

Estimating the long-term health impacts of changes in alcohol consumption in England during the COVID-19 pandemic

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Appendix 1: Data collection and processing

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Population Data

Table 1: The percentage of men and women of each age group who are in the A-C1 and C2-E socioeconomic status categories in the 2011 Census

Age	Male		Female	
	A-C1	C2-E	A-C1	C2-E
16 to 19	48.91%	51.09%	48.83%	51.17%
20 to 21	52.94%	47.06%	52.25%	47.75%
22 to 24	51.58%	48.42%	50.35%	49.65%
25 to 29	53.63%	46.37%	54.53%	45.47%
30 to 34	56.56%	43.44%	58.49%	41.51%
35 to 39	56.15%	43.85%	57.86%	42.14%
40 to 44	53.66%	46.34%	55.93%	44.07%
45 to 49	52.00%	48.00%	55.28%	44.72%
50 to 54	50.61%	49.39%	54.01%	45.99%
55 to 59	49.60%	50.40%	53.10%	46.90%
60+	48.17%	51.83%	50.50%	49.50%



Risk Factor data

The Alcohol Toolkit Study was identified as a potential source of alcohol consumption data with socio-economic stratification, for England. The ATS involves cross-sectional household computer-assisted interviews carried out every month from March 2014 which includes a representative sample of ~1800 participants age 16+ in England. A new sample is drawn every month. ATS results are published as trend data for high risk drinking according to AUDIT and AUDIT-C classifications¹, stratified by two social grade groups, and the survey collects data on alcohol consumption which can be used to estimate weekly mean consumption at the individual level.

In order to assess whether the 2019 ATS survey sample was of the minimum required size to produce age, sex, and social grade-stratified alcohol consumption data of sufficient quality, sample size calculations were performed at 95% confidence. These provided a minimum required sample size of 384 per age-sex-SES group. The ATS sample was then iteratively stratified by age, sex, and social grade group to determine the highest level of stratification that would produce age groupings of minimum required size. This resulted in tabulation of low, medium and high risk drinking for three age groups (15-39, 40-59, and 60+ year olds) in males and females across the two social grade groups. Results were tabulated using ATS guidance for weighting of results. As ATS data is only collected from individuals aged 16+, 0-14 year olds were assumed not to consume alcohol (15 year olds were assumed to consume the same amount of alcohol as 16 year olds, in order to comply with 5-year age groupings present in the microsimulation). Not considered in the sample size estimation was the capacity to compare between stratification groups or to detect trends in high-risk drinking: inclusion of these parameters would result in a larger sample size requirement and therefore reduce the potential level of stratification of the results.

Table 2: The probabilities of transition to a higher alcohol consumption group, by age, sex, and SES

Age	Transition state	A-C1		C2-E	
		Male	Female	Male	Female
15-39	Low to medium	4.845%	2.662%	4.644%	2.160%
	Medium to high	7.044%	28.946%	16.510%	50.371%
40-59	Low to medium	6.330%	4.457%	3.917%	5.118%
	Medium to high	5.481%	17.859%	6.135%	44.021%
60+i	Low to medium	3.812%	0.989%	5.998%	2.108%
	Medium to high	8.748%	8.992%	11.096%	8.600%

Data calculated from ATS data²

¹ Saunders JB & Aasland OG, (1987) WHO Collaborative Project on the Identification and Treatment of Persons with Harmful Alcohol Consumption: Report on Phase I, The Development of a Screening Instrument Geneva, Switzerland: World Health Organization.

² The risk consumption categories used in this study were defined by weekly alcohol unit consumption as:

Male: Low risk: <=14, medium risk: >14 and <50, high risk: >=50

Female: Low risk: <=14, medium risk: >14 and <35, high risk: >=35



Disease Epidemiology

This section provides the incidence, prevalence and mortality data for diseases included in the report; six types of cancer, liver cirrhosis, hypertension, and stroke. We carried out a review of existing sources which to our knowledge reflects the epidemiology of these diseases in the UK. The selected sources are summarised in Table 3.

