

Supplement 4: Annual Quality-adjusted Life Years (QALYs) gained

Below is a brief summary of the policies referred in this supplement:

Status Quo (SQ): including all existing tobacco control in Singapore as of 2017

Minimum Legal Age (MLA): raising the age at which smoking is legally allowed to 21 years old from 18 years old.

Smoke Free Generation (SFG): prohibiting those born after 2000 from ever smoking.

E-cigarette Laissez-Faire (ELF): legalizing e-cigarettes and allowing anyone aged 18 years or above to use e-cigarettes

E-cigarette Prescription (EP): only smokers are allowed to obtain e-cigarettes, under the prescriptions from medical doctors.

E-cigarette 25 (E25): only adults aged 25 years or above are allowed to buy and use e-cigarettes.

TAX2 (TAX2): raising tax on tobacco consumption once every 2 years for 10 times, by 10% each time.

TAX5 (TAX5): raising tax on tobacco consumption once every 5 years for 10 times, by 10% each time.

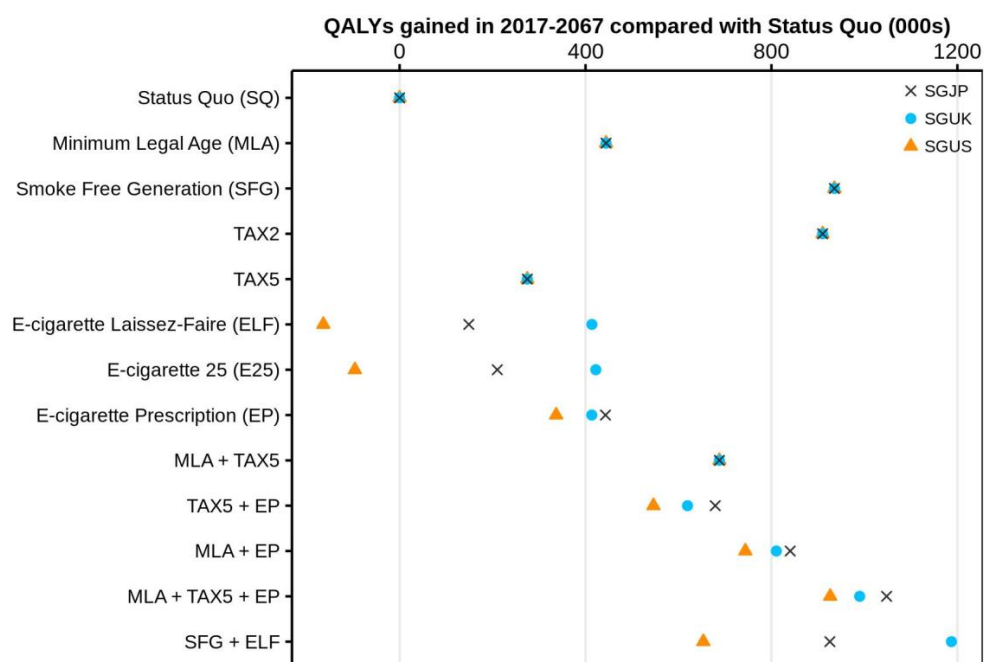


Figure S4-1: The total QALYs gained for each scenario (as described in the caption of Figure 2 and the main text) during the period 2017–2067 calculated with no future discounting

