PHG Needs Assessment Calculator
Belgium
Preconception Care and Screening

Welcome to the PHG Health Needs Assessment Calculator for Preconception Care and Screening. The contents of this file are listed below.

Full name of the sheet	Short name
Country demographic, maternal health and socioeconomic indicators	Demography
Country health-service data	HealthServices
Risk factors for congenital disorders in women of reproductive age	PCCS-NA1.1
Population prevalence and variation for genetic conditions	PCCS-NA1.2
Effect of folic acid fortification on birth incidence of congenital heart disease	PCCS-CHD
Effect of maternal age on birth incidence of Down's syndrome	PNS-DOWNS
Effect of preconception care on fetal alcohol spectrum disorders	PCCS-FASD
Effect of preconception folic acid fortification and supplementation on neural tube defects	PCCS-NTD
Effect of preconception care on incidence of orofacial clefts	PNS-OFC
Effect of immunisation on rubella incidence in women	PNS-RUB
Effect of preconception screening and treatment on incidence of syphilis	PNS-SYPH
Effect of preconception care on congenital disorders caused by teratogens	PNS-TER

Belgium
Shared Data
Demographic, maternal health and socio-economic indicators

Please read first! If you have already completed a needs assessment for a different topic in this country, you will be able to copy the Demography information from that Calculator into here. The information should be the same.

By default, the Toolkit contains information at the national level.
If you would like to use a different population, then replace country information with that of your specific population of interest.

Number of persons by age-group and sex	Estimates			Your estimates			Chosen estimates		
Age group	Male	Female	Total	Male	Female	Total	Male	Female	Total
0-4 years	307172	293556	600728			0			0
5-9 years	301395	288713	590108			0			0
10-14 years	311519	298100	609619			0			0
15-19 years	332870	319445	652315			0			0
20-24 years	321424	319092	640516			0			0
25-29 years	343935	342257	686192			0			0
30-34 years	346326	340275	686601			0			0
35-39 years	385287	376623	761910			0			0
40-44 years	411776	399990	811766			0			0
45-49 years	404072	397943	802015			0			0
50-54 years	370283	368995	739278			0			0
55-59 years	337939	339036	676975			0			0
60-64 years	289377	299740	589117			0			0
65+ years	760934	1058792	1819726			0			0
Total	0	0	10666866	0	0	0	0	0	0
Female population aged 15-44 years		0			-			-	
Data year	in 2009								
Source, Year	UN 2011								

Ethnicity. Please enter data for the main ethnic groups if you are working with a population that is different from that of the country.

Ethnic group	Number	% population

Fertility and mortality	Estimate	Source, Year	Your estimate	Source, Year	Chosen estimate	Source, Year
Crude birth rate: live births (LB) / year / 1000 population	10	Unicef,				
Still birth rate (SB): Still births (SB) / year / 1000 total births	3	WHO, 2009				
Total births in 1000s (LB+SB) per year	109	Unicef,				
Infant mortality rate: infant deaths / 1000 LB / year	4	UNICEF				
Under-5 mortality rate: U5 deaths / 1000 LB / year	4	UNICEF				
Percentage births in women >35 years						
Life expectancy at birth (yrs)	80	WHO, 2009				
% of marriages consanguineous						

Maternal health	Estimate	Source, Year	Your estimate	Source, Year	Chosen estimate	Source, Year
Prenatal visits – at least 1 visit (%)						
Prenatal visits – at least 4 visits (%)						
Births attended by skilled health personnel (%)	99	WHO, 1999				
Contraception prevalence rate (%)	74.6	WHO, 2004				
Unmet need for family planning (%)						
Total fertility rate	1.8	WHO, 2009				
% home births						
% births at health care services						
Newborn health	**Estimate**	**Source, Year**	**Your estimate**	**Source, Year**	**Chosen estimate**	**Source, Year**
Number of neonatal examinations by SBA / trained staff						
% neonatal examinations by SBA / trained staff						

Socio-economic indicators	Estimate	Year	Your	Source,	Chosen	Source,
Gross national income per capita (PPP int. $)	35380	WHO, 2008				
% population living on < US$1 per day						
Birth registration coverage (%)	>90	WHO, 2007				
Death registration coverage (%)	90-100	WHO, 2005				

LB = live births
PPP = purchasing power parity
SBA = skilled birth attendant

Belgium
Shared Data
Health services data

Please read first! If you have already completed a needs assessment for a different topic in this country, you will be able to copy the Health Services information from that Calculator into here. The information should be the same.

This section provides health-service-related information for your country.
By default, the Toolkit contains information at the national level.
If you would like to use a different population, then replace country information with that of your specific population of interest.