Table 3: Sources for data

Sources for data used in simulations			
Disease		Reference	ICD codes
Colorectal Cancer	Incidence	CRUK, 2021: Bowel Cancer: 2016-2018 [1]	C18-C20
	Prevalence*		
	Mortality		
Breast Cancer	Incidence	CRUK, 2021: Breast Cancer: 2016-2018 [2]	C50
	Prevalence*		
	Mortality		
Oesophageal Cancer	Incidence	CRUK, 2021: Oesophageal Cancer: 2016-2018 [3]	C15
	Prevalence*		
	Mortality		
Liver Cancer	Incidence	CRUK, 2021: Liver Cancer: 2016-2018 [4]	C22
	Prevalence*		
	Mortality		
Mouth Cancer	Incidence	CRUK, 2021: Head and Neck Cancer: 2016-2018 [5]	C00-C07, C09
	Prevalence*		
	Mortality		
Throat Cancer	Incidence	CRUK, 2021: Head and Neck Cancer: 2016-2018 [5]	C10-C13, C32
	Prevalence*		
	Mortality		
Liver Cirrhosis	Incidence	Ratib et al. 2014 [6]	K70.3, K71.7, K72.1, K74.4-74.6, K76.6
	Prevalence		
	Mortality	European mortality database [7]	
Stroke	Incidence	BHF Compendium, 2020, table 2.15 [8]	I60-I69
	Prevalence	Health Survey for England, 2017, table 1 [9]	
	Mortality	BHF Compendium, 2021, table 1.1 [10]	
Hypertension	Incidence	Calculated	I10-I15
	Prevalence	BHF Compendium, 2021, table 5.6 [10]	
	Mortality	Non-terminal	

* Calculated from incidence and survival



Colorectal cancer incidence

Colorectal cancer incidence per 100,000		
Age	Males	Females
0	0.0	0.0
1-4	0.0	0.0
5-9	0.0	0.1
10-14	0.3	0.5
15-19	0.5	1.0
20-24	0.9	1.5
25-29	2.7	2.5
30-34	6.3	6.8
35-39	11.6	11.3
40-44	14.5	13.5
45-49	24.4	21.6
50-54	47.1	37.1
55-59	87.7	60.6
60-64	151.4	91.0
65-69	198.3	119.1
70-74	273.5	171.2
75-79	351.7	234.8
80-84	464.7	309.6
85-89	503.0	352.0
90+	443.5	293.0



Colorectal cancer mortality

Colorectal cancer mortality per 100,000		
Age	Males	Females
0	0.0	0.0
1-4	0.0	0.0
5-9	0.0	0.0
10-14	0.0	0.0
15-19	0.1	0.1
20-24	0.2	0.2
25-29	0.5	0.4
30-34	1.7	1.5
35-39	2.8	3.2
40-44	3.8	3.0
45-49	6.9	5.7
50-54	12.9	9.7
55-59	23.6	16.4
60-64	41.0	23.9
65-69	61.0	36.4
70-74	86.6	52.9
75-79	139.1	87.3
80-84	222.6	139.0
85-89	299.8	212.0
90+	406.3	267.2



Breast cancer incidence (invasive)

Breast cancer incidence per 100,000		
Age	Males	Females
0	-	0.0
1-4	-	0.0
5-9	-	0.0
10-14	-	0.0
15-19	-	0.1
20-24	-	1.6
25-29	-	11.5
30-34	-	31.2
35-39	-	65.8
40-44	-	124.6
45-49	-	214.8
50-54	-	279.8
55-59	-	285.5
60-64	-	337.9
65-69	-	412.3
70-74	-	372.7
75-79	-	403
80-84	-	430.4
85-89	-	447.7
90+	-	448.4



Breast cancer mortality (invasive)

Breast cancer mortality per 100,000		
Age	Males	Females
0	-	0.0
1-4	-	0.0
5-9	-	0.0
10-14	-	0.0
15-19	-	0.0
20-24	-	0.1
25-29	-	0.9
30-34	-	3.3
35-39	-	7.5
40-44	-	13.5
45-49	-	22.7
50-54	-	34.0
55-59	-	40.3
60-64	-	47.5
65-69	-	61.6
70-74	-	81.0
75-79	-	109.5
80-84	-	155.4
85-89	-	214.8
90+	-	349.3



