Description of the economic model (EQUIPTMOD) to assess the impact of tobacco cessation in five European countries

EQUIPT ROI Tool Technical Manual and Annexes

The EQUIPT Study Group

October 2016

EQUIPTMOD Technical Manual Appendix - HUNGARY

This is a technical appendix to the main report describing the EQUIPT ROI Tool available from:
http://equipt.eu/deliverables

European-study on Quantifying Utility of Investment in Protection from Tobacco www.equipt.eu

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EQUIPTMOD Technical Manual
Appendix - HUNGARY

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http://equipt.eu/deliverables

Country	**Hungary**
Person responsible to complete this report	**Nagy, Balázs**
Version	**1.1**
Date	**October 2016**
Verified by:	**Vokó, Zoltán**

For **each parameter**, the following information is provided:

1. Name of the parameter	**State the name and provide following info:**
1.1. Source	List the full reference of the study. If the source is unpublished or the value comes from your own analysis, you must indicate so here
1.2 Parameter value(s)	Indicate the base value in bold and provide all other values suggested for sensitivity analyses
2. How was the value obtained?	**Please provide info on the following:**
2.1 Target population/sub-group	Describe characteristics of the population and/or sub-groups from which the above value was obtained
2.2 Setting and location	Where was the study from which you have obtained the above value conducted? What were characteristics of (healthcare) system in that setting? If it is not possible to find this information in the source material, state 'not found'
2.3 Perspective	State whether the source study had any perspective, e.g. healthcare, societal, etc. If not applicable, state 'NA'
2.4 Interventions and comparators	Is the above parameter is related to an intervention and comparator, describe those as in the source material. If not applicable, state 'NA'.
2.5 Time horizon	State the time horizon related to the above parameter in the source material. If not applicable, state 'NA'.
2.6 Discount rate	State discount rate as applied in the source material. If not applicable, state 'NA'.
2.7 Choice of outcome	State how the source material chose (health or other relevant) outcomes to derive the above value? If not applicable, state 'NA'.
2.8 Measuring outcome	How was the outcome measured in the source material? Was it based on a single outcome or synthetic estimate? Was the outcome measured using preference-based method? If yes to one or more, provide details. If not applicable, state 'NA'.
2.9 Year	In which year the source study was conducted? Was the parameter value reflect the same year or different year (specify)?

2.10 Conversion	Was any conversion involved in deriving the above value? If yes, describe method of conversion. If no, state, 'NA'.
2.11 (Statistical) model	Was the above value calculated using any (statistical) model? If yes, describe method of analysis. Include the following: • How was the skewed, missing or censored data handled in the source material? • How was extrapolation done (if any)? • What statistical technique (e.g. ANOVA, OLS, Logistic regression, etc.) was used? • How was the uncertainty measured, e.g. via 95% confidence interval? If no, describe the non-model based calculation method.
3. Assumptions	**List all assumptions underpinning the above value, as described in the source materials.**
4. Limitations	**List all important limitations of source materials**
5. Transferability	**Is there anything from the source material that may have implications in relation to applying/generalizing the value to EQUIPT countries?**
6. Conflict of interest	**Look at the Conflict of Interest section in the source material and identify if there is anything that we should be aware of in using the above parameter value in the EQUIPT project (e.g. the value comes from pharma-sponsored study).**

Table of Contents

Abbreviations

CHD – Coronary Heart Disease

COPD – Chronic Obstructive Pulmonary Disease

EHIS – European Health Interview Survey

EQ-5D – Euro-QoL 5 Dimensions

FS – Former Smoker

GDP – Gross Domestic Product

GP – General Practitioner

GYTS – Global Youth Tobacco Survey

HICP – Harmonised indices of consumer prices

ICD – International Classification of Diseases

ICP – International Classification of Procedures in Medicine

LC – Lung Cancer

MEPS – Medical Expenditure Panel Survey

NHIF – National Health Insurance Fund

NRT – Nicotine replacement therapy

NS – Nonsmoker

OEP – National Health Insurance Fund

OLEF – National Health Interview Survey (Országos Lakossági Egészségfelmérés)

OTC – Over the counter

Rx – prescription

S – Smoker

STADAT – Hungarian Central Statistical Office

1. General data

1.1. Regional population details

1. Name of the parameter	**Population numbers**
1.1. Source	Hungarian Central Statistical Office, Demographic Yearbook, 2012. 1.2.2. Male population number by age and marital status, 1 January 2013 1.2.4. Female population number by age and marital status, 1 January 2013 Human Mortality Database, 2010. Complete Data Series. Period data. Population size 1950 - 2010. 1-year. http://www.mortality.org/hmd/HUN/STATS/Population.txt Population numbers above 90 years were calculated.
1.2 Parameter value(s)	See Table 1
2. How was the value obtained?	**Please provide info on the following:**
2.1 Target population/sub-group	Hungarian male and female population.
2.2 Setting and location	Hungary Characteristics of (healthcare) system were not found.
2.3 Perspective	NA
2.4 Interventions and comparators	NA
2.5 Time horizon	NA
2.6 Discount rate	NA
2.7 Choice of outcome	NA
2.8 Measuring outcome	NA
2.9 Year	2010, 2013
2.10 Conversion	NA
2.11 (Statistical) model	Population numbers above 90 years were calculated. Based on population data of the human mortality database, we calculated the distribution of the population above 90 by sex in 2010. So, due to the lack of 2013 (above 90) data we used the distribution of the 2010 population data.
3. Assumptions	The same distribution of the population above 90 by sex in 2010 and 2013 was assumed.
4. Limitations	**Population numbers above 90 years were calculated.**
5. Transferability	This data is not transferable.
6. Conflict of interest	-

1. Name of the parameter	**Prevalence of smoking**
1.1. Source	Demjén T, Bőti E, Koncz B and Vitrai J, 2011. A felnőttek dohányzására vonatkozó magyarországi felmérések adatai 2000-2009 (Hungarian survey data on adult smoking behavior 2000-2009). National Institute for Health Development. Hungarian Focal Point for Tobacco Control. Table 11. Percentage of adults by smoking status, sex and age-groups based on the data of OLEF2000, OLEF2003, ELEF2009 surveys (%). Calculated values.
1.2 Parameter value(s)	See Table 2
2. How was the value obtained?	**Please provide info on the following:**
2.1 Target population/sub-group	Representative sample of the Hungarian population.
2.2 Setting and location	Hungary Characteristics of (healthcare) system were not found.
2.3 Perspective	NA
2.4 Interventions and comparators	NA
2.5 Time horizon	NA
2.6 Discount rate	NA
2.7 Choice of outcome	NA
2.8 Measuring outcome	NA
2.9 Year	2009
2.10 Conversion	NA
2.11 (Statistical) model	Prevalence values were weighted in order to add to one hundred percent.
3. Assumptions	EHIS2009 (European Health Interview Survey) data were used. Daily and occasional smokers were assumed as current smokers.
4. Limitations	**NA**
5. Transferability	This data is not transferable.
6. Conflict of interest	-

1.2. Mortality rates

1. Name of the parameter	**Mortality rates by smoking status**
1.1. Source	Hungarian Central Statistical Office, Demographic Yearbook, 2012. 6.1.5. Number and rate of deceased males by age-groups - Deaths per thousand males of corresponding age. Hungarian Central Statistical Office, Demographic Yearbook, 2012. 6.1.6. Number and rate of deceased females by age-groups - Deaths per thousand females of corresponding age. Doll R, Peto R, Wheatley K, Gray R, Sutherland I. Mortality in relation to smoking: 40 years' observations on male British doctors. BMJ. 1994 Oct 8; 309(6959): 901–911. Calculated values.
1.2 Parameter value(s)	See Table 3 and Table 4
2. How was the value obtained?	**Please provide info on the following:**
2.1 Target population/sub-group	Hungarian male population Hungarian female population Male British doctors
2.2 Setting and location	Hungary Hungary UK
2.3 Perspective	NA
2.4 Interventions and comparators	NA
2.5 Time horizon	NA
2.6 Discount rate	NA
2.7 Choice of outcome	NA
2.8 Measuring outcome	NA
2.9 Year	2012 2012 1951-91
2.10 Conversion	NA
2.11 (Statistical) model	Mortality rates by smoking status are not available, the death rates of Doll were used to calculate the relative risks
3. Assumptions	**NA**
4. Limitations	**Country-specific mortality rates by smoking status are not available.**
5. Transferability	This data is partially transferable.
6. Conflict of interest	**-**

1.3. Relative Risks

1. Name of the parameter	**Relative Risks**
1.1. Source	1. Thun MJ, Carter BD, Feskanich D, Freedman ND, Prentice R, Lopez AD, et al. 5 Trends in Smoking-Related Mortality in the United States. New England Journal Medicine. 2013 2013/01/24;368(4):351-64. 2. U.S. Department of Health and Human Services. The Health Consequences of Smoking —50 Years of Progress: A Report of the Surgeon General. Atlanta, GA: U.S. Department of Health and Human Services, Centres for Disease Control and Prevention, National Centre for Chronic disease Prevention and Health Promotion, Office on Smoking and Health, 2014.
1.2 Parameter value(s)	See Table 5
2. How was the value obtained?	
2.1 Target population/sub-group	Age groups according to those proposed in sources: 35-54; 55 and over
2.2 Setting and location	US
2.3 Perspective	NA
2.4 Interventions and comparators	NA
2.5 Time horizon	In Thun NEJM 2013, the follow up strategy was explained: Follow up began on January 1, 2000 and ended on or before December 31, 2010.
2.6 Discount rate	NA
2.7 Choice of outcome	
2.8 Measuring outcome	
2.9 Year	2013
2.10 Conversion	NA
2.11 (Statistical) model	Age-specific risks were tabulated throughout Thun NEJM 2013. Cox proportional hazards regression were used to calculate age-adjusted and multivariable-adjusted relative risks estimates according to smoking status, the intensity and duration of smoking among current smokers and to age at the time of quitting among former smokers. Multivariable-adjusted analyses were stratified according to cohort and age at baseline and were further adjusted according to race and educational level.
3. Assumptions	NA

4. Limitations	The main limitation of data from Thun NEJM 2013 is that the data is only based on people 55 years and older for this reason, for those who are 35 to 54 years, Surgeon General's report 2014 Table 12.3 was used. The only drawback is that the data from the Surgeon General's report does not have confidence intervals. Using the contemporary cohort appears a good approach to reflect current risks of smoking and cover most of cases of disease.
5. Transferability	This data is transferable.
6. Conflict of interest	NA

1.4. Discount rate for costs and utilities

1. Name of the parameter	**Cost discount rate**
1.1. Source	Ministry of Human Resources (2013): Hungarian Guidelines for economic evaluation of health care technologies, Official Gazette of the Ministry of Health, Hungary (Egészségügyi Közlöny) 3: 579-600.
1.2 Parameter value(s)	**3.7%**
2. How was the value obtained?	**Please provide info on the following:**
2.1 Target population/sub-group	NA
2.2 Setting and location	Hungary
2.3 Perspective	NA
2.4 Interventions and comparators	NA
2.5 Time horizon	NA
2.6 Discount rate	NA
2.7 Choice of outcome	NA
2.8 Measuring outcome	NA
2.9 Year	NA
2.10 Conversion	NA
2.11 (Statistical) model	NA
3. Assumptions	**NA**
4. Limitations	**NA**
5. Transferability	This data is not transferable.
6. Conflict of interest	-

1. Name of the parameter	**Outcome discount rate**
1.1. Source	Ministry of Human Resources (2013): Hungarian Guidelines for economic evaluation of health care technologies, Official Gazette of the Ministry of Health, Hungary (Egészségügyi Közlöny) 3: 579-600.
1.2 Parameter value(s)	**3.7%**
2. How was the value obtained?	**Please provide info on the following:**
2.1 Target population/sub-group	NA
2.2 Setting and location	Hungary
2.3 Perspective	NA
2.4 Interventions and comparators	NA
2.5 Time horizon	NA
2.6 Discount rate	NA
2.7 Choice of outcome	NA
2.8 Measuring outcome	NA
2.9 Year	NA
2.10 Conversion	NA
2.11 (Statistical) model	NA
3. Assumptions	**NA**
4. Limitations	**NA**
5. Transferability	This data is not transferable.
6. Conflict of interest	**-**