Health Expenditure	Estimate	Source, Year	Your estimate	Source, Year	Chosen estimate	Source, Year
Per capita total expenditure on health (PPP int. $)	4237	WHO, 2009				
Total expenditure on health as percentage of GDP	11.8	WHO, 2009				
Per capita government expenditure on health (PPP int. $)	2896	WHO, 2009				
External resources for health as percentage of total expenditure on health	0	WHO, 2009				
General government expenditure on health as percentage of total expenditure on health	68.4	WHO, 2009				
Out-of-pocket expenditure as percentage of private expenditure on health	81.0	WHO, 2009				
Private expenditure on health as percentage of total expenditure on health	24.1	WHO, 2009				
General government expenditure on health as percentage of total government expenditure	14.8	WHO, 2009				

Health Workforce	Estimate	Source, Year	Your estimate	Source, Year	Chosen estimate	Source, Year
Number of nursing and midwifery personnel	3085	WHO, 2008				
Nursing and midwifery personnel density (per 10,000 population)	3	WHO, 2008				
Number of physicians	31274	WHO, 2008				
Physician density (per 10 000 population)	29.87	WHO, 2008				
Number of obstetricians						
Number of paediatricians						
Number of paediatric surgeons						
Number of paediatric cardiac surgeons						

Number of paediatric neurosurgeons						
Number of clinical geneticists						

Number of genetic counsellors						
Number of community health workers						
Number of skilled birth attendants (SBA)						
Density of SBA						
Number of lab staff providing cytogenetic testing						
Number of lab staff providing molecular genetics						
Number of lab staff providing biochemical tests for genetics						
Number of skilled health attendants						

Infrastructure	Estimate	Source, Year	Your estimate	Source, Year	Chosen estimate	Source, Year
Number of maternity units						
Number of services providing specialised care for people with CD						
Number of family planning services						
Number of preconception services						
Number of services providing prenatal care						
Number of services providing newborn care						
Number of facilities providing genetic services						
Number of laboratories providing cytogenetics						
Number of laboratories providing molecular genetics						
Number of laboratories providing biochemical tests for genetics						
Number of facilities for safe terminations of pregnancies for fetal defects						

PPP = purchasing power parity
GDP = gross domestic product
SBA = skilled birth attendant
CD = congenital disorders

Belgium

Preconception care and screening

Risk factors for congenital disorders in women of reproductive age

Risk factors	Proportion of women with risk factor	Qualitative assessment*	Variation	Source
Obesity				
Diabetes				
Malnutrition				
Teratogen exposure: environmental, agricultural and occupational				
Exposure to teratogenic prescribed and non-prescribed medicines				
Syphilis				
Rubella susceptibility				
Rubella infection				
Other infections (e.g. CMV or HIV)				
Alcohol consumption				
Tobacco use				
Advanced maternal age (>35)				
Iodine deficiency				
Folate deficiency				
Other risk factors				

* Complete if numerical data are unavailable. Use numbers from 1 to 5, where 1 = low importance and 5 = high importance.

Belgium
Preconception care and screening
Population prevalence and variation for genetic conditions

Condition	Prevalence per 1000 TB	Prevalence variation and high-risk populations	Tick if PCCS available	Type of PCCS available
Thalassaemias				
Sickle cell disease				
Rhesus incompatability				
G6PD deficiency				
Cystic fibrosis				
Other				

TB = total births (live births + still births)
PCCS = PreconCeption Care and Screening

Belgium
Preconception care and screening
Effect of folic acid fortification* on birth incidence of congenital heart disease

This sheet allows you to estimate the potential reduction in CHD prevalence through fortification of food with folic acid.
Please start by entering values reflecting your current situation. If you have no fortification programme, enter 0 for coverage.
Below, you may adjust dosage and coverage levels to demonstrate the effects of different intervention scenarios.

Current situation		Notes
Present estimated CHD prevalence per 1000 TB		
Present dosage (ppm)		Range: 1.5 to 3
Present coverage of fortification		Range: 0 to 1
Baseline CHD prevalence per 1000 TB, with no folic acid fortification*[1]		

Potential scenarios, based on your present situation		
Vary dosage (ppm)		Range: 1.5 to 3
Vary proportional population coverage		Range: 0 to 1
Estimated reduction in CHDs through folic acid fortification, per 1000 TB[2]	0.000	Do not delete this value!
Resulting prevalence of CHDs after folic acid fortification, per 1000 TB[3]	0.000	Do not delete this value!

ppm = parts per million
TB = total births (live births + still births)
* The effect of folic acid on CHD is assumed to be 25% of the effect on neural tube defects.
The regression formula underlying the effect on neural tube defects is given in the NTD Calculator in this Toolkit.
** Not considering the effects of other interventions on prevalence.