Oesophageal cancer incidence

Oesophageal cancer incidence per 100,000		
Age	Males	Females
0	0.0	0.0
1-4	0.0	0.0
5-9	0.0	0.0
10-14	0.0	0.0
15-19	0.0	0.0
20-24	0.1	0.0
25-29	0.3	0.0
30-34	0.5	0.1
35-39	1.1	0.4
40-44	2.1	0.8
45-49	6.9	1.8
50-54	13.2	3.9
55-59	26.7	7.6
60-64	42.7	13.7
65-69	62.6	20.1
70-74	82.6	26.3
75-79	95.7	38.3
80-84	96.7	47.6
85-89	114.1	58.1
90+	114.1	57.8



Oesophageal cancer mortality

Oesophageal cancer mortality per 100,000		
Age	Males	Females
0	0.0	0.0
1-4	0.0	0.0
5-9	0.0	0.0
10-14	0.0	0.0
15-19	0.0	0.0
20-24	0.1	0.0
25-29	0.1	0.0
30-34	0.4	0.1
35-39	0.8	0.1
40-44	1.8	0.4
45-49	4.6	1.0
50-54	9.9	2.7
55-59	19.2	5.2
60-64	32.6	10.0
65-69	50.5	14.7
70-74	64.5	20.5
75-79	87.0	33.1
80-84	100.2	45.6
85-89	128.9	61.6
90+	145.4	70.0



Liver cancer incidence

Liver cancer incidence per 100,000		
Age	Males	Females
0	0.7	0.5
1-4	0.7	0.5
5-9	0.1	0.1
10-14	0.1	0.0
15-19	0.1	0.1
20-24	0.1	0.2
25-29	0.2	0.2
30-34	0.5	0.3
35-39	1.1	0.5
40-44	1.7	0.9
45-49	3.6	1.6
50-54	8.1	3.2
55-59	16.1	5.6
60-64	26.6	9.9
65-69	37.6	14.6
70-74	48.8	18.8
75-79	63.1	26.8
80-84	74.2	35.1
85-89	79.4	41.3
90+	69.0	39.6



Liver cancer mortality

Liver cancer mortality per 100,000		
Age	Males	Females
0	0.1	0.1
1-4	0.1	0.1
5-9	0.0	0.1
10-14	0.0	0.0
15-19	0.1	0.0
20-24	0.1	0.0
25-29	0.1	0.1
30-34	0.3	0.2
35-39	0.4	0.4
40-44	1.2	0.6
45-49	2.5	1.3
50-54	5.6	2.6
55-59	10.8	4.8
60-64	18.6	9.5
65-69	28.9	13.7
70-74	39.0	19.9
75-79	57.9	30.9
80-84	72.7	40.0
85-89	87.1	47.9
90+	85.8	48.4



Mouth cancer incidence

Mouth cancer incidence per 100,000		
Age	Males	Females
0	0.05	0.06
1-4	0.05	0.06
5-9	0.05	0.06
10-14	0.1	0.18
15-19	0.25	0.3
20-24	0.25	0.42
25-29	0.45	0.6
30-34	1.05	1.08
35-39	2.05	2.04
40-44	5.05	3.3
45-49	11.15	5.46
50-54	20.35	8.58
55-59	29.6	12.96
60-64	37.2	16.44
65-69	40.45	17.82
70-74	40.3	18.48
75-79	37.95	19.98
80-84	35.95	18.78
85-89	32.95	21.48
90+	32.5	19.92



Mouth cancer mortality

Mouth cancer mortality per 100,000		
Age	Males	Females
0	0.0	0.0
1-4	0.0	0.0
5-9	0.0	0.0
10-14	0.0	0.0
15-19	0.05	0.0
20-24	0.05	0.0
25-29	0.05	0.06
30-34	0.15	0.12
35-39	0.3	0.24
40-44	0.85	0.48
45-49	2.2	0.84
50-54	4.25	1.5
55-59	6.35	2.52
60-64	10.95	4.32
65-69	14.1	5.46
70-74	15.75	6.06
75-79	17.75	8.4
80-84	19.2	8.82
85-89	23	12.72
90+	32.7	14.94