1.5. Threshold value for QALY

1. Name of the parameter	**Threshold**
1.1. Source	Hungarian Central Statistical Office, Tables (STADAT), 2014, General economic indicators, Gross Domestic Product. 3.1.3. GDP per capita (1995–) Calculated value.
1.2 Parameter value(s)	**9,784,555 Ft (2014) (31,563€ - using a 310 Ft/€ conversion rate)**
2. How was the value obtained?	**Please provide info on the following:**
2.1 Target population/sub-group	NA
2.2 Setting and location	Hungary
2.3 Perspective	NA
2.4 Interventions and comparators	NA
2.5 Time horizon	2014
2.6 Discount rate	NA
2.7 Choice of outcome	NA
2.8 Measuring outcome	NA
2.9 Year	2014
2.10 Conversion	NA
2.11 (Statistical) model	GDP per capita multiplied by 3.
3. Assumptions	**NA**
4. Limitations	**NA**
5. Transferability	This data is not transferable.
6. Conflict of interest	-

1.6. Inflation rates

1. Name of the parameter	**Inflation**
1.1. Source	Eurostat database, 2015. Economy and Finance, Price, Harmonised indices of consumer prices (HICP). HICP (2005 = 100) - annual data (average index and rate of change)
1.2 Parameter value(s)	See Table 6
2. How was the value obtained?	**Please provide info on the following:**
2.1 Target population/sub-group	NA
2.2 Setting and location	Hungary
2.3 Perspective	NA
2.4 Interventions and comparators	NA
2.5 Time horizon	2001-2015
2.6 Discount rate	NA
2.7 Choice of outcome	NA
2.8 Measuring outcome	NA
2.9 Year	2001-2015
2.10 Conversion	NA
2.11 (Statistical) model	NA
3. Assumptions	**NA**
4. Limitations	**NA**
5. Transferability	This data is not transferable.
6. Conflict of interest	**-**

2. Disease Prevalence

2.1. Lung cancer prevalence

1. Name of the parameter	**Prevalence of lung cancer**
1.1. Source	National Health Insurance Fund (OEP). Number of patients with lung cancer on 1 January 2012. Hungarian Central Statistical Office, Demographic Yearbook, 2012. 1.2.1. Male population number by age and marital status, 1 January 2012 Hungarian Central Statistical Office, Demographic Yearbook, 2012. 1.2.3. Female population number by age and marital status, 1 January 2012
1.2 Parameter value(s)	See Table 7
2. How was the value obtained?	**Please provide info on the following:**
2.1 Target population/sub-group	Hungarian patients with lung cancer Hungarian male population Hungarian female population
2.2 Setting and location	Hungary
2.3 Perspective	NA
2.4 Interventions and comparators	NA
2.5 Time horizon	NA
2.6 Discount rate	NA
2.7 Choice of outcome	NA
2.8 Measuring outcome	NA
2.9 Year	2012
2.10 Conversion	NA
2.11 (Statistical) model	To calculate the prevalence of LC by sex and age group, the number of lung cancer was divided by the population number.
3. Assumptions	**The prevalence of LC under age 44 is zero.**
4. Limitations	Our prevalence data in ages above 44 also includes LC due to other causes.
5. Transferability	This data is not transferable.
6. Conflict of interest	-

2.2. Coronary Heart Disease (CHD) prevalence

1. Name of the parameter	**Prevalence of CHD**
1.1. Source	European Health Interview Survey, 2009. Prevalence of CHD and/or AMI by sex and age – not published Calculated value.
1.2 Parameter value(s)	See
2. How was the value obtained?	**Please provide info on the following:**
2.1 Target population/sub-group	Representative sample of the Hungarian population.
2.2 Setting and location	Characteristics of (healthcare) system were not found.
2.3 Perspective	NA
2.4 Interventions and comparators	NA
2.5 Time horizon	NA
2.6 Discount rate	NA
2.7 Choice of outcome	NA
2.8 Measuring outcome	NA
2.9 Year	2009
2.10 Conversion	NA
2.11 (Statistical) model	NA
3. Assumptions	**NA**
4. Limitations	**NA**
5. Transferability	This data is not transferable.
6. Conflict of interest	-

2.3. Chronic Obstructive Pulmonary Disease (COPD) prevalence

1. Name of the parameter	**Prevalence of COPD**
1.1. Source	European Health Interview Survey, 2009. Prevalence of COPD by sex and age – not published Calculated value.
1.2 Parameter value(s)	See Table 9
2. How was the value obtained?	**Please provide info on the following:**
2.1 Target population/sub-group	Representative sample of the Hungarian population.
2.2 Setting and location	Characteristics of (healthcare) system were not found.
2.3 Perspective	NA
2.4 Interventions and comparators	NA
2.5 Time horizon	NA
2.6 Discount rate	NA
2.7 Choice of outcome	NA
2.8 Measuring outcome	NA
2.9 Year	2009
2.10 Conversion	NA
2.11 (Statistical) model	NA
3. Assumptions	**NA**
4. Limitations	**NA**
5. Transferability	This data is not transferable.
6. Conflict of interest	-

2.4. Stroke prevalence

1. Name of the parameter	**Prevalence of stroke**
1.1. Source	European Health Interview Survey, 2009. Prevalence of smoking for men and women – not published Calculated values.
1.2 Parameter value(s)	See Table 10
2. How was the value obtained?	**Please provide info on the following:**
2.1 Target population/sub-group	Representative sample of the Hungarian population.
2.2 Setting and location	Characteristics of (healthcare) system were not found.
2.3 Perspective	NA
2.4 Interventions and comparators	NA
2.5 Time horizon	NA
2.6 Discount rate	NA
2.7 Choice of outcome	NA
2.8 Measuring outcome	NA
2.9 Year	2009
2.10 Conversion	NA
2.11 (Statistical) model	NA
3. Assumptions	**NA**
4. Limitations	**NA**
5. Transferability	This data is not transferable.
6. Conflict of interest	-

3. Costs

Disease Costs

3.1. Lung cancer costs

1. Name of the parameter	**Cost of lung cancer**
1.1. Source	Annual cost of lung cancer (LC) The Economic Burden of Smoking in Hungary in 2010 conducted by The Hungarian National Institute for Health Development
1.2 Parameter value(s)	Cost of lung cancer per patient per year : **Payer perspective: 1,158,945 Ft (3,739€ - using a 310 Ft/€ conversion rate)** **Healthcare perspective: 1,190,919 Ft (3,842€ - using a 310 Ft/€ conversion rate)** **Societal perspective: 1,190,919 Ft (3,842€ - using a 310 Ft/€ conversion rate)** **(All from the year 2010)**
2. How was the value obtained?	**Please provide info on the following:**
2.1 Target population/sub-group	patients with lung cancer (ICD code C33-34)
2.2 Setting and location	Hungary The cost of LC includes the following cost categories: GP, nursing, patients transport, hemodialysis, home care, rescue, laboratory services, outpatient services, inpatient services, sick pay, pharmaceutical subsidies, medical devices subsidies, pharmaceutical patient co-payment and medical devices patient co-payment.
2.3 Perspective	**Payer perspective**: cost paid by the Hungarian National Health Insurance Fund (NHIF) **Healthcare perspective**: cost paid by NHIF and patients **Societal perspective:** cost paid by NHIF and patients and quasi-societal cost
2.4 Interventions and comparators	NA
2.5 Time horizon	1 year
2.6 Discount rate	NA
2.7 Choice of outcome	The purpose of the source was to define the economic burden of smoking in Hungary.
2.8 Measuring outcome	The cost data derived from the Hungarian National Health Insurance Fund database. **Payer perspective**: it contains the following cost items: GP, nursing, patients transport, hemodialysis, home care, rescue, laboratory services, outpatient services, inpatient services, sick pay,

	pharmaceutical subsidies and medical devices subsidies. **Healthcare perspective**: it the following contains the following cost items: GP, nursing, patients transport, hemodialysis, home care, rescue, laboratory services, outpatient services, inpatient services, sick pay, pharmaceutical subsidies, medical devices subsidies, pharmaceutical patient co-payment and medical devices patient co-payment. **Societal perspective**: it contains the following cost items: GP, nursing, patients transport, hemodialysis, home care, rescue, laboratory services, outpatient services, inpatient services, sick pay, pharmaceutical subsidies, medical devices subsidies, pharmaceutical patient co-payment, medical devices patient co-payment and the quasi-societal cost.
2.9 Year	2010
2.10 Conversion	NA
2.11 (Statistical) model	Cost of LC per patient per year was calculated in the following way: **Payer perspective:** 1,158,945 Ft: We divided the total cost of lung cancer (26,343,970,678 Ft) paid by NHIF by the number of patients with LC (22,731). **Healthcare perspective**: 1,190,919 Ft: We divided the total cost of lung cancer (27,070,770,678 Ft) paid by NHIF and patients by the number of patients with LC (22,731). **Societal perspective:** 1,190,919 Ft: We divided the total cost of lung cancer (27,070,770,678 Ft) paid by NHIF and patients by the number of patients with LC (22,731).
3. Assumptions	**NA**
4. Limitations	**-**
5. Transferability	This data is not transferable.
6. Conflict of interest	**-**

3.2. Coronary Heart Disease (CHD) costs

1. Name of the parameter	**Cost of coronary heart disease**
1.1. Source	Annual cost of coronary heart disease (CHD), The Economic Burden of Smoking in Hungary in 2010 conducted by The Hungarian National Institute for Health Development
1.2 Parameter value(s)	Cost of coronary heart disease per patient per year: **Payer perspective: 413,967 Ft (1,335€ - using a 310 Ft/€ conversion rate)** **Healthcare perspective: 453,495 Ft (1,463€ - using a 310 Ft/€ conversion rate)** **Societal perspective: 453,495 Ft (1,463€ - using a 310 Ft/€ conversion rate)** **(all from the year 2010)**
2. How was the value obtained?	**Please provide info on the following:**
2.1 Target population/sub-group	patients with coronary heart disease (ICD code I20-25)
2.2 Setting and location	Hungary The cost of CHD includes the following cost categories: GP, nursing, patients transport, hemodialysis, home care, rescue, laboratory services, outpatient services, inpatient services, sick pay, pharmaceutical subsidies, medical devices subsidies, pharmaceutical patient co-payment and medical devices patient co-payment.
2.3 Perspective	**Payer perspective**: cost paid by the Hungarian National Health Insurance Fund (NHIF) **Healthcare perspective**: cost paid by NHIF and patients **Societal perspective:** cost paid by NHIF and patients and quasi-societal cost
2.4 Interventions and comparators	NA
2.5 Time horizon	1 year
2.6 Discount rate	NA
2.7 Choice of outcome	The purpose of the source was to define the economic burden of smoking in Hungary.
2.8 Measuring outcome	The cost data derived from the Hungarian National Health Insurance Fund database. **Payer perspective**: it contains the following cost items: GP, nursing, patients transport, hemodialysis, home care, rescue, laboratory services, outpatient services, inpatient services, sick pay, pharmaceutical subsidies and medical devices subsidies. **Healthcare perspective**: it the following contains the following cost items: GP, nursing, patients transport, hemodialysis, home care,

	rescue, laboratory services, outpatient services, inpatient services, sick pay, pharmaceutical subsidies, medical devices subsidies, pharmaceutical patient co-payment and medical devices patient co-payment. **Societal perspective**: it contains the following cost items: GP, nursing, patients transport, hemodialysis, home care, rescue, laboratory services, outpatient services, inpatient services, sick pay, pharmaceutical subsidies, medical devices subsidies, pharmaceutical patient co-payment, medical devices patient co-payment and the quasi-societal cost.
2.9 Year	2010
2.10 Conversion	NA
2.11 (Statistical) model	Cost of CHD per patient per year was calculated in the following way: **Payer perspective:** 413,967 Ft: We divided the total cost of coronary heart disease (29,626,760,000 Ft) paid by NHIF by the number of patients with CHD (71,568). **Healthcare perspective**: 453,495 Ft: We divided the total cost of coronary heart disease (32,455,760,000 Ft) paid by NHIF and patients by the number of patients with CHD (71,568). **Societal perspective:** 453,495 Ft: We divided the total cost of coronary heart disease (32,455,760,000 Ft) paid by NHIF and patients by the number of patients with CHD (71,568).
3. Assumptions	**NA**
4. Limitations	-
5. Transferability	This data is not transferable.
6. Conflict of interest	-