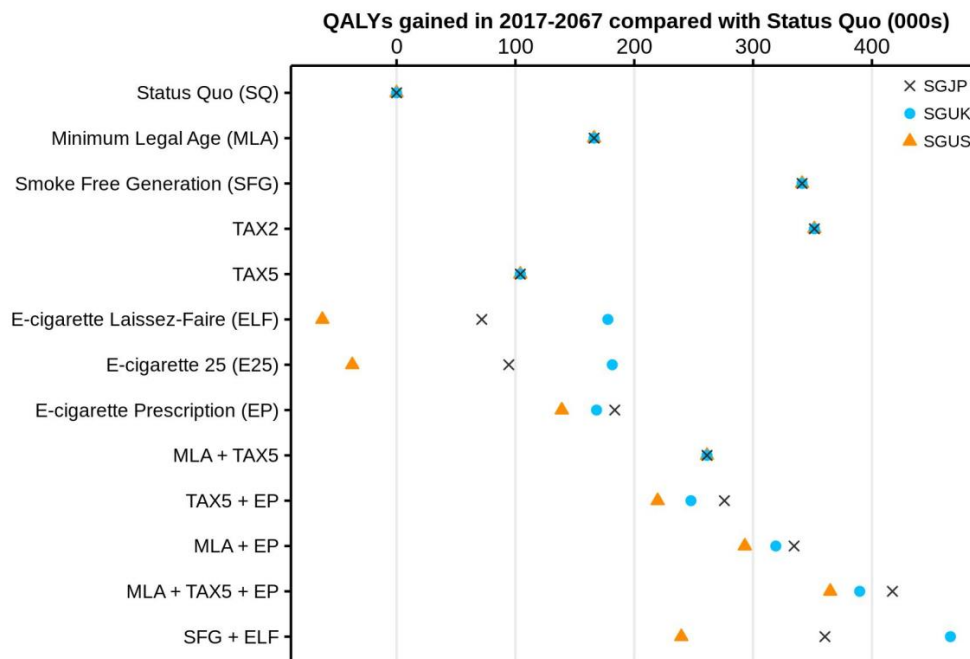


Figure S4-2: The total QALYs gained for each scenario (as described in the caption of Figure 2 and the main text) during the period 2017–2067 calculated with an annual discount rate of 3%