Liver cirrhosis incidence

Liver cirrhosis incidence per 100,000		
Age	Males	Females
0	0.0	0.0
1-4	0.0	0.0
5-9	0.0	0.0
10-14	0.0	0.0
15-19	0.0	0.0
20-24	4.49	4.49
25-29	4.49	4.49
30-34	4.49	4.49
35-39	17.09	17.09
40-44	17.09	17.09
45-49	38.36	38.36
50-54	38.36	38.36
55-59	50.09	50.09
60-64	50.09	50.09
65-69	54.13	54.13
70-74	54.13	54.13
75-79	55.18	55.18
80-84	55.18	55.18
85-89	36.77	36.77
90+	36.77	36.77

* Sex-disaggregated data not available for liver cirrhosis. Male liver cirrhosis incidence was assumed to be equal to female liver cirrhosis incidence across all age groups.



Liver cirrhosis mortality

Liver cirrhosis mortality per 100,000		
Age	Males	Females
0	0.0	0.0
1-4	0.0	0.0
5-9	0.0	0.0
10-14	0.0	0.0
15-19	0.0	0.0
20-24	0.43	0.27
25-29	0.43	0.27
30-34	8.89	5.53
35-39	8.89	5.53
40-44	8.89	5.53
45-49	30.35	16.0
50-54	30.35	16.0
55-59	30.35	16.0
60-64	38.25	18.17
65-69	38.25	18.17
70-74	38.25	18.17
75-79	27.85	16.77
80-84	27.85	16.77
85-89	27.85	16.77
90+	27.85	16.77



Throat cancer incidence

Throat cancer incidence per 100,000		
Age	Males	Females
0	0.037	0.021
1-4	0.037	0.021
5-9	0.037	0.021
10-14	0.074	0.063
15-19	0.185	0.105
20-24	0.185	0.147
25-29	0.333	0.21
30-34	0.777	0.378
35-39	1.517	0.714
40-44	3.737	1.155
45-49	8.251	1.911
50-54	15.059	3.003
55-59	21.904	4.536
60-64	27.528	5.754
65-69	29.933	6.237
70-74	29.822	6.468
75-79	28.083	6.993
80-84	26.603	6.573
85-89	24.383	7.518
90+	24.05	6.972



Throat cancer mortality

Throat cancer mortality per 100,000		
Age	Males	Females
0	0.0	0.0
1-4	0.0	0.0
5-9	0.0	0.0
10-14	0.0	0.0
15-19	0.037	0.0
20-24	0.037	0.0
25-29	0.037	0.021
30-34	0.111	0.042
35-39	0.222	0.084
40-44	0.629	0.168
45-49	1.628	0.294
50-54	3.145	0.525
55-59	4.699	0.882
60-64	8.103	1.512
65-69	10.434	1.911
70-74	11.655	2.121
75-79	13.135	2.94
80-84	14.208	3.087
85-89	17.02	4.452
90+	24.198	5.229



Stroke incidence

Stroke incidence per 100,000		
Age	Males	Females
0	0.0	0.0
1-4	0.0	0.0
5-9	0.0	0.0
10-14	0.0	0.0
15-19	0.0	0.0
20-24	0.0	0.0
25-29	0.0	0.0
30-34	0.0	0.0
35-39	0.0	0.0
40-44	0.0	0.0
45-49	157.8	119.5
50-54	157.8	119.5
55-59	325.9	235.4
60-64	325.9	235.4
65-69	665.3	466.4
70-74	665.3	466.4
75-79	1385.5	1275.8
80-84	1385.5	1275.8
85-89	1385.5	1275.8
90+	1385.5	1275.8