3.3. Chronic Obstructive Pulmonary Disease (COPD) costs

1. Name of the parameter	**Cost of chronic obstructive pulmonary disease**
1.1. Source	Annual cost of chronic obstructive pulmonary disease (COPD) The Economic Burden of Smoking in Hungary in 2010 conducted by The Hungarian National Institute for Health Development
1.2 Parameter value(s)	Cost of chronic obstructive pulmonary disease per patient per year: **Payer perspective: 505,783 Ft (1,632€ - using a 310 Ft/€ conversion rate)** **Healthcare perspective: 543,345 Ft (1,753€ - using a 310 Ft/€ conversion rate)** **Societal perspective: 543,345 Ft (1,753 € - using a 310 Ft/€ conversion rate)** **(all from the year 2010)**
2. How was the value obtained?	**Please provide info on the following:**
2.1 Target population/sub-group	patients with chronic obstructive pulmonary disease (ICD code J40-J43, J44)
2.2 Setting and location	Hungary The cost of COPD includes the following cost categories: GP, nursing, patients transport, hemodialysis, home care, rescue, laboratory services, outpatient services, inpatient services, sick pay, pharmaceutical subsidies, medical devices subsidies, pharmaceutical patient co-payment and medical devices patient co-payment.
2.3 Perspective	**Payer perspective**: cost paid by the Hungarian National Health Insurance Fund (NHIF) **Healthcare perspective**: cost paid by NHIF and patients **Societal perspective:** cost paid by NHIF and patients and quasi-societal cost
2.4 Interventions and comparators	NA
2.5 Time horizon	1 year
2.6 Discount rate	NA
2.7 Choice of outcome	The purpose of the source was to define the economic burden of smoking in Hungary.
2.8 Measuring outcome	The cost data derived from the Hungarian National Health Insurance Fund database. **Payer perspective**: it contains the following cost items: GP, nursing, patients transport, hemodialysis, home care, rescue, laboratory services, outpatient services, inpatient services, sick pay, pharmaceutical subsidies and medical devices subsidies. **Healthcare perspective**: it the following contains the following cost items: GP, nursing, patients transport, hemodialysis, home care,

	rescue, laboratory services, outpatient services, inpatient services, sick pay, pharmaceutical subsidies, medical devices subsidies, pharmaceutical patient co-payment and medical devices patient co-payment. **Societal perspective**: it contains the following cost items: GP, nursing, patients transport, hemodialysis, home care, rescue, laboratory services, outpatient services, inpatient services, sick pay, pharmaceutical subsidies, medical devices subsidies, pharmaceutical patient co-payment, medical devices patient co-payment and the quasi-societal cost.
2.9 Year	2010
2.10 Conversion	NA
2.11 (Statistical) model	Cost of COPD per patient per year was calculated in the following way: **Payer perspective:** 505,783 Ft: We divided the total cost of chronic obstructive pulmonary disease (92,951,790,000 Ft) paid by NHIF by the number of patients with COPD (183,778). **Healthcare perspective**: 543,345 Ft: We divided the total cost of chronic obstructive pulmonary disease (99,854,790,000 Ft) paid by NHIF and patients by the number of patients with COPD (183,778). **Societal perspective:** 543,345 Ft: We divided the total cost of chronic obstructive pulmonary disease (99,854,790,000 Ft) paid by NHIF and patients by the number of patients with COPD (183,778).
3. Assumptions	**NA**
4. Limitations	-
5. Transferability	This data is not transferable.
6. Conflict of interest	-

3.4. Stroke costs

1. Name of the parameter	**Cost of stroke**
1.1. Source	Annual cost of stroke The Economic Burden of Smoking in Hungary in 2010 conducted by The Hungarian National Institute for Health Development
1.2 Parameter value(s)	Cost of stroke per patient per year: **Payer perspective: 395,569 Ft (1,276 € - using a 310 Ft/€ conversion rate)** **Healthcare perspective: 428,625 Ft (1,383 € - using a 310 Ft/€ conversion rate)** **Societal perspective: 428,625 Ft (1,383 € - using a 310 Ft/€ conversion rate)** **(all from the year 2010)**
2. How was the value obtained?	**Please provide info on the following:**
2.1 Target population/sub-group	patients with stroke (ICD code I60-69)
2.2 Setting and location	Hungary The cost of stroke includes the following cost categories: GP, nursing, patients transport, hemodialysis, home care, rescue, laboratory services, outpatient services, inpatient services, sick pay, pharmaceutical subsidies, medical devices subsidies, pharmaceutical patient co-payment and medical devices patient co-payment.
2.3 Perspective	**Payer perspective**: cost paid by the Hungarian National Health Insurance Fund (NHIF) **Healthcare perspective**: cost paid by NHIF and patients **Societal perspective:** cost paid by NHIF and patients and quasi-societal cost
2.4 Interventions and comparators	NA
2.5 Time horizon	1 year
2.6 Discount rate	NA
2.7 Choice of outcome	The purpose of the source was to define the economic burden of smoking in Hungary.
2.8 Measuring outcome	The cost data derived from the Hungarian National Health Insurance Fund database. **Payer perspective**: it contains the following cost items: GP, nursing, patients transport, hemodialysis, home care, rescue, laboratory services, outpatient services, inpatient services, sick pay, pharmaceutical subsidies and medical devices subsidies. **Healthcare perspective**: it the following contains the following cost items: GP, nursing, patients transport, hemodialysis, home care,

	rescue, laboratory services, outpatient services, inpatient services, sick pay, pharmaceutical subsidies, medical devices subsidies, pharmaceutical patient co-payment and medical devices patient co-payment. **Societal perspective**: it contains the following cost items: GP, nursing, patients transport, hemodialysis, home care, rescue, laboratory services, outpatient services, inpatient services, sick pay, pharmaceutical subsidies, medical devices subsidies, pharmaceutical patient co-payment, medical devices patient co-payment and the quasi-societal cost.
2.9 Year	2010
2.10 Conversion	NA
2.11 (Statistical) model	Cost of stroke per patient per year was calculated in the following way: **Payer perspective:** 395,569 Ft: We divided the total cost of stroke (11,874,590,000 Ft) paid by NHIF by the number of patients with stroke (30,019). **Healthcare perspective**: 428,625 Ft: We divided the total cost of stroke (12,866,890,000 Ft) paid by NHIF and patients by the number of patients with stroke (30,019). **Societal perspective:** 428,625 Ft: We divided the total cost of stroke (12,866,890,000 Ft) paid by NHIF and patients by the number of patients with stroke (30,019).
3. Assumptions	**NA**
4. Limitations	-
5. Transferability	This data is not transferable.
6. Conflict of interest	-

Interventions cost

3.5. Cost of Rx Mono NRT

1. Name of the parameter	**Cost of Rx Mono NRT**
1.1. Source	**It is not available in Hungary. It would be passive in the model.**
1.2 Parameter value(s)	NA
2. How was the value obtained?	**Please provide info on the following:**
2.1 Target population/sub-group	NA
2.2 Setting and location	NA
2.3 Perspective	NA
2.4 Interventions and comparators	NA
2.5 Time horizon	NA
2.6 Discount rate	NA
2.7 Choice of outcome	NA
2.8 Measuring outcome	NA
2.9 Year	NA
2.10 Conversion	NA
2.11 (Statistical) model	NA
3. Assumptions	**NA**
4. Limitations	**-**
5. Transferability	-
6. Conflict of interest	**-**

3.6. Cost of Rx Combo NRT

1. Name of the parameter	**Cost of Rx Combo NRT**
1.1. Source	**It is not available in Hungary. It would be passive in the model.**
1.2 Parameter value(s)	NA
2. How was the value obtained?	**Please provide info on the following:**
2.1 Target population/sub-group	NA
2.2 Setting and location	NA
2.3 Perspective	NA
2.4 Interventions and comparators	NA
2.5 Time horizon	NA
2.6 Discount rate	NA
2.7 Choice of outcome	NA
2.8 Measuring outcome	NA
2.9 Year	NA
2.10 Conversion	NA
2.11 (Statistical) model	NA
3. Assumptions	**NA**
4. Limitations	**-**
5. Transferability	-
6. Conflict of interest	**-**

3.7. Cost of Varenicline (standard duration)

1. Name of the parameter	**Cost of Varenicline (standard duration)**
1.1. Source	http://www.hazipatika.com/gyogyszerkereso/kereses?search=champix&holkeres=nevben
1.2 Parameter value(s)	**Payer perspective: 0 Ft (0 €)** **Healthcare perspective: 136,057 Ft (439 € - using a 310 Ft/€ conversion rate)** **Societal perspective: 136,057 Ft (439 € - using a 310 Ft/€ conversion rate)** **(all from the year 2014)**
2. How was the value obtained?	**Please provide info on the following:**
2.1 Target population/sub-group	smokers who want to stop smoking
2.2 Setting and location	Hungary Varenicline is not reimbursed in Hungary. The smokers can buy it after prescription in a pharmacy.
2.3 Perspective	**Payer perspective**: cost paid by the Hungarian National Health Insurance Fund (NHIF) **Healthcare perspective**: cost paid by NHIF and patients **Societal perspective:** cost paid by NHIF and patients and quasi-societal cost
2.4 Interventions and comparators	Champix tablets
2.5 Time horizon	1 year
2.6 Discount rate	NA
2.7 Choice of outcome	NA
2.8 Measuring outcome	NA
2.9 Year	2014
2.10 Conversion	NA
2.11 (Statistical) model	We calculated the cost of varenicline therapy considering the Summary of Product Characterics of Champix and the price of Champix in Hungary.
3. Assumptions	**NA**
4. Limitations	**-**
5. Transferability	This data is not transferable.
6. Conflict of interest	-

3.8. Cost of Varenicline (extended duration)

1. Name of the parameter	**Cost of Varenicline (extended duration)**
1.1. Source	**It is not available in Hungary. It would be passive in the model.**
1.2 Parameter value(s)	NA
2. How was the value obtained?	**Please provide info on the following:**
2.1 Target population/sub-group	NA
2.2 Setting and location	NA
2.3 Perspective	NA
2.4 Interventions and comparators	NA
2.5 Time horizon	NA
2.6 Discount rate	NA
2.7 Choice of outcome	NA
2.8 Measuring outcome	NA
2.9 Year	NA
2.10 Conversion	NA
2.11 (Statistical) model	NA
3. Assumptions	**NA**
4. Limitations	**-**
5. Transferability	-
6. Conflict of interest	**-**

3.9. Cost of Bupropion

1. Name of the parameter	**Cost of Bupropion**
1.1. Source	Drug Database of National Health Insurance Fund
1.2 Parameter value(s)	Payer perspective: **1,838 Ft (6 € - using a 310 Ft/€ conversion rate)** Healthcare perspective: **7,352 Ft (24 € - using a 310 Ft/€ conversion rate)** Societal perspective: **7,352 Ft (24 € - using a 310 Ft/€ conversion rate)** **(all from the year 2014)**
2. How was the value obtained?	**Please provide info on the following:**
2.1 Target population/sub-group	smokers who want to stop smoking
2.2 Setting and location	Hungary Bupropion is reimbursed in Hungary. The smokers can buy it after prescription in a pharmacy.
2.3 Perspective	**Payer perspective**: cost paid by the Hungarian National Health Insurance Fund (NHIF) **Healthcare perspective**: cost paid by NHIF and patients **Societal perspective:** cost paid by NHIF and patients and quasi-societal cost
2.4 Interventions and comparators	Elontril tablets, Wellbutrin tablets
2.5 Time horizon	1 year
2.6 Discount rate	NA
2.7 Choice of outcome	NA
2.8 Measuring outcome	NA
2.9 Year	2014
2.10 Conversion	NA
2.11 (Statistical) model	We calculated the cost of bupropion therapy (3-4 weeks) considering the Summary of Product Characterics of Elontril and Wellbutrin and the prices of these drugs in Hungary.
3. Assumptions	**NA**
4. Limitations	**-**
5. Transferability	This data is not transferable.
6. Conflict of interest	**-**