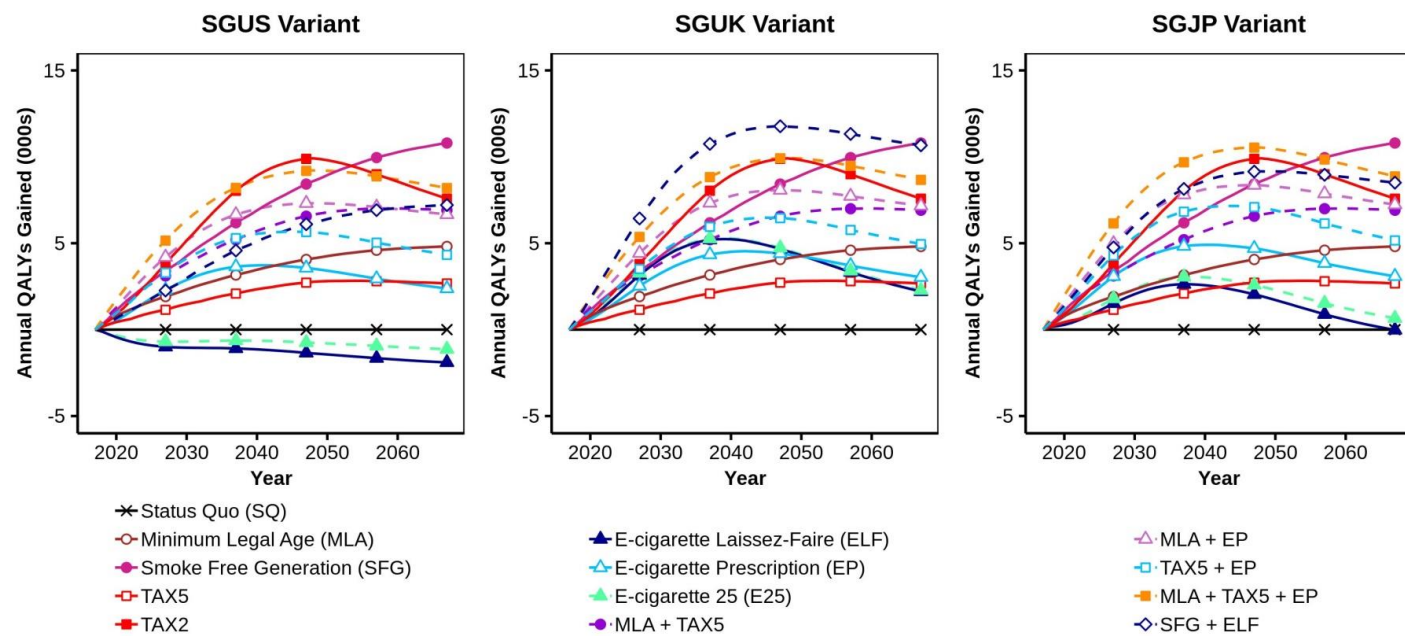


Figure S4-3: The total QALYs gained for each scenario (as described in the caption of Figure 2 and the main text) during the period 2017–2067 calculated with an annual discount rate of 3%

Below is the list of tables in this supplement:

Table S4 - 1: Annual Quality-adjusted Life Years (QALY) gained compared with SQ under the policies without e-cigarettes.....	5
Table S4 - 2: Annual Quality-adjusted Life Years (QALY) gained compared with SQ under the policies with e-cigarettes (SGUS variant).....	5
Table S4 - 3: Annual Quality-adjusted Life Years (QALY) gained compared with SQ under the policies with e-cigarettes (SGUK variant).....	6
Table S4 - 4: Annual Quality-adjusted Life Years (QALY) gained compared with SQ under the policies with e-cigarettes (SGJP variant).....	6

Note:

We ran the simulation 1000 times for each scenario. Each mean value presented in the tables below is calculated from the 1000 runs, and the corresponding 95% confidence interval (CI) is the CI for that mean value, i.e. representing uncertainty that could have been reduced with more simulations.

Besides, the QALY values in the tables are presented with no future discounting.

Table S4 - 1: Annual Quality-adjusted Life Years (QALY) gained compared with SQ under the policies without e-cigarettes

From the 2nd column, the numbers out of the bracket are the means, and the numbers inside the brackets are the corresponding 95% CI of the meanⁱ

Year	Annual QALY gained compared with SQ (years) under				
	MLA	SFG	TAX2	TAX5	MLA + TAX5
2027	2571 (2564, 2577)	4558 (4544, 4571)	5096 (4625, 5568)	1543 (908, 2177)	4176 (4033, 4320)
2037	5711 (5697, 5726)	11165 (11141, 11190)	14515 (13362, 15668)	3767 (2860, 4674)	9398 (9063, 9733)
2047	9852 (9826, 9878)	20444 (20408, 20479)	23986 (22356, 25616)	6598 (5690, 7506)	15930 (15417, 16443)
2057	14990 (14949, 15032)	32472 (32421, 32523)	29334 (27711, 30957)	9133 (8317, 9948)	22824 (22262, 23385)
2067	21090 (21031, 21149)	47340 (47269, 47412)	33220 (31534, 34906)	11708 (10961, 12455)	30288 (29749, 30828)

Table S4 - 2: Annual Quality-adjusted Life Years (QALY) gained compared with SQ under the policies with e-cigarettes (SGUS variant)

From the 2nd column, the numbers out of the bracket are the means, and the numbers inside the brackets are the corresponding 95% CI of the meanⁱ

Year	Annual QALY gained compared with SQ (years) under						
	ELF	EP	ELF25	MLA + EP	TAX5 + EP	MLA + TAX5 + EP	SFG + ELF
2027	-1336 (-1447, -1224)	3085 (2941, 3229)	-932 (-1030, -833)	5639 (5495, 5783)	4422 (4225, 4620)	6923 (6724, 7121)	3041 (2927, 3154)
2037	-1968 (-2208, -1728)	6583 (6237, 6928)	-1142 (-1346, -938)	12031 (11690, 12372)	9560 (9079, 10041)	14812 (14332, 15292)	8266 (8020, 8512)
2047	-3265 (-3617, -2912)	8667 (8233, 9100)	-1805 (-2084, -1526)	17750 (17334, 18165)	13704 (13011, 14397)	22301 (21624, 22978)	14805 (14440, 15171)
2057	-5390 (-5868, -4912)	9617 (9185, 10050)	-3072 (-3419, -2725)	23134 (22747, 23520)	16418 (15644, 17192)	28934 (28222, 29646)	22560 (22045, 23076)
2067	-8324 (-8968, -7680)	10424 (9976, 10871)	-4963 (-5409, -4516)	29220 (28861, 29579)	18954 (18117, 19791)	35922 (35235, 36609)	31601 (30874, 32328)

