4.61	4.13	0.48
	Costs	£16,408	£13,628	£2,780
	ICER			£5,822
Societal costs (included)	LYs	6.20	5.62	0.58

	QALYs	4.61	4.13	0.48
	Costs	£16,408	£13,628	£2,780
	ICER			£5,822
Health state costs (80% of mean)	LYs	6.20	5.62	0.58
	QALYs	4.61	4.13	0.48
	Costs	£14,754	£12,132	£2,622
	ICER			£5,492
Health state costs (120% of mean)	LYs	6.20	5.62	0.58
	QALYs	4.61	4.13	0.48
	Costs	£18,062	£15,124	£2,937
	ICER			£6,152
Adverse event costs (80% of mean)	LYs	6.20	5.62	0.58
	QALYs	4.61	4.13	0.48
	Costs	£16,211	£13,442	£2,769
	ICER			£5,799
Adverse event costs (120% of mean)	LYs	6.20	5.62	0.58
	QALYs	4.61	4.13	0.48
	Costs	£16,604	£13,814	£2,791
	ICER			£5,845
Societal costs (80% of mean)	LYs	6.20	5.62	0.58
	QALYs	4.61	4.13	0.48
	Costs	£16,408	£13,628	£2,780
	ICER			£5,822
Societal costs (120% of mean)	LYs	6.20	5.62	0.58
	QALYs	4.61	4.13	0.48
	Costs	£16,408	£13,628	£2,780
	ICER			£5,822
Intervention costs (80% of mean)	LYs	6.20	5.62	0.58
	QALYs	4.61	4.13	0.48
	Costs	£15,965	£13,628	£2,337
	ICER			£4,895
Intervention costs (120% of mean)	LYs	6.20	5.62	0.58
	QALYs	4.61	4.13	0.48
	Costs	£16,850	£13,628	£3,222
	ICER			£6,748
Comparator costs (80% of mean)	LYs	6.20	5.62	0.58
	QALYs	4.61	4.13	0.48
	Costs	£16,189	£13,430	£2,759
	ICER			£5,779
Comparator costs (120% of mean)	LYs	6.20	5.62	0.58
	QALYs	4.61	4.13	0.48
	Costs	£16,626	£13,826	£2,800
	ICER			£5,865

Health state utility (80% of mean)	LYs	6.20	5.62	0.58
	QALYs	3.69	3.31	0.38
	Costs	£16,408	£13,628	£2,780
	ICER			£7,257
Health state utility (120% of mean)	LYs	6.20	5.62	0.58
	QALYs	5.53	4.96	0.57
	Costs	£16,408	£13,628	£2,780
	ICER			£4,863
Event disutility (80% of mean)	LYs	6.20	5.62	0.58
	QALYs	4.61	4.14	0.48
	Costs	£16,408	£13,628	£2,780
	ICER			£5,829
Event disutility (120% of mean)	LYs	6.20	5.62	0.58
	QALYs	4.61	4.13	0.48
	Costs	£16,408	£13,628	£2,780
	ICER			£5,815
Adverse event disutility (80% of mean)	LYs	6.20	5.62	0.58
	QALYs	4.61	4.13	0.48
	Costs	£16,408	£13,628	£2,780
	ICER			£5,821
Adverse event disutility (120% of mean)	LYs	6.20	5.62	0.58
	QALYs	4.61	4.13	0.48
	Costs	£16,408	£13,628	£2,780
	ICER			£5,823
Discontinuation (0.00%)	LYs	6.45	5.62	0.83
	QALYs	4.81	4.13	0.68
	Costs	£17,516	£13,628	£3,888
	ICER			£5,727
Discontinuation (10.00%)	LYs	6.13	5.62	0.51
	QALYs	4.55	4.13	0.42
	Costs	£16,082	£13,628	£2,454
	ICER			£5,862
Mortality distribution: Weibull	LYs	6.20	5.62	0.58
	QALYs	4.61	4.13	0.48
	Costs	£16,408	£13,628	£2,780
	ICER			£5,822
Mortality distribution: Gompertz	LYs	4.23	3.94	0.30
	QALYs	3.15	2.90	0.25
	Costs	£12,108	£10,275	£1,833
	ICER			£7,255
Mortality distribution: Log-logistic	LYs	7.45	6.84	0.61
	QALYs	5.52	5.01	0.50
	Costs	£19,126	£16,163	£2,963

	ICER			£5,870
Mortality distribution: Lognormal	LYs	8.75	8.05	0.70
	QALYs	6.46	5.89	0.58
	Costs	£21,827	£18,498	£3,329
	ICER			£5,751
Unadjusted survival equations	LYs	6.63	6.09	0.54
	QALYs	4.89	4.45	0.45
	Costs	£17,534	£14,724	£2,810
	ICER			£6,263
Exclude life tables from analysis	LYs	6.23	5.64	0.59
	QALYs	4.63	4.15	0.48
	Costs	£16,482	£13,679	£2,803
	ICER			£5,789