3.10. Cost of Nortriptyline

1. Name of the parameter	**Cost of Nortriptyline**
1.1. Source	**It is not available in Hungary. It would be passive in the model.**
1.2 Parameter value(s)	NA
2. How was the value obtained?	**Please provide info on the following:**
2.1 Target population/sub-group	NA
2.2 Setting and location	NA
2.3 Perspective	NA
2.4 Interventions and comparators	NA
2.5 Time horizon	NA
2.6 Discount rate	NA
2.7 Choice of outcome	NA
2.8 Measuring outcome	NA
2.9 Year	NA
2.10 Conversion	NA
2.11 (Statistical) model	NA
3. Assumptions	**NA**
4. Limitations	**-**
5. Transferability	-
6. Conflict of interest	**-**

3.11. Cost of Cytisine

1. Name of the parameter	**Cost of Cytisine**
1.1. Source	**It is not available in Hungary. It would be passive in the model.**
1.2 Parameter value(s)	NA
2. How was the value obtained?	**Please provide info on the following:**
2.1 Target population/sub-group	NA
2.2 Setting and location	NA
2.3 Perspective	NA
2.4 Interventions and comparators	NA
2.5 Time horizon	NA
2.6 Discount rate	NA
2.7 Choice of outcome	NA
2.8 Measuring outcome	NA
2.9 Year	NA
2.10 Conversion	NA
2.11 (Statistical) model	NA
3. Assumptions	**NA**
4. Limitations	**-**
5. Transferability	-
6. Conflict of interest	**-**

3.12. Cost of OTC Mono NRT

1. Name of the parameter	**Cost of OTC Mono NRT**
1.1. Source	http://www.hazipatika.com/kereso?page=1&k=NIQUITIN+CQ&x=0&y=0
1.2 Parameter value(s)	Payer perspective: **0 Ft (0 €)** Healthcare perspective: **43,408.45 Ft (140 € - using a 310 Ft/€ conversion rate)** Societal perspective: **43,408.45 Ft (140 € - using a 310 Ft/€ conversion rate)** **(all from the year 2015)**
2. How was the value obtained?	**Please provide info on the following:**
2.1 Target population/sub-group	smokers who want to stop smoking
2.2 Setting and location	Hungary Nicotine Replacement Therapies are not reimbursed in Hungary. Smokers can buy it without prescription in many places e.g. in pharmacy, in market, etc.
2.3 Perspective	**Payer perspective**: cost paid by the Hungarian National Health Insurance Fund (NHIF) **Healthcare perspective**: cost paid by NHIF and patients **Societal perspective:** cost paid by NHIF and patients and quasi-societal cost
2.4 Interventions and comparators	Nicorette, Nicotinell, NiQuitin
2.5 Time horizon	1 year
2.6 Discount rate	NA
2.7 Choice of outcome	NA
2.8 Measuring outcome	NA
2.9 Year	2015
2.10 Conversion	NA
2.11 (Statistical) model	We calculated the average cost of NRT TDT therapy based on the costs of NiQuitin CQ therapy (21 mg 6 weeks, 14 mg 2 weeks and 7 mg 2 weeks), the NiQuitin Clear therapy (21 mg 6 weeks, 14 mg 2 weeks and 7 mg 2 weeks) and the Nicorette therapy (25 mg 8 weeks, 15 mg 2 weeks and 10 mg 2 weeks). We calculated the average cost of NRT gum therapy based on the costs of Nicorette gum and Nicotinell gum considering the Summary of Product Characterics of Nicorette and Nicotinell. We calculated the average cost of NRT lozenge based on the costs of Nicotinell lozenge, NiQuitin lozenge and NiQuitin mini lozenge. Finally we computed the cost of OTC Mono NRT therapy by weighting the average costs of TDT (80%), gum (5%) and lozenge (15%).

3. Assumptions	**NA**
4. Limitations	**-**
5. Transferability	This data is not transferable.
6. Conflict of interest	**-**

3.13. Cost of Cut down to quit

1. Name of the parameter	**Cost of Cut down to quit**
1.1. Source	**It is not available in Hungary. It would be passive in the model.**
1.2 Parameter value(s)	NA
2. How was the value obtained?	**Please provide info on the following:**
2.1 Target population/sub-group	NA
2.2 Setting and location	NA
2.3 Perspective	NA
2.4 Interventions and comparators	NA
2.5 Time horizon	NA
2.6 Discount rate	NA
2.7 Choice of outcome	NA
2.8 Measuring outcome	NA
2.9 Year	NA
2.10 Conversion	NA
2.11 (Statistical) model	NA
3. Assumptions	**NA**
4. Limitations	**-**
5. Transferability	-
6. Conflict of interest	**-**

3.14. Cost of Specialist behavioral support: one-to-one

1. Name of the parameter	**Cost of Specialist behavioral support: one-to-one**
1.1. Source	Outpatient Database of the National Health Insurance Fund
1.2 Parameter value(s)	**Payer perspective: 10,026 Ft (32 € - using a 310 Ft/€ conversion rate)** **Healthcare perspective: 10,026 Ft (32 € - using a 310 Ft/€ conversion rate)** **Societal perspective: 10,026 Ft (32 € - using a 310 Ft/€ conversion rate)** **(all from the year 2014)**
2. How was the value obtained?	**Please provide info on the following:**
2.1 Target population/sub-group	Smokers who want to stop smoking and go to specialist
2.2 Setting and location	Hungary Cost of Specialist behavioral support: one-to-one includes the cost of outpatient service.
2.3 Perspective	**Payer perspective**: cost paid by the Hungarian National Health Insurance Fund (NHIF) **Healthcare perspective**: cost paid by NHIF and patients **Societal perspective:** cost paid by NHIF and patients and quasi-societal cost
2.4 Interventions and comparators	NA
2.5 Time horizon	1 year
2.6 Discount rate	NA
2.7 Choice of outcome	NA
2.8 Measuring outcome	NA
2.9 Year	2014
2.10 Conversion	NA
2.11 (Statistical) model	We multiplied the average number of sessions per smoker (6) with the unit cost of specialist behavioral support: one-to-one (1,671 Ft).
3. Assumptions	**NA**
4. Limitations	**-**
5. Transferability	This data is not transferable.
6. Conflict of interest	**-**

3.15. Cost of Specialist behavioral support: group-based

1. Name of the parameter	**Cost of Specialist behavioral support: group-based**
1.1. Source	Outpatient Database of the National Health Insurance Fund
1.2 Parameter value(s)	**Payer perspective: 3,411 Ft (11 € - using a 310 Ft/€ conversion rate)** **Healthcare perspective: 3,411 Ft (11 € - using a 310 Ft/€ conversion rate)** **Societal perspective: 3,411 Ft (11 € - using a 310 Ft/€ conversion rate)** **(all from the year 2014)**
2. How was the value obtained?	**Please provide info on the following:**
2.1 Target population/sub-group	Smokers who want to stop smoking and go to specialist
2.2 Setting and location	Hungary Cost of Specialist behavioral support: group-based includes the cost of outpatient service.
2.3 Perspective	**Payer perspective**: cost paid by the Hungarian National Health Insurance Fund (NHIF) **Healthcare perspective**: cost paid by NHIF and patients **Societal perspective:** cost paid by NHIF and patients and quasi-societal cost
2.4 Interventions and comparators	NA
2.5 Time horizon	1 year
2.6 Discount rate	NA
2.7 Choice of outcome	NA
2.8 Measuring outcome	NA
2.9 Year	2014
2.10 Conversion	NA
2.11 (Statistical) model	We multiplied the average number of sessions per smoker (6) with the unit cost of specialist behavioral support: group-based (569 Ft).
3. Assumptions	**NA**
4. Limitations	**-**
5. Transferability	This data is not transferable.
6. Conflict of interest	-

3.16. Cost of Telephone support: pro-active

1. Name of the parameter	**Cost of Telephone support: pro-active**
1.1. Source	Calculated data. Dr Kovács Gábor, Director-General Chief Medical Officer, Korányi National Institute of Tuberculosis and Pulmonology, Head of Smoking Cessation Support Center Expert opinion.
1.2 Parameter value(s)	**Payer perspective: 0 Ft (0 €)** **Healthcare perspective: 15,936.17 Ft (51 € - using a 310 Ft/€ conversion rate)** **Societal perspective: 15,936.17 Ft (51 € - using a 310 Ft/€ conversion rate)** **(all from the year 2014)**
2. How was the value obtained?	**Please provide info on the following:**
2.1 Target population/sub-group	Smokers making a quit attempt during the year
2.2 Setting and location	Hungary
2.3 Perspective	**Payer perspective**: cost paid by the Hungarian National Health Insurance Fund (NHIF) **Healthcare perspective**: cost paid by NHIF and patients **Societal perspective:** cost paid by NHIF and patients and quasi-societal cost
2.4 Interventions and comparators	NA
2.5 Time horizon	1 year
2.6 Discount rate	NA
2.7 Choice of outcome	NA
2.8 Measuring outcome	NA
2.9 Year	2014
2.10 Conversion	NA
2.11 (Statistical) model	The cost of Telephone support: pro-active was calculated based on the data and expert opinion of Dr Kovács Gábor.
3. Assumptions	**NA**
4. Limitations	**This value is based on expert opinion.**
5. Transferability	This data is not transferable.
6. Conflict of interest	**-**

3.17. Cost of SMS text messaging

1. Name of the parameter	**Cost of SMS text messaging**
1.1. Source	**It is not available in Hungary. It would be passive in the model.**
1.2 Parameter value(s)	NA
2. How was the value obtained?	**Please provide info on the following:**
2.1 Target population/sub-group	NA
2.2 Setting and location	NA
2.3 Perspective	NA
2.4 Interventions and comparators	NA
2.5 Time horizon	NA
2.6 Discount rate	NA
2.7 Choice of outcome	NA
2.8 Measuring outcome	NA
2.9 Year	NA
2.10 Conversion	NA
2.11 (Statistical) model	NA
3. Assumptions	**NA**
4. Limitations	**-**
5. Transferability	-
6. Conflict of interest	**-**

3.18. Cost of Printed self-help materials

1. Name of the parameter	**Cost of Printed self-help materials**
1.1. Source	Dr Kovács Gábor, Director-General Chief Medical Officer, Korányi National Institute of Tuberculosis and Pulmonology, Head of Smoking Cessation Support Center Expert opinion.
1.2 Parameter value(s)	**Payer perspective: 0 Ft (0 €)** **Healthcare perspective: 200 Ft (1 € - using a 310 Ft/€ conversion rate)** **Societal perspective: 200 Ft (1 € - using a 310 Ft/€ conversion rate)**
2. How was the value obtained?	**Please provide info on the following:**
2.1 Target population/sub-group	Smokers making a quit attempt during the year
2.2 Setting and location	Hungary
2.3 Perspective	**Payer perspective**: cost paid by the Hungarian National Health Insurance Fund (NHIF) **Healthcare perspective**: cost paid by NHIF and patients **Societal perspective:** cost paid by NHIF and patients and quasi-societal cost
2.4 Interventions and comparators	NA
2.5 Time horizon	1 year
2.6 Discount rate	NA
2.7 Choice of outcome	NA
2.8 Measuring outcome	NA
2.9 Year	2014
2.10 Conversion	NA
2.11 (Statistical) model	The cost of Printed self-help materials was calculated based on the data and expert opinion of Dr Kovács Gábor.
3. Assumptions	**NA**
4. Limitations	**This value is based on expert opinion.**
5. Transferability	This data is not transferable.
6. Conflict of interest	-

3.19. Cost of Indoor-smoking ban

1. Name of the parameter	**Cost of Indoor-smoking ban**
1.1. Source	NA
1.2 Parameter value(s)	Cost of indoor-smoking ban is zero because there is no cost of enforcing this intervention (only legislation).
2. How was the value obtained?	**Please provide info on the following:**
2.1 Target population/sub-group	smokers
2.2 Setting and location	Hungary
2.3 Perspective	**Payer perspective**: cost paid by the Hungarian National Health Insurance Fund (NHIF) **Healthcare perspective**: cost paid by NHIF and patients **Societal perspective:** cost paid by NHIF and patients and quasi-societal cost
2.4 Interventions and comparators	NA
2.5 Time horizon	NA
2.6 Discount rate	NA
2.7 Choice of outcome	NA
2.8 Measuring outcome	NA
2.9 Year	NA
2.10 Conversion	NA
2.11 (Statistical) model	NA
3. Assumptions	**NA**
4. Limitations	**-**
5. Transferability	This data is not transferable.
6. Conflict of interest	**-**