Stroke prevalence

Stroke prevalence per 100,000		
Age	Males	Females
0	0.0	0.0
1-4	0.0	0.0
5-9	0.0	0.0
10-14	0.0	0.0
15-19	0.0	0.0
20-24	0.0	0.0
25-29	0.0	0.0
30-34	0.0	0.0
35-39	0.0	0.0
40-44	0.0	0.0
45-49	2481.0	1885.0
50-54	2481.0	1885.0
55-59	3622.0	1959.0
60-64	3622.0	1959.0
65-69	6040.0	4141.0
70-74	6040.0	4141.0
75-79	10390.0	7508.0
80-84	10390.0	7508.0
85-89	10390.0	7508.0
90+	10390.0	7508.0



Stroke mortality

Stroke mortality per 100,000		
Age	Males	Females
0	0.0	0.0
1-4	0.0	0.0
5-9	0.0	0.0
10-14	0.0	0.0
15-19	0.0	0.0
20-24	0.0	0.0
25-29	0.0	0.0
30-34	0.0	0.0
35-39	0.0	0.0
40-44	0.0	0.0
45-49	13.22280344	8.737242848
50-54	13.22280344	8.737242848
55-59	30.35796324	21.99884782
60-64	30.35796324	21.99884782
65-69	91.91375165	68.33462606
70-74	91.91375165	68.33462606
75-79	246.6819692	200.1542359
80-84	246.6819692	200.1542359
85-89	1107.556993	1219.022986
90+	1107.556993	1219.022986



Hypertension prevalence

Hypertension prevalence per 100,000		
Age	Males	Females
0	0.0	0.0
1-4	0.0	0.0
5-9	0.0	0.0
10-14	0.0	0.0
15-17	0.0	0.0
18-24	2000	0.0
25-29	8000	6000
30-34	8000	6000
35-39	13000	9000
40-44	13000	9000
45-49	29000	22000
50-54	29000	22000
55-59	48000	33000
60-64	48000	33000
65-69	58000	51000
70-74	58000	51000
75-79	68000	65000
80-84	68000	65000
85-89	68000	65000
90+	68000	65000



Survival rates from disease

Disease	Survival					
	1-year (%)		5-year (%)		10-year (%)	
	Male	Female	Male	Female	Male	Female
Colorectal cancer CRUK, 2021: Bowel cancer (C18-C20): 2013-2017 [11]	79.3	77.1	58.2	58.6	51.9	53.8
Breast cancer CRUK, 2021: Breast cancer (C50): 2013-2017 [12]	NA	95.8	NA	85.0	NA	75.9
Oesophageal cancer CRUK, 2021: Oesophageal cancer (C15): 2013-2017 [13]	47.1	46.0	16.3	18.7	12.5	12.4
Liver cancer CRUK 2021: Liver cancer (C22): 2013-2017 [14]	40.0	34.6	13.7	10.7	NA	NA
Mouth cancer CRUK 2021: Oral Cavity Cancer (C03, C04, C05, C06): 2009-2013 [15]	77.8	79.2	53.5	59.8	42.2	49.6
Liver cirrhosis**						
Throat cancer CRUK: Hypopharyngeal Cancer (C12, C13): 2009-2013 [15]	60.4	60.7	27.2	30.2	17.9	23.3
Stroke*						
Hypertension (non-terminal)	–	–	–	–	–	–