GRT: guideline-recommended therapy; ICER: incremental cost effectiveness ratio; LY: life year; QALY: quality adjusted life year

Table S11. Results of deterministic scenario analysis (Spain)

Scenario		Spain		
		Dapagliflozin + GRT	GRT	Incremental
Model horizon (10 years)	LYs	5.43	5.05	0.38
	QALYs	4.04	3.71	0.33
	Costs	€ 20,920	€ 17,215	€ 3,705
	ICER			€ 11,330
Model horizon (lifetime)	LYs	6.35	5.74	0.61
	QALYs	4.72	4.22	0.50
	Costs	€ 24,330	€ 19,642	€ 4,688
	ICER			€ 9,406
Cost discounting (0.00%)	LYs	6.35	5.74	0.61
	QALYs	4.72	4.22	0.50
	Costs	€ 28,208	€ 22,587	€ 5,621
	ICER			€ 11,277
Cost discounting (6.00%)	LYs	6.35	5.74	0.61
	QALYs	4.72	4.22	0.50
	Costs	€ 21,448	€ 17,424	€ 4,024
	ICER			€ 8,073
Benefit discounting (0.00%)	LYs	7.38	6.58	0.80
	QALYs	5.49	4.85	0.64
	Costs	€ 24,330	€ 19,642	€ 4,688
	ICER			€ 7,290
Benefit discounting (6.00%)	LYs	5.59	5.11	0.48
	QALYs	4.16	3.76	0.40
	Costs	€ 24,330	€ 19,642	€ 4,688
	ICER			€ 11,759
Adverse events (excluded)	LYs	6.35	5.74	0.61
	QALYs	4.73	4.23	0.50
	Costs	€23,259	€18,629	€4,630
	ICER			€9,282
Adverse events (included)	LYs	6.35	5.74	0.61
	QALYs	4.72	4.22	0.50
	Costs	€24,330	€19,642	€4,688
	ICER			€9,406
Societal costs (excluded)	LYs	6.35	5.74	0.61
	QALYs	4.72	4.22	0.50
	Costs	€24,330	€19,642	€4,688
	ICER			€9,406
Societal costs (included)	LYs	6.35	5.74	0.61
	QALYs	4.72	4.22	0.50
	Costs	€24,330	€19,642	€4,688

	ICER			€9,406
Health state costs (80% of mean)	LYs	6.35	5.74	0.61
	QALYs	4.72	4.22	0.50
	Costs	€22,577	€18,060	€4,518
	ICER			€9,063
Health state costs (120% of mean)	LYs	6.35	5.74	0.61
	QALYs	4.72	4.22	0.50
	Costs	€26,084	€21,224	€4,859
	ICER			€9,749
Adverse event costs (80% of mean)	LYs	6.35	5.74	0.61
	QALYs	4.72	4.22	0.50
	Costs	€24,116	€19,439	€4,677
	ICER			€9,383
Adverse event costs (120% of mean)	LYs	6.35	5.74	0.61
	QALYs	4.72	4.22	0.50
	Costs	€24,545	€19,845	€4,700
	ICER			€9,429
Societal costs (80% of mean)	LYs	6.35	5.74	0.61
	QALYs	4.72	4.22	0.50
	Costs	€24,330	€19,642	€4,688
	ICER			€9,406
Societal costs (120% of mean)	LYs	6.35	5.74	0.61
	QALYs	4.72	4.22	0.50
	Costs	€24,330	€19,642	€4,688
	ICER			€9,406
Intervention costs (80% of mean)	LYs	6.35	5.74	0.61
	QALYs	4.72	4.22	0.50
	Costs	€23,604	€19,642	€3,962
	ICER			€7,949
Intervention costs (120% of mean)	LYs	6.35	5.74	0.61
	QALYs	4.72	4.22	0.50
	Costs	€25,056	€19,642	€5,414
	ICER			€10,863
Comparator costs (80% of mean)	LYs	6.35	5.74	0.61
	QALYs	4.72	4.22	0.50
	Costs	€23,275	€18,688	€4,587
	ICER			€9,203
Comparator costs (120% of mean)	LYs	6.35	5.74	0.61
	QALYs	4.72	4.22	0.50
	Costs	€25,386	€20,596	€4,790
	ICER			€9,609
Health state utility (80% of mean)	LYs	6.35	5.74	0.61
	QALYs	3.78	3.38	0.40