3.20. Cost of Social marketing

1. Name of the parameter	**Cost of Social marketing**
1.1. Source	**It is not available in Hungary. It would be passive in the model.**
1.2 Parameter value(s)	NA
2. How was the value obtained?	**Please provide info on the following:**
2.1 Target population/sub-group	NA
2.2 Setting and location	NA
2.3 Perspective	NA
2.4 Interventions and comparators	NA
2.5 Time horizon	NA
2.6 Discount rate	NA
2.7 Choice of outcome	NA
2.8 Measuring outcome	NA
2.9 Year	NA
2.10 Conversion	NA
2.11 (Statistical) model	NA
3. Assumptions	**NA**
4. Limitations	**-**
5. Transferability	-
6. Conflict of interest	**-**

3.21. Cost of Brief physician advice

1. Name of the parameter	**Cost of Brief physician advice**
1.1. Source	National Health Insurance Fund, Statistical yearbook, 2013 http://site.oep.hu/statisztika/2013/html/hun/A2.html
1.2 Parameter value(s)	**Payer perspective: 1,241.39 Ft (4 € - using a 310 Ft/€ conversion rate)** **Healthcare perspective: 1,241.39 Ft (4 € - using a 310 Ft/€ conversion rate)** **Societal perspective: 1,241.39 Ft (4 € - using a 310 Ft/€ conversion rate)** **(all from the year 2013)**
2. How was the value obtained?	**Please provide info on the following:**
2.1 Target population/sub-group	Smokers
2.2 Setting and location	Hungary
2.3 Perspective	**Payer perspective**: cost paid by the Hungarian National Health Insurance Fund (NHIF) **Healthcare perspective**: cost paid by NHIF and patients **Societal perspective:** cost paid by NHIF and patients and quasi-societal cost
2.4 Interventions and comparators	NA
2.5 Time horizon	1 year
2.6 Discount rate	NA
2.7 Choice of outcome	NA
2.8 Measuring outcome	NA
2.9 Year	2013
2.10 Conversion	NA
2.11 (Statistical) model	We divided the amount of financing of all general practitioners (81,957,916,500 Ft) by the number of appearance at GP services (66,021,317).
3. Assumptions	**NA**
4. Limitations	-
5. Transferability	This data is not transferable.
6. Conflict of interest	-

4. Interventions (uptake)

4.1. Uptake data for Brief physician advice

1. Name of the parameter	**Uptake data for Brief physician advice**
1.1. Source	English data Dr Kovács Gábor, Director-General Chief Medical Officer, Korányi National Institute of Tuberculosis and Pulmonology, Head of Smoking Cessation Support Center Expert opinion.
1.2 Parameter value(s)	Eligible population: 70% Expected population in receipt of intervention: 7%
2. How was the value obtained?	**Please provide info on the following:**
2.1 Target population/sub-group	All smokers attending a surgery or clinic for any purpose during the year
2.2 Setting and location	UK Hungary
2.3 Perspective	NA
2.4 Interventions and comparators	NA
2.5 Time horizon	NA
2.6 Discount rate	NA
2.7 Choice of outcome	NA
2.8 Measuring outcome	NA
2.9 Year	NA
2.10 Conversion	NA
2.11 (Statistical) model	NA
3. Assumptions	**70% is the assumed proportion of smokers who visit their GP at least once a year based on data from England** **10% is the assumed proportion of smokers who visit their GP who receive advice on smoking in a given year based on expert opinion**
4. Limitations	**Country-specific data for proportion of smokers attending a clinic for any purpose is not available, we adapted the English estimation.**
5. Transferability	This data is partially transferable.
6. Conflict of interest	**-**

4.2. Uptake data for Nicotine replacement therapy: reduce to quit

1. Name of the parameter	**Uptake data for Nicotine replacement therapy: reduce to quit**
1.1. Source	Based on data from England, Smoking Toolkit Study
1.2 Parameter value(s)	Eligible population: 37% Expected population in receipt of intervention: 12%
2. How was the value obtained?	**Please provide info on the following:**
2.1 Target population/sub-group	Smokers of least 10 cigarettes per day not otherwise making a quit attempt during the year but willing to reduce consumption by 50% with a view to possible quitting
2.2 Setting and location	UK
2.3 Perspective	NA
2.4 Interventions and comparators	NA
2.5 Time horizon	NA
2.6 Discount rate	NA
2.7 Choice of outcome	NA
2.8 Measuring outcome	NA
2.9 Year	NA
2.10 Conversion	NA
2.11 (Statistical) model	NA
3. Assumptions	**60% is the assumed proportion of these who are eligible to use NRT based on data from England**
4. Limitations	**Country-specific data is not available, we adapted the English estimation.**
5. Transferability	This data is transferable.
6. Conflict of interest	**-**

4.3. Uptake data for Nicotine replacement therapy: single form

1. Name of the parameter	**Uptake data for Nicotine replacement therapy: single form**
1.1. Source	Based on data from England, Smoking Toolkit Study
1.2 Parameter value(s)	Expected population in receipt of intervention: 5%
2. How was the value obtained?	**Please provide info on the following:**
2.1 Target population/sub-group	Smokers of at least 10 cigarettes per day making a quit attempt during the year
2.2 Setting and location	UK
2.3 Perspective	NA
2.4 Interventions and comparators	NA
2.5 Time horizon	NA
2.6 Discount rate	NA
2.7 Choice of outcome	NA
2.8 Measuring outcome	NA
2.9 Year	NA
2.10 Conversion	NA
2.11 (Statistical) model	NA
3. Assumptions	**NA**
4. Limitations	**Country-specific data is not available, we adapted the English estimation.**
5. Transferability	This data is transferable.
6. Conflict of interest	**-**

4.4. Uptake data for Nicotine replacement therapy: dual form

1. Name of the parameter	**Uptake data for Nicotine replacement therapy: dual form**
1.1. Source	Based on data from England, Smoking Toolkit Study
1.2 Parameter value(s)	Expected population in receipt of intervention: 2%
2. How was the value obtained?	**Please provide info on the following:**
2.1 Target population/sub-group	Smokers of at least 10 cigarettes per day making a quit attempt during the year
2.2 Setting and location	UK
2.3 Perspective	NA
2.4 Interventions and comparators	NA
2.5 Time horizon	NA
2.6 Discount rate	NA
2.7 Choice of outcome	NA
2.8 Measuring outcome	NA
2.9 Year	NA
2.10 Conversion	NA
2.11 (Statistical) model	NA
3. Assumptions	**NA**
4. Limitations	**Country-specific data is not available, we adapted the English estimation.**
5. Transferability	This data is transferable.
6. Conflict of interest	**-**

4.5. Uptake data for Varenicline: standard duration

1. Name of the parameter	**Uptake data for Varenicline: standard duration**
1.1. Source	Calculated data. Dr Kovács Gábor, Director-General Chief Medical Officer, Korányi National Institute of Tuberculosis and Pulmonology, Head of Smoking Cessation Support Center Expert opinion.
1.2 Parameter value(s)	Expected population in receipt of intervention: 0.21%
2. How was the value obtained?	**Please provide info on the following:**
2.1 Target population/sub-group	Smokers of at least 10 cigarettes per day making a quit attempt during the year
2.2 Setting and location	Hungary
2.3 Perspective	NA
2.4 Interventions and comparators	NA
2.5 Time horizon	NA
2.6 Discount rate	NA
2.7 Choice of outcome	NA
2.8 Measuring outcome	NA
2.9 Year	NA
2.10 Conversion	NA
2.11 (Statistical) model	Number of smokers using Varenicline divided by the total number of adult (16+) smoking population which is the smoking prevalence multiplied by the total number of adult population (presented above).
3. Assumptions	**NA**
4. Limitations	**Country-specific data is not available, this value is based on expert opinion.**
5. Transferability	This data is partially transferable.
6. Conflict of interest	**-**

4.6. Uptake data for Varenicline: extended duration

1. Name of the parameter	**Uptake data for Varenicline: extended duration**
1.1. Source	Not used in Hungary.
1.2 Parameter value(s)	Expected population in receipt of intervention: 0%
2. How was the value obtained?	**Please provide info on the following:**
2.1 Target population/sub-group	NA
2.2 Setting and location	NA
2.3 Perspective	NA
2.4 Interventions and comparators	NA
2.5 Time horizon	NA
2.6 Discount rate	NA
2.7 Choice of outcome	NA
2.8 Measuring outcome	NA
2.9 Year	NA
2.10 Conversion	NA
2.11 (Statistical) model	NA
3. Assumptions	**NA**
4. Limitations	**NA**
5. Transferability	This data is not transferable.
6. Conflict of interest	-

4.7. Uptake data for Bupropion

1. Name of the parameter	**Uptake data for Bupropion**
1.1. Source	Not used in Hungary.
1.2 Parameter value(s)	Expected population in receipt of intervention: 0%
2. How was the value obtained?	**Please provide info on the following:**
2.1 Target population/sub-group	NA
2.2 Setting and location	NA
2.3 Perspective	NA
2.4 Interventions and comparators	NA
2.5 Time horizon	NA
2.6 Discount rate	NA
2.7 Choice of outcome	NA
2.8 Measuring outcome	NA
2.9 Year	NA
2.10 Conversion	NA
2.11 (Statistical) model	NA
3. Assumptions	**NA**
4. Limitations	**NA**
5. Transferability	**-**
6. Conflict of interest	**-**

4.8. Uptake data for Nortriptyline

1. Name of the parameter	**Uptake data for Nortriptyline**
1.1. Source	Not used in Hungary.
1.2 Parameter value(s)	Expected population in receipt of intervention: 0%
2. How was the value obtained?	**Please provide info on the following:**
2.1 Target population/sub-group	NA
2.2 Setting and location	NA
2.3 Perspective	NA
2.4 Interventions and comparators	NA
2.5 Time horizon	NA
2.6 Discount rate	NA
2.7 Choice of outcome	NA
2.8 Measuring outcome	NA
2.9 Year	NA
2.10 Conversion	NA
2.11 (Statistical) model	NA
3. Assumptions	**NA**
4. Limitations	**NA**
5. Transferability	**-**
6. Conflict of interest	**-**

4.9. Uptake data for Cytisine

1. Name of the parameter	**Uptake data for Cytisine**
1.1. Source	Not used in Hungary.
1.2 Parameter value(s)	Expected population in receipt of intervention: 0%
2. How was the value obtained?	**Please provide info on the following:**
2.1 Target population/sub-group	NA
2.2 Setting and location	NA
2.3 Perspective	NA
2.4 Interventions and comparators	NA
2.5 Time horizon	NA
2.6 Discount rate	NA
2.7 Choice of outcome	NA
2.8 Measuring outcome	NA
2.9 Year	NA
2.10 Conversion	NA
2.11 (Statistical) model	NA
3. Assumptions	**NA**
4. Limitations	**NA**
5. Transferability	**-**
6. Conflict of interest	**-**

4.10. Uptake data for Specialist behavioural support: one-to-one

1. Name of the parameter	**Uptake data for Specialist behavioural support: one-to-one**
1.1. Source	Calculated data. Dr Kovács Gábor, Director-General Chief Medical Officer, Korányi National Institute of Tuberculosis and Pulmonology, Head of Smoking Cessation Support Center Expert opinion.
1.2 Parameter value(s)	Expected population in receipt of intervention: 0.019%
2. How was the value obtained?	**Please provide info on the following:**
2.1 Target population/sub-group	Smokers making a quit attempt during the year
2.2 Setting and location	Hungary
2.3 Perspective	NA
2.4 Interventions and comparators	NA
2.5 Time horizon	NA
2.6 Discount rate	NA
2.7 Choice of outcome	NA
2.8 Measuring outcome	NA
2.9 Year	NA
2.10 Conversion	NA
2.11 (Statistical) model	Number of smokers receiving one-to-one support divided by the total number of adult (16+) smoking population which is the smoking prevalence multiplied by the total number of adult population (presented above).
3. Assumptions	**NA**
4. Limitations	**This value is based on expert opinion.**
5. Transferability	This data is partially transferable.
6. Conflict of interest	-