* Calculated from incidence and mortality



Relative risks in the microsimulation

Increase in risk relative to non-drinkers			
Disease	Units per week*	Value (95% CI)	
		Males	Females
Colorectal Cancer Bagnardi et al. 2015 [16]	≤10.9	1.05 (0.95-1.16)	0.95 (0.89-1.01)
	11.0-43.8	1.21 (1.11-1.32)	1.07 (0.99-1.16)
	>43.8	1.53 (1.30-1.80)	1.24 (0.68-2.25)
Breast Cancer Bagnardi et al. 2015 [16]	≤10.9	-	1.04 (1.01-1.07)
	11.0-43.8	-	1.23 (1.19-1.28)
	>43.8	-	1.61 (1.33-1.94)
Oesophageal Cancer Bagnardi et al. 2015 [16]	≤10.9	1.39 (1.11-1.74)	1.14 (0.87-1.49)
	11.0-43.8	2.25 (1.78-2.85)	2.18 (1.42-3.35)
	>43.8	4.69 (3.49-6.31)	8.32 (2.95-23.45)
Liver Cancer Bagnardi et al. 2015 [16]	≤10.9	1.05 (0.84-1.32)	0.81 (0.59-1.12)
	11.0-43.8	1.08 (0.88-1.32)	1.24 (0.88-1.75)
	>43.8	1.59 (1.21-2.09)	3.89 (1.6-9.48)
Mouth Cancer Bagnardi et al. 2015 [16]	≤10.9	1.20 (1.06-1.25)	1.00 (0.78-1.27)
	11.0-43.8	2.01 (1.69-2.40)	1.67 (1.25-2.22)
	>43.8	5.33 (4.28-6.63)	5.70 (3.75-8.66)
Alcoholic Liver Disease Roerecke et al. 2019 [17]	10-21	0.91 ()	1.64 ()
	>21-42	1.97 ()	4.33 ()
	>42-63	2.62 ()	3.87 ()
	>63-73	3.8 (0.85-17.02)	12.44 (6.65-23.27)
	>73	6.93 (1.07-44.99)	24.58 (14.77-40.90)
Throat Cancer Bagnardi et al. 2015 [16]	≤10.9	1.20 (1.06-1.25)	1.00 (0.78-1.27)
	11.0-43.8	2.01 (1.69-2.40)	1.67 (1.25-2.22)
	>43.8	5.53 (4.28-6.63)	5.70 (3.75-8.66)
Ischaemic Stroke Ronksley et al. 2011 [18]	≤2.2	0.81 (0.74-0.89)	0.81 (0.74-0.89)
	2.2-13.0	0.80 (0.74-0.87)	0.80 (0.74-0.87)
	13.1-26.2	0.92 (0.82-1.04)	0.92 (0.82-1.04)
	26.3-52.5	1.15 (0.98-1.35)	1.15 (0.98-1.35)
	>52.5	1.62 (1.32-1.98)	1.62 (1.32-1.98)
Hypertension	>0-4	0.762499988	0.730700016
	>4-8	0.828499973	0.832780004
	>8-10	0.896099985	0.934220016
	>10-14	0.930499971	0.984700024
	>14-18	1.000499964	1.085180044
	>18-21	1.072100043	1.18501997
	>21-30	1.126850009	1.25948
	>30-35	1.296499968	1.480700016
	>35-40	1.394250035	1.602200031
	>40-45	1.494500041	1.7227
	>45-50	1.597249985	1.842200041
	>50-55	1.702499986	1.960700035
	>55-60	1.810250044	2.078200102
	>60-65	1.92050004	2.194700003
	>65-70	2.033250093	2.310199976
>70-75	2.148499966	2.424700022	



	>75-80	2.266249895	2.538199902
	>80-85	2.386499882	2.650700092
	>85-90	2.509249926	2.762200117
	>90-95	2.634500027	2.872699976
	>95-100	2.762249947	2.982199907
	>100-110	2.892499924	3.090699911
	>110-120	3.16050005	3.304699898
	>120-130	3.438499928	3.514699936
	>130-140	3.726500034	3.720700026
	>140-150	4.024499893	3.922699928
	>150	4.332499981	4.120699883

* The alcohol consumption thresholds have been converted to units per week where appropriate.



Health economics

Cost of colorectal cancer

	Direct health cost (Laudicella et al. 2016 [19])
Cost cited	£17,241 per patient 18-64 years (for 2010) £14,776 per patient 65+ years (for 2010)
Cost in 2021	£20,900.95 per patient 18-64 years £17,912.68 per patient 65+ years
Definition	<ul style="list-style-type: none">• Costs in the year of diagnosis• Includes: surgery cost, inpatient, and outpatient hospital cost in the first 12 months after diagnosis• Based on costs of hospital activity fixed in 2010
Cost used in the microsimulation	£5236.52
Definition of the cost used in the microsimulation	The average cost per patient over 9 years