Table S4 - 3: Annual Quality-adjusted Life Years (QALY) gained compared with SQ under the policies with e-cigarettes (SGUK variant)

From the 2nd column, the numbers out of the bracket are the means, and the numbers inside the brackets are the corresponding 95% CI of the meanⁱ

Year	Annual QALY gained compared with SQ (years) under						
	ELF	EP	ELF25	MLA + EP	TAX5 + EP	MLA + TAX5 + EP	SFG + ELF
2027	4242 (3765, 4718)	3396 (3124, 3668)	4400 (3936, 4865)	5947 (5675, 6220)	4713 (4414, 5012)	7211 (6911, 7510)	8646 (8168, 9124)
2037	9398 (8543, 10252)	7848 (7300, 8397)	9510 (8688, 10331)	13241 (12697, 13786)	10743 (10100, 11386)	15938 (15298, 16577)	19411 (18557, 20265)
2047	11338 (10340, 12335)	10698 (10054, 11342)	11485 (10563, 12406)	19603 (18981, 20224)	15656 (14799, 16512)	24070 (23236, 24903)	28562 (27582, 29543)
2057	10853 (9810, 11896)	12090 (11467, 12713)	11088 (10201, 11975)	25198 (24641, 25755)	18809 (17898, 19721)	30917 (30084, 31750)	36936 (35943, 37930)
2067	9676 (8471, 10881)	13297 (12641, 13952)	10013 (9084, 10941)	31408 (30889, 31926)	21688 (20728, 22648)	37995 (37213, 38776)	46753 (45615, 47892)

Table S4 - 4: Annual Quality-adjusted Life Years (QALY) gained compared with SQ under the policies with e-cigarettes (SGJP variant)

From the 2nd column, the numbers out of the bracket are the means, and the numbers inside the brackets are the corresponding 95% CI of the meanⁱ

Year	Annual QALY gained compared with SQ (years) under						
	ELF	EP	ELF25	MLA + EP	TAX5 + EP	MLA + TAX5 + EP	SFG + ELF
2027	2042 (1374, 2710)	4144 (3656, 4633)	2420 (1796, 3045)	6695 (6208, 7183)	5764 (5273, 6255)	8261 (7771, 8751)	6394 (5713, 7074)
2037	4754 (3402, 6105)	8730 (7628, 9832)	5508 (4280, 6737)	14107 (13035, 15180)	12320 (11207, 13434)	17489 (16402, 18577)	14705 (13321, 16090)
2047	4958 (3138, 6778)	11416 (10020, 12813)	6284 (4724, 7844)	20299 (18996, 21602)	17212 (15743, 18681)	25565 (24181, 26948)	22202 (20300, 24104)
2057	2900 (699, 5102)	12537 (11104, 13969)	4983 (3253, 6712)	25677 (24432, 26922)	20047 (18495, 21599)	32100 (30729, 33471)	29228 (26793, 31662)
2067	-95 (-2811, 2620)	13516 (12059, 14974)	2898 (909, 4886)	31704 (30551, 32858)	22625 (21033, 24216)	38868 (37591, 40146)	37278 (34053, 40503)

ⁱ We ran the simulation 1000 times for each scenario. Each mean value presented in the tables below is calculated from the 1000 runs, and the corresponding 95% confidence interval (CI) is the CI for that mean value, i.e. representing uncertainty that could have been reduced with more simulations. Besides, the QALY values in the tables are presented with no future discounting.