4.11. Uptake data for Specialist behavioural support: group-based

1. Name of the parameter	**Uptake data for Specialist behavioural support: group-based**
1.1. Source	Calculated data. Dr Kovács Gábor, Director-General Chief Medical Officer, Korányi National Institute of Tuberculosis and Pulmonology, Head of Smoking Cessation Support Center Expert opinion.
1.2 Parameter value(s)	Expected population in receipt of intervention: 0.20%
2. How was the value obtained?	**Please provide info on the following:**
2.1 Target population/sub-group	Smokers making a quit attempt during the year
2.2 Setting and location	Hungary
2.3 Perspective	NA
2.4 Interventions and comparators	NA
2.5 Time horizon	NA
2.6 Discount rate	NA
2.7 Choice of outcome	NA
2.8 Measuring outcome	NA
2.9 Year	NA
2.10 Conversion	NA
2.11 (Statistical) model	Number of smokers receiving group-based support divided by the total number of adult (16+) smoking population which is the smoking prevalence multiplied by the total number of adult population (presented above).
3. Assumptions	**NA**
4. Limitations	**This value is based on expert opinion.**
5. Transferability	This data is partially transferable.
6. Conflict of interest	-

4.12. Uptake data for Telephone support: pro-active

1. Name of the parameter	**Uptake data for Telephone support: pro-active**
1.1. Source	Calculated data. Dr Kovács Gábor, Director-General Chief Medical Officer, Korányi National Institute of Tuberculosis and Pulmonology, Head of Smoking Cessation Support Center Expert opinion.
1.2 Parameter value(s)	Expected population in receipt of intervention: 0.19%
2. How was the value obtained?	**Please provide info on the following:**
2.1 Target population/sub-group	Smokers making a quit attempt during the year
2.2 Setting and location	Hungary
2.3 Perspective	NA
2.4 Interventions and comparators	NA
2.5 Time horizon	NA
2.6 Discount rate	NA
2.7 Choice of outcome	NA
2.8 Measuring outcome	NA
2.9 Year	NA
2.10 Conversion	NA
2.11 (Statistical) model	Number of smokers receiving telephone support divided by the total number of adult (16+) smoking population which is the smoking prevalence multiplied by the total number of adult population (presented above).
3. Assumptions	**NA**
4. Limitations	**This value is based on expert opinion.**
5. Transferability	This data is partially transferable.
6. Conflict of interest	-

4.13. Uptake data for SMS text messaging

1. Name of the parameter	**Uptake data for SMS text messaging**
1.1. Source	Not used in Hungary.
1.2 Parameter value(s)	Expected population in receipt of intervention: 0%
2. How was the value obtained?	**Please provide info on the following:**
2.1 Target population/sub-group	NA
2.2 Setting and location	NA
2.3 Perspective	NA
2.4 Interventions and comparators	NA
2.5 Time horizon	NA
2.6 Discount rate	NA
2.7 Choice of outcome	NA
2.8 Measuring outcome	NA
2.9 Year	NA
2.10 Conversion	NA
2.11 (Statistical) model	NA
3. Assumptions	**NA**
4. Limitations	**NA**
5. Transferability	**-**
6. Conflict of interest	**-**

4.14. Uptake data for Printed self-help materials

1. Name of the parameter	**Uptake data for Printed self-help materials**
1.1. Source	Calculated data. Dr Kovács Gábor, Director-General Chief Medical Officer, Korányi National Institute of Tuberculosis and Pulmonology, Head of Smoking Cessation Support Center Expert opinion.
1.2 Parameter value(s)	Expected population in receipt of intervention: 0.38%
2. How was the value obtained?	**Please provide info on the following:**
2.1 Target population/sub-group	Smokers making a quit attempt during the year
2.2 Setting and location	Hungary
2.3 Perspective	NA
2.4 Interventions and comparators	NA
2.5 Time horizon	NA
2.6 Discount rate	NA
2.7 Choice of outcome	NA
2.8 Measuring outcome	NA
2.9 Year	NA
2.10 Conversion	NA
2.11 (Statistical) model	Number of smokers receiving telephone support divided by the total number of adult (16+) smoking population which is the smoking prevalence multiplied by the total number of adult population (presented above).
3. Assumptions	**NA**
4. Limitations	**This value is based on expert opinion.**
5. Transferability	This data is partially transferable.
6. Conflict of interest	-

5. Effectiveness (quit rates)

Not specific Hungarian data available in this case. Data from UK adopted.

6. Motivation to Quit

6.1. Smokers who made a quit attempt in the previous 12 months

1. Name of the parameter	**Uptake data for no intervention driving quit attempts**
1.1. Source	Dr Kovács Gábor, Director-General Chief Medical Officer, Korányi National Institute of Tuberculosis and Pulmonology, Head of Smoking Cessation Support Center Expert opinion.
1.2 Parameter value(s)	Eligible population: 100% Background rate: 34.5%
2. How was the value obtained?	**Please provide info on the following:**
2.1 Target population/sub-group	Hungarian adult smokers
2.2 Setting and location	NA
2.3 Perspective	NA
2.4 Interventions and comparators	NA
2.5 Time horizon	NA
2.6 Discount rate	NA
2.7 Choice of outcome	NA
2.8 Measuring outcome	NA
2.9 Year	NA
2.10 Conversion	NA
2.11 (Statistical) model	NA
3. Assumptions	**NA**
4. Limitations	**This value is based on expert opinion.**
5. Transferability	This data is partially transferable.
6. Conflict of interest	-

1. Name of the parameter	**Uptake data for no intervention to improve quit success**
1.1. Source	Dr Kovács Gábor, Director-General Chief Medical Officer, Korányi National Institute of Tuberculosis and Pulmonology, Head of Smoking Cessation Support Center Expert opinion.
1.2 Parameter value(s)	Eligible population: 34.5% Background rate: 2.90%
2. How was the value obtained?	**Please provide info on the following:**
2.1 Target population/sub-group	Hungarian adult smokers
2.2 Setting and location	NA
2.3 Perspective	NA
2.4 Interventions and comparators	NA
2.5 Time horizon	NA
2.6 Discount rate	NA
2.7 Choice of outcome	NA
2.8 Measuring outcome	NA
2.9 Year	NA
2.10 Conversion	NA
2.11 (Statistical) model	NA
3. Assumptions	**NA**
4. Limitations	**This value is based on expert opinion.**
5. Transferability	This data is partially transferable.
6. Conflict of interest	**-**

1. Name of the parameter	**Uptake data for no intervention to improve quit success in smokers of 10+ per day**
1.1. Source	European Health Interview Survey, 2009. Proportion of smokers smoke 10+ per day – not published Calculated value. Dr Kovács Gábor, Director-General Chief Medical Officer, Korányi National Institute of Tuberculosis and Pulmonology, Head of Smoking Cessation Support Center Expert opinion.
1.2 Parameter value(s)	Eligible population: 29.22% Background rate: 1.45%
2. How was the value obtained?	**Please provide info on the following:**
2.1 Target population/sub-group	Representative sample of the Hungarian population. Hungarian adult smokers.
2.2 Setting and location	Hungary
2.3 Perspective	NA
2.4 Interventions and comparators	NA
2.5 Time horizon	2009 NA
2.6 Discount rate	NA
2.7 Choice of outcome	NA
2.8 Measuring outcome	NA
2.9 Year	2009 NA
2.10 Conversion	NA
2.11 (Statistical) model	NA
3. Assumptions	**NA**
4. Limitations	**This value is based on expert opinion.**
5. Transferability	This data is partially transferable.
6. Conflict of interest	-

7. Utilities

7.1. Lung cancer utility

1. Name of the parameter	**Utility for lung cancer**
1.1. Source	Sullivan PW, Slejko JF, Sculpher MJ et al. Catalogue of EQ-5D scores for the United Kingdom. Med Decis Making 2011;31(6):800-804.
1.2 Parameter value(s)	**0.56**
2. How was the value obtained?	**Please provide info on the following:**
2.1 Target population/sub-group	Individuals who completed the 2000, 2001, 2002, and 2003 MEPS surveys
2.2 Setting and location	UK
2.3 Perspective	NA
2.4 Interventions and comparators	NA
2.5 Time horizon	2000-2003
2.6 Discount rate	NA
2.7 Choice of outcome	NA
2.8 Measuring outcome	EQ-5D
2.9 Year	2011
2.10 Conversion	NA
2.11 (Statistical) model	NA
3. Assumptions	**Country-specific utility values are not available, we adapted the data from Sullivan et al.**
4. Limitations	**Country-specific utility values are not available, we adapted the data from Sullivan et al.**
5. Transferability	This data is transferable.
6. Conflict of interest	-

7.2. Coronary Heart Disease (CHD) utility

1. Name of the parameter	**Utility for CHD**
1.1. Source	Sullivan PW, Slejko JF, Sculpher MJ et al. Catalogue of EQ-5D scores for the United Kingdom. Med Decis Making 2011;31(6):800-804.
1.2 Parameter value(s)	**0.621**
2. How was the value obtained?	**Please provide info on the following:**
2.1 Target population/sub-group	Individuals who completed the 2000, 2001, 2002, and 2003 MEPS surveys
2.2 Setting and location	UK
2.3 Perspective	NA
2.4 Interventions and comparators	NA
2.5 Time horizon	2000-2003
2.6 Discount rate	NA
2.7 Choice of outcome	NA
2.8 Measuring outcome	EQ-5D
2.9 Year	2011
2.10 Conversion	NA
2.11 (Statistical) model	NA
3. Assumptions	**Country-specific utility values are not available, we adapted the data from Sullivan et al.**
4. Limitations	**Country-specific utility values are not available, we adapted the data from Sullivan et al.**
5. Transferability	This data is transferable.
6. Conflict of interest	**-**

7.3. Chronic Obstructive Pulmonary Disease (COPD) utility

1. Name of the parameter	**Utility for COPD**
1.1. Source	Sullivan PW, Slejko JF, Sculpher MJ et al. Catalogue of EQ-5D scores for the United Kingdom. Med Decis Making 2011;31(6):800-804.
1.2 Parameter value(s)	**0.732**
2. How was the value obtained?	**Please provide info on the following:**
2.1 Target population/sub-group	Individuals who completed the 2000, 2001, 2002, and 2003 MEPS surveys
2.2 Setting and location	UK
2.3 Perspective	NA
2.4 Interventions and comparators	NA
2.5 Time horizon	2000-2003
2.6 Discount rate	NA
2.7 Choice of outcome	NA
2.8 Measuring outcome	EQ-5D
2.9 Year	2011
2.10 Conversion	NA
2.11 (Statistical) model	NA
3. Assumptions	**Country-specific utility values are not available, we adapted the data from Sullivan et al.**
4. Limitations	**Country-specific utility values are not available, we adapted the data from Sullivan et al.**
5. Transferability	This data is transferable.
6. Conflict of interest	-

7.4. Stroke utility

1. Name of the parameter	**Utility for stroke**
1.1. Source	Sullivan PW, Slejko JF, Sculpher MJ et al. Catalogue of EQ-5D scores for the United Kingdom. Med Decis Making 2011;31(6):800-804.
1.2 Parameter value(s)	**0.55**
2. How was the value obtained?	**Please provide info on the following:**
2.1 Target population/sub-group	Individuals who completed the 2000, 2001, 2002, and 2003 MEPS surveys
2.2 Setting and location	UK
2.3 Perspective	NA
2.4 Interventions and comparators	NA
2.5 Time horizon	2000-2003
2.6 Discount rate	NA
2.7 Choice of outcome	NA
2.8 Measuring outcome	EQ-5D
2.9 Year	2011
2.10 Conversion	NA
2.11 (Statistical) model	NA
3. Assumptions	**Country-specific utility values are not available, we adapted the data from Sullivan et al.**
4. Limitations	**Country-specific utility values are not available, we adapted the data from Sullivan et al.**
5. Transferability	This data is transferable.
6. Conflict of interest	-

7.5. Utility for Never smoker

1. Name of the parameter	**Utility for Never smoker**
1.1. Source	Vogl et al. Smoking and health-related quality of life in English general population: implications for economic evaluations. BMC Public Health 2012;12:203
1.2 Parameter value(s)	**0.8839**
2. How was the value obtained?	**Please provide info on the following:**
2.1 Target population/sub-group	English general population
2.2 Setting and location	UK
2.3 Perspective	NA
2.4 Interventions and comparators	NA
2.5 Time horizon	2006
2.6 Discount rate	NA
2.7 Choice of outcome	NA
2.8 Measuring outcome	EQ-5D
2.9 Year	2006
2.10 Conversion	NA
2.11 (Statistical) model	NA
3. Assumptions	**Country-specific utility values are not available, we adapted the data from Vogl et al.**
4. Limitations	**Country-specific utility values are not available, we adapted the data from Vogl et al.**
5. Transferability	This data is transferable.
6. Conflict of interest	-