Cost of breast cancer

	Direct health cost (Laudicella et al. 2016 [19])
Cost cited	£11,109.00 per patient 18-64 years (for 2010) £7788.00 per patient 65+ years (for 2010)
Cost in 2021	£13,467.24 per patient 18-64 years (for 2010) £9441.25 per patient 65+ years (for 2010)
Definition	<ul style="list-style-type: none">• Costs in the year of diagnosis• Includes: surgery cost, inpatient and outpatient hospital cost in the first 12 months after diagnosis• Based on costs of hospital activity fixed in 2010
Cost used in the microsimulation	£3644.8
Definition of the cost used in the microsimulation	The average cost per patient over 9 years



Cost of oesophageal cancer

	Direct health cost (Agus et al. 2013 [20])
Cost cited	£7,847.00 (for 2005)
Cost in 2021	£10,654.29
Definition	<ul style="list-style-type: none">Average cost of hospital care per patient in 12 months from presentation of oesophageal cancer
Cost used in the microsimulation	£10,654.29

Cost of liver cancer

	Direct health cost for HCC* (McEwan et al. 2017 [21])
Cost cited	£10,451.58 (SE** £2456.09) inflated to 2013 values
Cost in 2021	£12,016.24 (SE £2823.78) inflated as from 2013
Definition	<ul style="list-style-type: none">Mean cost for HCC in 2012-2013
Cost used in the microsimulation	£12,016.24

* Hepatocellular carcinoma, ** Standard error

Cost of mouth cancer

	Direct health cost (Speight et al. 2006 [22])
Cost cited	£1,869.00 precancer £4,914.00 stage I £8,535.00 stage II £11,883.00 stage III £13,513.00 stage IV (all values for year 2002-2003)
Cost in 2021	£2,730.73 precancer £7,179.68 stage I £12,470.20 stage II £17,361.85 stage III £19,743.39 stage IV (all values inflated as from 2002)
Definition	The total cost per patient over the 3-year study period (diagnosed in years 1998-2000)
Cost used in the microsimulation	£7011.17
Definition of the cost used in the microsimulation	The average cost per patient over 3 years



Cost of liver cirrhosis

	Direct health cost (Tanajewski et al. 2017 [23])
Cost cited	£1218.65 (cost inflated to 2013-2014)
Cost in 2021	£1377.52 (cost inflated as from 2014)
Definition	<ul style="list-style-type: none">Annual cost per patient for SLD* state, including cost of test, primary care, secondary care, other (dietitian), and medication
Cost used in the microsimulation	£1377.52

* Significant liver disease (fibrosis stage 2 or 3)

Cost of throat cancer

	Direct health cost (Agus et al. 2013 [20])
Cost cited	£7,847.00 (for 2005)
Cost in 2021	£10,654.29
Definition	<ul style="list-style-type: none">Average cost of hospital care per patient in 12 months from presentation of oesophageal cancer
Cost used in the microsimulation	£10,654.29

Cost of stroke

	Direct health cost (Ward et al. [24])
Cost cited	£6,120.00 (cost in 1 st year) £2,815.00 (cost in 2 nd year) (both values for 2007)
Cost in 2021	£7,872.58 (cost in 1 st year) £3,520.99 (cost in 2 nd year)
Definition	<ul style="list-style-type: none">The annual cost for a treatment of a single stroke patient based on the weighted distribution of mild, moderate, and severe stroke costs, excluding event cost
Cost used in the microsimulation	£3520.99
Definition of the cost used in the microsimulation	The annual cost for a treatment of a single stroke patient in a second year, based on the weighted distribution of mild, moderate, and severe stroke costs, excluding event cost



Cost of hypertension

Direct health cost (Constanti et al. 2020 [25] and Lovibond et al. 2011 [26])	
Cost cited	See definition
Cost in 2021	£153.12
Definition	
Cost used in the microsimulation	£153.12
Definition of the cost used in the microsimulation	<ul style="list-style-type: none">• The average annual cost of monitoring hypertension via consultations and clinical tests from the second year onwards (£75.00, uninflated), in addition to the average annual cost of hypertension treatment (£57.20, uninflated)• Based on the use of the most common generic drug in each class• Accounting for the proportion of people on different drug classes and those that are taking combination therapies

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