	Costs	€24,330	€19,642	€4,688
	ICER			€11,725
Health state utility (120% of mean)	LYs	6.35	5.74	0.61
	QALYs	5.66	5.07	0.60
	Costs	€24,330	€19,642	€4,688
	ICER			€7,857
Event disutility (80% of mean)	LYs	6.35	5.74	0.61
	QALYs	4.73	4.23	0.50
	Costs	€24,330	€19,642	€4,688
	ICER			€9,417
Event disutility (120% of mean)	LYs	6.35	5.74	0.61
	QALYs	4.72	4.22	0.50
	Costs	€24,330	€19,642	€4,688
	ICER			€9,395
Adverse event disutility (80% of mean)	LYs	6.35	5.74	0.61
	QALYs	4.72	4.23	0.50
	Costs	€24,330	€19,642	€4,688
	ICER			€9,405
Adverse event disutility (120% of mean)	LYs	6.35	5.74	0.61
	QALYs	4.72	4.22	0.50
	Costs	€24,330	€19,642	€4,688
	ICER			€9,407
Discontinuation (0.00%)	LYs	6.62	5.74	0.88
	QALYs	4.94	4.22	0.71
	Costs	€26,189	€19,642	€6,547
	ICER			€9,159
Discontinuation (10.00%)	LYs	6.27	5.74	0.53
	QALYs	4.66	4.22	0.44
	Costs	€23,790	€19,642	€4,148
	ICER			€9,516
Mortality distribution: Weibull	LYs	6.35	5.74	0.61
	QALYs	4.72	4.22	0.50
	Costs	€24,330	€19,642	€4,688
	ICER			€9,406
Mortality distribution: Gompertz	LYs	4.28	3.98	0.30
	QALYs	3.19	2.93	0.26
	Costs	€17,756	€14,607	€3,149
	ICER			€12,225
Mortality distribution: Log-logistic	LYs	7.78	7.14	0.65
	QALYs	5.76	5.23	0.53
	Costs	€28,796	€23,749	€5,047
	ICER			€9,466
Mortality distribution:	LYs	9.24	8.49	0.75

Lognormal	QALYs	6.82	6.21	0.62
	Costs	€33,176	€27,503	€5,673
	ICER			€9,225
Unadjusted survival equations	LYs	6.81	6.24	0.57
	QALYs	5.03	4.56	0.47
	Costs	€25,988	€21,234	€4,754
	ICER			€10,127
Exclude life tables from analysis	LYs	6.38	5.76	0.62
	QALYs	4.74	4.24	0.50
	Costs	€24,416	€19,700	€4,716
	ICER			€9,358

GRT: guideline-recommended therapy; ICER: incremental cost effectiveness ratio; LY: life year; QALY: quality adjusted life year

Table S12. Results of deterministic scenario analysis (Germany)

Scenario		Germany		
		Dapagliflozin + GRT	GRT	Incremental
Model horizon (10 years)	LYs	5.43	5.05	0.38
	QALYs	4.04	3.71	0.33
	Costs	€ 21,413	€ 19,666	€ 1,747
	ICER			€ 5,339
Model horizon (lifetime)	LYs	6.35	5.74	0.61
	QALYs	4.72	4.22	0.50
	Costs	€ 25,328	€ 22,647	€ 2,681
	ICER			€ 5,379
Cost discounting (0.00%)	LYs	6.35	5.74	0.61
	QALYs	4.72	4.22	0.50
	Costs	€ 29,617	€ 26,181	€ 3,437
	ICER			€ 6,896
Cost discounting (6.00%)	LYs	6.35	5.74	0.61
	QALYs	4.72	4.22	0.50
	Costs	€ 22,164	€ 19,998	€ 2,166
	ICER			€ 4,347
Benefit discounting (0.00%)	LYs	7.37	6.58	0.79
	QALYs	5.48	4.84	0.64
	Costs	€ 25,328	€ 22,647	€ 2,681
	ICER			€ 4,170
Benefit discounting (6.00%)	LYs	5.59	5.11	0.48
	QALYs	4.15	3.75	0.40
	Costs	€ 25,328	€ 22,647	€ 2,681
	ICER			€ 6,723
Adverse events (excluded)	LYs	6.35	5.74	0.61
	QALYs	4.72	4.23	0.50
	Costs	€23,803	€21,224	€2,578
	ICER			€5,169
Adverse events (included)	LYs	6.35	5.74	0.61
	QALYs	4.72	4.22	0.50
	Costs	€25,328	€22,647	€2,681
	ICER			€5,379
Societal costs (excluded)	LYs	6.35	5.74	0.61
	QALYs	4.72	4.22	0.50
	Costs	€25,328	€22,647	€2,681
	ICER			€5,379
Societal costs (included)	LYs	6.35	5.74	0.61
	QALYs	4.72	4.22	0.50
	Costs	€25,328	€22,647	€2,681