7.6. Utility for Former smoker

1. Name of the parameter	**Utility for Former smoker**
1.1. Source	Vogl et al. Smoking and health-related quality of life in English general population: implications for economic evaluations. BMC Public Health 2012;12:203 European Health Interview Survey, 2009. Proportion of former smokers – not published Calculated value.
1.2 Parameter value(s)	**0.8689**
2. How was the value obtained?	**Please provide info on the following:**
2.1 Target population/sub-group	English general population Representative sample of the Hungarian population.
2.2 Setting and location	UK Hungary
2.3 Perspective	NA
2.4 Interventions and comparators	NA
2.5 Time horizon	2006 2009
2.6 Discount rate	NA
2.7 Choice of outcome	NA
2.8 Measuring outcome	EQ-5D NA
2.9 Year	2006
2.10 Conversion	NA
2.11 (Statistical) model	Utility for former smokers is the weighted average of utilities for ex-occasional and ex-regular smokers.
3. Assumptions	**Smoking prevalence is available for Hungary, we used these country specific data for the proportion of never, current and former smokers.** **The proportion of daily and occasional smokers among former smokers is the same as among current smokers.**
4. Limitations	**Country-specific utility values are not available, we adapted the data from Vogl et al.**
5. Transferability	This data is transferable.
6. Conflict of interest	**-**

7.7. Utility for Current smoker

1. Name of the parameter	**Utility for Current smoker**
1.1. Source	Vogl et al. Smoking and health-related quality of life in English general population: implications for economic evaluations. BMC Public Health 2012;12:203 European Health Interview Survey, 2009. Proportion of current smokers – not published Calculated value.
1.2 Parameter value(s)	**0.8458**
2. How was the value obtained?	**Please provide info on the following:**
2.1 Target population/sub-group	English general population Representative sample of the Hungarian population.
2.2 Setting and location	UK Hungary
2.3 Perspective	NA
2.4 Interventions and comparators	NA
2.5 Time horizon	2006 2009
2.6 Discount rate	NA
2.7 Choice of outcome	NA
2.8 Measuring outcome	EQ-5D NA
2.9 Year	2006
2.10 Conversion	NA
2.11 (Statistical) model	Utility for current smokers is the weighted average of utilities for light, moderate and heavy smokers.
3. Assumptions	**Smoking prevalence is available for Hungary, we used these country specific data for the proportion of never, current and former smokers.** **Light smoker: occasional smoker** **Moderate smoker: one who smokes under 19 cigarettes a day** **Heavy smoker: one who smokes 20 or more cigarettes a day**
4. Limitations	**Country-specific utility values are not available, we adapted the data from Vogl et al.**
5. Transferability	This data is transferable.
6. Conflict of interest	-

8. Passive Smoking

8.1. Cost attributable to passive smoking in children

1. Name of the parameter	**Child passive smoking costs per smoker**
1.1. Source	database of Hungarian National Health Insurance Fund National Health Insurance Fund's website (wwww.oep.hu): HONALPRA_GYOGYMEG_ADATOK_2008_2014 (1), Oberg, 2010: WHO: Global estimate of the burden of disease from second-hand smoke, 2010 Liese, 2013
1.2 Parameter value(s)	See Table 19
2. How was the value obtained?	**Please provide info on the following:**
2.1 Target population/sub-group	According to the estimations provided in Oberg 2010, Acute Otitis Media (AOM), Lower respiratory track infections (LRT infections) and asthma, were set as passive smoking related diseases among children. More specifically: AOM (acute otitis media): Children 0-5 years old Asthma: Children 0-18 years old LRT infections (low respiratory tract infections): Children 0-18 years old With all this, total costs and prevalence of these diseases were obtained, once this is done, the Population Attributable Fraction is applied to get the overall cost incurred due to exposure to second hand smoke. Total costs of asthma and LRT infections were drawn from National Health Insurance Fund's website. AOEM total costs were provided from National Health Insurance Fund's database.
2.2 Setting and location	Hungary Child passive smoking costs per smoker per year include cost of outpatient services, inpatient services and drugs.
2.3 Perspective	**Payer perspective**: cost paid by the Hungarian National Health Insurance Fund (NHIF) **Healthcare perspective**: cost paid by NHIF and patients **Societal perspective:** cost paid by NHIF and patients and quasi-societal cost
2.4 Interventions and comparators	NA
2.5 Time horizon	1 year
2.6 Discount rate	NA
2.7 Choice of outcome	NA
2.8 Measuring outcome	NA
2.9 Year	2014: AOM

	2015: LRT, asthma
2.10 Conversion	Costs were inflated to 2015 according the inflation rate officially published
2.11 (Statistical) model	We used the PAF (population attributable fraction) of EUR-C countries by Oberg, 2010: AOM: 0.16 Asthma: 0.16 LRT infections: 0.23 The annual costs of asthma and LRT infections (0-18 age group) were calculated based on the NHIF's database. The cost of AOM (0-5 age group) per patient per event was calculated based on the NHIF's database. The number of AOM patients was estimated based on the article of Liese, 2013. The annual cost of AOM was computed by multiplying the cost of treatment per patient with the number of patients.
3. Assumptions	**NA**
4. Limitations	**-**
5. Transferability	This data is not transferable.
6. Conflict of interest	**-**

8.2. Cost attributable to passive smoking in adults

1. Name of the parameter	**Adult passive smoking costs per smoker**
1.1. Source	The Economic Burden of Smoking in Hungary in 2010 conducted by The Hungarian National Institute for Health Development Oberg, 2010: WHO: Global estimate of the burden of disease from second-hand smoke, 2010 Yearbook of Korányi, 2013 ELEF, 2009
1.2 Parameter value(s)	See Table 20
2. How was the value obtained?	**Please provide info on the following:**
2.1 Target population/sub-group	According to the estimations provided in Oberg 2010, Coronary Heart Disease (CHD), Asthma and Lung Cancer, were set as passive smoking related diseases among adult. With all this, total costs and prevalence of these diseases were obtained, once this is done, the Population Attributable Fraction is applied to get the overall cost incurred due to exposure to second hand smoke. Prevalence data of this three diseases derived from the Yearbook of Korányi, 2013 (Asthma, Lung Cancer) and ELEF, 2009 (CHD). Total costs of Asthma, Lung Cancer and CHD were drawn from The Economic Burden of Smoking in Hungary in 2010.
2.2 Setting and location	Hungary The adult passive smoking costs per smoker per year include the following cost categories: GP, nursing, patients transport, hemodialysis, home care, rescue, laboratory services, outpatient services, inpatient services, sick pay, pharmaceutical subsidies, medical devices subsidies, pharmaceutical patient co-payment and medical devices patient co-payment.
2.3 Perspective	**Payer perspective**: cost paid by the Hungarian National Health Insurance Fund (NHIF) **Healthcare perspective**: cost paid by NHIF and patients **Societal perspective:** cost paid by NHIF and patients and quasi-societal cost
2.4 Interventions and comparators	NA
2.5 Time horizon	1 year
2.6 Discount rate	NA
2.7 Choice of outcome	The purpose of the source was to define the economic burden of smoking in Hungary.

2.8 Measuring outcome	The cost data derived from the Hungarian National Health Insurance Fund database. **Payer perspective**: it contains the following cost items: GP, nursing, patients transport, hemodialysis, home care, rescue, laboratory services, outpatient services, inpatient services, sick pay, pharmaceutical subsidies and medical devices subsidies. **Healthcare perspective**: it the following contains the following cost items: GP, nursing, patients transport, hemodialysis, home care, rescue, laboratory services, outpatient services, inpatient services, sick pay, pharmaceutical subsidies, medical devices subsidies, pharmaceutical patient co-payment and medical devices patient co-payment. **Societal perspective**: it contains the following cost items: GP, nursing, patients transport, hemodialysis, home care, rescue, laboratory services, outpatient services, inpatient services, sick pay, pharmaceutical subsidies, medical devices subsidies, pharmaceutical patient co-payment, medical devices patient co-payment and the quasi-societal cost.
2.9 Year	2010
2.10 Conversion	NA
2.11 (Statistical) model	We used the PAF (population attributable fraction) of EUR-C countries by Oberg, 2010: Asthma: women: 0.6039 men: 0.3961 Lung Cancer: women: 0.05 men: 0 CHD: women: 0.11 men: 0.03 Prevalence of: Asthma: women: men: Lung Cancer: women: 0.3949 men: 0.6051 CHD: women: 0.6124 men: 0.3876 The annual cost of these diseases:

	: **Payer perspective:** Asthma: 92,951,790,000 Ft Lung Cancer: 26,343,970,678 Ft CHD: 29,951,790,000 Ft **Healthcare perspective**: Asthma: 99,854,790,000 Ft Lung Cancer: 27,070,770,678 Ft CHD: 32,455,760,000 Ft **Societal perspective:** Asthma: 99,854,790,000 Ft Lung Cancer: 27,070,770,678 Ft CHD: 32,455,760,000 Ft
3. Assumptions	**NA**
4. Limitations	**-**
5. Transferability	This data is not transferable.
6. Conflict of interest	**-**

9. Productivity Loss

9.1. Work days lost per smoker

1. Name of the parameter	**Additional days of absence from work per year as a result of smoking**
1.1. Source	Gresz M, Nagy J, Freyler P, 2012. Health related costs of smoking from the viewpoint of the Health Insurance Fund in Hungary. Orvosi Hetilap. 153, 344–350. Table 3. Number of paid sick leave days in 2009 Hungarian Central Statistical Office, 2012. Tables (STADAT), Society, Labour Market. 2.1.4. Number of employees by age-groups and sex (1998-). Calculated value.
1.2 Parameter value(s)	**3.58**
2. How was the value obtained?	**Please provide info on the following:**
2.1 Target population/sub-group	NA (NHIF database analysis) Hungarian employed population.
2.2 Setting and location	Hungary Characteristics of (healthcare) system were not found.
2.3 Perspective	Societal NA
2.4 Interventions and comparators	NA
2.5 Time horizon	NA
2.6 Discount rate	NA
2.7 Choice of outcome	NA
2.8 Measuring outcome	NA
2.9 Year	2009 2012
2.10 Conversion	NA
2.11 (Statistical) model	Number of employed smokers is the product of the number of employees and the employment rate among smokers. Number of paid sick leave days divided by the number of employed smokers.
3. Assumptions	NA
4. Limitations	**NA**
5. Transferability	This data is not transferable.
6. Conflict of interest	-

9.2. Average hourly wage

1. Name of the parameter	**Average hourly wage rate**
1.1. Source	Hungarian Central Statistical Office, Quick Report on Gross Earnings, 2014. Calculated value.
1.2 Parameter value(s)	**1,441.65 Ft (5 € - using a 310 Ft/€ conversion rate) (2013)**
2. How was the value obtained?	**Please provide info on the following:**
2.1 Target population/sub-group	Full-time employees
2.2 Setting and location	Hungary NA
2.3 Perspective	NA
2.4 Interventions and comparators	NA
2.5 Time horizon	NA
2.6 Discount rate	NA
2.7 Choice of outcome	NA
2.8 Measuring outcome	NA
2.9 Year	2013
2.10 Conversion	NA
2.11 (Statistical) model	Average monthly gross earnings were divided by 160 hours.
3. Assumptions	NA
4. Limitations	**NA**
5. Transferability	This data is not transferable.
6. Conflict of interest	-

9.3. Employment among smokers

1. Name of the parameter	**Employment rate among smokers**
1.1. Source	European Health Interview Survey, 2009 – not published Calculated value.
1.2 Parameter value(s)	**0.5242**
2. How was the value obtained?	**Please provide info on the following:**
2.1 Target population/sub-group	Representative sample of the Hungarian population.
2.2 Setting and location	Hungary Characteristics of (healthcare) system were not found.
2.3 Perspective	NA
2.4 Interventions and comparators	NA
2.5 Time horizon	NA
2.6 Discount rate	NA
2.7 Choice of outcome	NA
2.8 Measuring outcome	NA
2.9 Year	2009
2.10 Conversion	NA
2.11 (Statistical) model	-
3. Assumptions	Full-time employees, part-time employees, full-time self employed, part-time self employed and family members were included.
4. Limitations	**NA**
5. Transferability	This data is not transferable.
6. Conflict of interest	-

Annexed Tables

Table 1 Population numbers

Age	Male	Female
0	46009	43003
1	45224	42708
2	45987	44040
3	49688	47119
4	50895	48614
5	49970	47549
6	51842	49377
7	50550	47397
8	48503	45895
9	48251	45785
10	49438	46945
11	49764	46992
12	50189	47384
13	48569	45851
14	49806	47521
15	52352	48919
16	56200	53255
17	59470	56517
18	60925	58224
19	61967	59210
20	64354	60645
21	66605	62968
22	65405	62360
23	63898	60207
24	63269	59654
25	63012	59398
26	63105	60303
27	63716	60656
28	60338	58592
29	61093	59629
30	64903	62368
31	68572	67462
32	71956	70684
33	77082	75496
34	80571	78702
35	84765	82632
36	88810	85897

37	92376	89830
38	88158	86004
39	74335	72794
40	73291	71732
41	72007	70657
42	72903	71755
43	73315	71950
44	72818	72728
45	69387	69672
46	63307	63412
47	60565	61234
48	59420	60491
49	58355	60078
50	56028	58680
51	59126	62673
52	61212	65541
53	60732	66399
54	62968	69149
55	64397	71441
56	71591	80824
57	76285	86753
58	78444	89908
59	70347	82295
60	61765	73900
61	60918	75035
62	61581	75084
63	57583	71527
64	55197	70155
65	51909	66763
66	44600	58217
67	41778	56740
68	46350	63768
69	41496	58032
70	40509	59056
71	36345	54138
72	34836	54796
73	30618	50236
74	28485	49014
75	25888	46672
76	23524	44429
77	22914	42809

78	21643	40867
79	20286	39492
80	18370	37746
81	16477	34486
82	15477	33561
83	13225	28898
84	11007	26612
85	9095	22740
86	7832	20981
87	6568	18433
88	5071	14023
89	4400	12600
90	4005	11190
91	1681	4767
92	1269	3650
93	930	2812
94	842	2656
95	807	2764
96	552	1855
97	347	1279
98	198	747
99	110	473
100	66	283

Table 2 Prevalence of smoking

Age	Current smoker (S)		Former (F)		Never-smoker (NS)	
	men	women	men	women	men	women
16-24	0.43	0.33	0.11	0.13	0.45	0.53
25-34	0.43	0.33	0.11	0.13	0.45	0.53
35-44	0.39	0.32	0.25	0.16	0.36	0.52
45-54	0.39	0.32	0.25	0.16	0.36	0.52
55-64	0.39	0.32	0.25	0.16	0.36	0.52
65-74	0.16	0.08	0.40	0.11	0.45	0.81
75 and over	0.16	0.08	0.40	0.11	0.45	0.81
All ages	0.36	0.26	0.23	0.14	0.40	0.60

Table 3 Mortality rates by age and sex

Age	male	female
12	0.000221	0.000098
13	0.000221	0.000098

14	0.000221	0.000098
15	0.000388	0.000160
16	0.000388	0.000160
17	0.000388	0.000160
18	0.000388	0.000160
19	0.000388	0.000160
20	0.000673	0.000226
21	0.000673	0.000226
22	0.000673	0.000226
23	0.000673	0.000226
24	0.000673	0.000226
25	0.000771	0.000310
26	0.000771	0.000310
27	0.000771	0.000310
28	0.000771	0.000310
29	0.000771	0.000310
30	0.001024	0.000414
31	0.001024	0.000414
32	0.001024	0.000414
33	0.001024	0.000414
34	0.001024	0.000414
35	0.001474	0.000697
36	0.001474	0.000697
37	0.001474	0.000697
38	0.001474	0.000697
39	0.001474	0.000697
40	0.003105	0.001476
41	0.003105	0.001476
42	0.003105	0.001476
43	0.003105	0.001476
44	0.003105	0.001476
45	0.006392	0.002842
46	0.006392	0.002842
47	0.006392	0.002842
48	0.006392	0.002842
49	0.006392	0.002842
50	0.011755	0.005081
51	0.011755	0.005081
52	0.011755	0.005081
53	0.011755	0.005081
54	0.011755	0.005081
55	0.018018	0.007510
56	0.018018	0.007510
57	0.018018	0.007510
58	0.018018	0.007510
59	0.018018	0.007510

60	0.025282	0.010747
61	0.025282	0.010747
62	0.025282	0.010747
63	0.025282	0.010747
64	0.025282	0.010747
65	0.033762	0.015782
66	0.033762	0.015782
67	0.033762	0.015782
68	0.033762	0.015782
69	0.033762	0.015782
70	0.048039	0.024549
71	0.048039	0.024549
72	0.048039	0.024549
73	0.048039	0.024549
74	0.048039	0.024549
75	0.072124	0.043455
76	0.072124	0.043455
77	0.072124	0.043455
78	0.072124	0.043455
79	0.072124	0.043455
80	0.111976	0.081722
81	0.111976	0.081722
82	0.111976	0.081722
83	0.111976	0.081722
84	0.111976	0.081722
85	0.198174	0.171883
86	0.198174	0.171883
87	0.198174	0.171883
88	0.198174	0.171883
89	0.198174	0.171883
90	0.198174	0.171883
91	0.198174	0.171883
92	0.198174	0.171883
93	0.198174	0.171883
94	0.198174	0.171883
95	0.198174	0.171883
96	0.198174	0.171883
97	0.198174	0.171883
98	0.198174	0.171883
99	0.198174	0.171883
100	0.198174	0.171883

Table 4 Death rates by age and smoking status

	Current smoker	Former	Non-smoker
Age at death			
under 35	0.11	0.11	0.11
35-44	2.80	2.00	1.60
45-54	8.10	4.90	4.00
55-64	20.30	13.40	9.50
65-74	47.00	31.60	23.70
75-84	106.00	77.30	67.40
85 and over	218.70	179.70	168.60

Table 5 RR of diseases

Contemporary cohort Thun 2013	**Men**		**Women**	
	Current	**Former**	**Current**	**Former**
Lung cancer	24.97	6.75	25.66	6.70
CHD	2.15	1.27	1.84	1.24
COPD	25.61	7.05	10.35	8.09
Stroke	2.10	1.15	1.92	1.92

Table 6 Inflation

Year	Weight	HCIP (2005=100%)	Financial Year
2001	1.7647	82.15	2000/01
2002	1.6767	86.46	2001/02
2003	1.6019	90.50	2002/03
2004	1.5003	96.63	2003/04
2005	1.4497	100.00	2004/05
2006	1.3935	104.03	2005/06
2007	1.2911	112.28	2006/07
2008	1.2177	119.05	2007/08
2009	1.1705	123.85	2008/09
2010	1.1177	129.70	2009/10
2011	1.0755	134.79	2010/11
2012	1.0179	142.42	2011/12
2013	1.0008	144.85	2012/13
2014	1.0006	144.88	2013/14
2015	1	144.97	2014/15

Table 7 Prevalence of lung cancer

Age band	male	female
0-18	0.0015%	0.0011%
19-59	0.1741%	0.1340%
60-100	0.5987%	0.2737%
All	0.2204%	0.1484%

Table 8 Prevalence of CHD

Age band	male	female
16-24	0.0000%	0.2487%
25-34	0.0000%	0.5875%
35-44	0.3272%	0.7440%
45-54	3.1357%	4.3839%
55-64	8.6179%	11.1639%
65-74	10.8113%	17.4643%
75-100	22.5471%	19.2994%

Table 9 Prevalence of COPD

Age band	male	female
16-24	0.6805%	1.5914%
25-34	1.5167%	3.0884%
35-44	1.9932%	2.6414%
45-54	1.8478%	5.3728%
55-64	5.8358%	11.3428%
65-74	5.9777%	7.0286%
75-100	9.3484%	12.3093%

Table 10 Prevalence of Stroke

Age band	male	female
16-24	0.0000%	0.0000%
25-34	0.6780%	0.0000%
35-44	0.5748%	0.1981%
45-54	1.2586%	1.5100%
55-64	1.9558%	1.3051%
65-74	4.8224%	4.1396%
75-100	2.8634%	2.9601%

Table 11 Lung cancer costs

Cost Category	Cost of Lung Cancer (ICD C33-34)
GP	1,694,160,000
nursing	9,060,678
patient transport	124,020,000
hemodialysis	490,230,000
home care	74,880,000
rescue	480,870,000
laboratory services	438,750,000
outpatient services	2,260,000,000
inpatient services	11,000,000,000
special inpatient services	1,680,000,000
sick pay	661,000,000
pharmaceutical subsidies	7,130,000,000
medical device subsidies	301,000,000
Total Cost by payer perspective	**26,343,970,678**
pharmaceutical co-payment	681,000,000
medical device co-payment	45,800,000
Total Cost by healthcare system perspective	**27,070,770,678**

Table 12 CHD costs

Cost Category	Cost of Coronary Heart Disease (ICD I20-I25)
GP	1,911,360,000
nursing	59,400,000
patient transport	139,920,000
hemodialysis	553,080,000
home care	84,480,000
rescue	542,520,000
laboratory services	495,000,000
outpatient services	2,990,000,000
inpatient services	10,400,000,000
special inpatient services	1,730,000,000
sick pay	1,180,000,000
pharmaceutical subsidies	8,850,000,000
medical device subsidies	691,000,000
Total Cost by payer perspective	**29,626,760,000**
pharmaceutical co-payment	2,700,000,000
medical device co-payment	129,000,000
Total Cost by healthcare system perspective	**32,455,760,000**

Table 13 COPD costs

Cost Category	Cost of Chronic Obstructive Pulmonary Disease (ICD J40-J43, J44)
GP	5,980,240,000
nursing	192,800,000
patient transport	437,780,000
hemodialysis	1,730,470,000
home care	264,320,000
rescue	1,697,430,000
laboratory services	1,548,750,000
outpatient services	8,870,000,000
inpatient services	36,500,000,000
special inpatient services	2,220,000,000
sick pay	1,790,000,000
pharmaceutical subsidies	28,700,000,000
medical device subsidies	3,020,000,000
Total Cost by payer perspective	**92,951,790,000**
pharmaceutical co-payment	6,430,000,000
medical device co-payment	473,000,000
Total Cost by healthcare system perspective	**99,854,790,000**

Table 14 Stroke costs

Cost Category	Cost of Stroke (ICD I60-69)
GP	767,440,000
nursing	29,400,000
patient transport	56,180,000
hemodialysis	222,070,000
home care	33,920,000
rescue	217,830,000
laboratory services	198,750,000
outpatient services	1,400,000,000
inpatient services	4,480,000,000
special inpatient services	242,000,000
sick pay	549,000,000
pharmaceutical subsidies	3,270,000,000
medical device subsidies	408,000,000
Total Cost by payer perspective	**11,874,590,000**
pharmaceutical co-payment	934,000,000
medical device co-payment	58,300,000
Total Cost by healthcare system perspective	**12,866,890,000**

Table 15 Utility for former smokers

Ex-occasional smoker	0.8819
Ex-regular smoker	0.8669

Table 16 Proportion of former smokers

Ex-occasional smoker	2.5%
Ex-regular smoker	15.8%

Table 17 Utility for current smokers

Light smoker	0.8629
Moderate smoker	0.8509
Heavy smoker	0.8319

Table 18 Proportion of current smokers

Light smoker	4.2%
Moderate smoker	15.8%
Heavy smoker	10.9%

Table 19 Costs attributable to passive smoking (children)

Diseases	**PAF – EUR C**	**Total cost**	**Cost attributable to passive smoking**
AOM	0.16	442,278,475	61,918,986 (2015)
LRT infections	0.23	1,432,099,032	329,382,777 (2014)
Asthma	0.16	2,461,680,323	393,868,852 (2014)

Table 20 Cost attributable to passive smoking (adult)

Diseases	**PAF – EUR C - men**	**PAF – EUR C - women**	**Total cost**	**Cost attributable to passive smoking (2010)**
Asthma	0.08	0.29	99,854,790,000	20,651,787,611
Lung Cancer	0	0.05	27,070,770,678	534,476,816
CHD	0.03	0.11	32,455,760,000	2,563,821,173