	ICER			€5,379
Health state costs (80% of mean)	LYs	6.35	5.74	0.61
	QALYs	4.72	4.22	0.50
	Costs	€23,779	€21,249	€2,529
	ICER			€5,075
Health state costs (120% of mean)	LYs	6.35	5.74	0.61
	QALYs	4.72	4.22	0.50
	Costs	€26,877	€24,045	€2,832
	ICER			€5,683
Adverse event costs (80% of mean)	LYs	6.35	5.74	0.61
	QALYs	4.72	4.22	0.50
	Costs	€25,023	€22,363	€2,660
	ICER			€5,338
Adverse event costs (120% of mean)	LYs	6.35	5.74	0.61
	QALYs	4.72	4.22	0.50
	Costs	€25,633	€22,932	€2,701
	ICER			€5,420
Societal costs (80% of mean)	LYs	6.35	5.74	0.61
	QALYs	4.72	4.22	0.50
	Costs	€25,328	€22,647	€2,681
	ICER			€5,379
Societal costs (120% of mean)	LYs	6.35	5.74	0.61
	QALYs	4.72	4.22	0.50
	Costs	€25,328	€22,647	€2,681
	ICER			€5,379
Intervention costs (80% of mean)	LYs	6.35	5.74	0.61
	QALYs	4.72	4.22	0.50
	Costs	€24,942	€22,647	€2,295
	ICER			€4,604
Intervention costs (120% of mean)	LYs	6.35	5.74	0.61
	QALYs	4.72	4.22	0.50
	Costs	€25,714	€22,647	€3,067
	ICER			€6,153
Comparator costs (80% of mean)	LYs	6.35	5.74	0.61
	QALYs	4.72	4.22	0.50
	Costs	€24,524	€21,920	€2,603
	ICER			€5,224
Comparator costs (120% of mean)	LYs	6.35	5.74	0.61
	QALYs	4.72	4.22	0.50
	Costs	€26,132	€23,375	€2,758
	ICER			€5,534
Health state utility (80% of mean)	LYs	6.35	5.74	0.61
	QALYs	3.78	3.38	0.40

	Costs	€25,328	€22,647	€2,681
	ICER			€6,705
Health state utility (120% of mean)	LYs	6.35	5.74	0.61
	QALYs	5.66	5.06	0.60
	Costs	€25,328	€22,647	€2,681
	ICER			€4,493
Event disutility (80% of mean)	LYs	6.35	5.74	0.61
	QALYs	4.72	4.23	0.50
	Costs	€25,328	€22,647	€2,681
	ICER			€5,385
Event disutility (120% of mean)	LYs	6.35	5.74	0.61
	QALYs	4.72	4.22	0.50
	Costs	€25,328	€22,647	€2,681
	ICER			€5,373
Adverse event disutility (80% of mean)	LYs	6.35	5.74	0.61
	QALYs	4.72	4.22	0.50
	Costs	€25,328	€22,647	€2,681
	ICER			€5,378
Adverse event disutility (120% of mean)	LYs	6.35	5.74	0.61
	QALYs	4.72	4.22	0.50
	Costs	€25,328	€22,647	€2,681
	ICER			€5,380
Discontinuation (0.00%)	LYs	6.61	5.74	0.88
	QALYs	4.94	4.22	0.71
	Costs	€26,355	€22,647	€3,708
	ICER			€5,191
Discontinuation (10.00%)	LYs	6.27	5.74	0.53
	QALYs	4.66	4.22	0.44
	Costs	€25,028	€22,647	€2,380
	ICER			€5,460
Mortality distribution: Weibull	LYs	6.35	5.74	0.61
	QALYs	4.72	4.22	0.50
	Costs	€25,328	€22,647	€2,681
	ICER			€5,379
Mortality distribution: Gompertz	LYs	4.28	3.98	0.30
	QALYs	3.19	2.93	0.26
	Costs	€20,047	€18,395	€1,652
	ICER			€6,402
Mortality distribution: Log-logistic	LYs	7.77	7.12	0.65
	QALYs	5.75	5.21	0.53
	Costs	€28,716	€25,937	€2,779
	ICER			€5,209
Mortality distribution:	LYs	9.21	8.46	0.75

Lognormal	QALYs	6.80	6.19	0.62
	Costs	€31,710	€28,570	€3,141
	ICER			€5,092
Unadjusted survival equations	LYs	6.81	6.24	0.57
	QALYs	5.02	4.55	0.47
	Costs	€26,767	€24,083	€2,684
	ICER			€5,719
Exclude life tables from analysis	LYs	6.38	5.76	0.62
	QALYs	4.74	4.24	0.50
	Costs	€25,446	€22,735	€2,711
	ICER			€5,379

GRT: guideline-recommended therapy; ICER: incremental cost effectiveness ratio; LY: life year; QALY: quality adjusted life year

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