[1](Present estimated prevalence-(1.07*coverage*0.25)+(0.15*ppm*coverage*0.25))/(1-0.88*coverage*0.25)))
[2]((0.25*(Baseline CHD-(1.07*coverage+0.12*baseline CHD*coverage-0.15*dosage*coverage+baseline-baseline*coverage))))
[3]Baseline CHD prevalence – estimated reduction in CHD after fortification

Effects of folic acid supplementation on CHD

Effect of supplementation (with no fortification)		Notes
Baseline prevalence with no folic acid intervention (per 1000 TB)		This can be taken from the appropriate cell above
Maximum proportional reduction (assuming 100% coverage)	0.18	This value is fixed at 0.18
Population supplementation coverage		Range: 0 to 1
Actual proportional reduction	0	Maximum proportional reduction x Coverage
Actual prevalence reduction (per 1000 TB)	0.000	Baseline prevalence x Actual proportional reduction

New prevalence	**0.000**	Baseline prevalence -((Maximum prop. Reduction x Population supplementation coverage) x Baseline prevalence))
% prevalence reduction	#DIV/0!	1-(New prevalence/Baseline prevalence)
Absolute prevalence reduction (per 1000 TB)	0.000	Baseline prevalence -New prevalence

Now you can see below the potential combined effect of folate fortification and supplementation:

Additional effect of supplementation, given fortification	0.1	This value can be changed.

	New prevalence	
After fortification		This can be taken from the appropriate cell above
After supplementation	0.000	Same as new prevalence
After fortification and supplementation		Prevalence after fortification-(Additional effect of supplementation*prevalence after supplementation)

TB = total births (live births + still births)

CHD = congenital heart disease

Belgium
Preconception care and screening
Effects of maternal age on incidence of Down's syndrome

If you have an estimate for the birth prevalence of Down's syndrome, you can use the Calculator on the left.
If you have an estimate of the proportion of births that are to mothers aged over 35, you can use the Calculator on the right.

Birth prevalence per 1000 TB		
Proportional birth prevalence due to high maternal age[1]	#DIV/0!	
Birth prevalence attributable to high maternal age, per 1000 TB[2]	-0.86	
Baseline prevalence without maternal age effect	0.86	This figure is set at 0.86

Proportion of mothers aged >35		Range: 0 to 1
Estimated birth prevalence per 1000 TB[3]	0.86	
Proportional birth prevalence due to high maternal age[4]	0.00	
Birth prevalence attributable to high maternal age, per 1000 TB[5]	0	
Baseline prevalence without maternal age effect	0.86	This figure is set at 0.86

TB = total births (live births + still births)

[1](Birth prevalence – 0.86)/Birth prevalence

[2]Birth prevalence – Baseline prevalence

[3]0.86+(7*Proportion of mothers aged >35)

[4](Estimated birth prevalence- Baseline prevalence)/Estimated birth prevalence

[5]Estimated birth prevalence*Proportional birth prevalence

Belgium
Preconception care and screening
Effect of preconception care on fetal alcohol spectrum disorders

Baseline prevalence of FASD per 1000 total births (live + still)		
Baseline prevalence of unsafe alcohol consumption in women aged 15-44 per 1000		
Variables		
Proportion of women reducing alcohol consumption to safe levels before conception		Range: 0 to 1
Effectiveness of preconception intervention on the outcome		Range: 0 to 1
Results		
% prevalence reduction due to preconception intervention per 1000 total births[1]	0%	
Final prevalence of unsafe alcohol consumption in women aged 15-44 per 1000[2]	0.00	
Final prevalence of FASD per 1000 births[3]	0.00	

FASD = fetal alcohol spectrum disorder

[1]Prop. Women reducing alcohol consumption x Effectiveness of intervention

[2]Baseline prevalence of unsafe alcohol consumption - (% prevalence reduction due to intervention X baseline prevalence of unsafe alcohol consumption)

[3]Baseline prevalence of FASD - (% prevalence reduction due to preconception intervention X Baseline prevalence of FASD)

Belgium
Preconception care and screening
Effect of preconception folic acid fortification and supplementation on neural tube defects

This sheet allows you to estimate the potential reduction in NTD prevalence through fortification of food with folic acid and supplementation.
Please start by entering values reflecting your current situation. If you have no fortification programme, enter 0 for coverage.
Below, you may adjust dosage and coverage levels to demonstrate the effects of different intervention scenarios.

Current situation		Notes
Present estimated NTD prevalence per 1000 TB		
Present dosage (ppm)		Range: 1.5 to 3
Present coverage of fortification		Range: 0 to 1
Baseline NTD prevalence per 1000 TB, with no folic acid fortification*[1]		
Minimum prevalence NTD / 1000 births	0.9	This value is fixed at 0.9

Potential scenarios, based on your present situation		
Vary dosage (ppm)		Range: 1.5 to 3
Vary proportional population coverage		Range: 0 to 1
Estimated NTD prevalence with this scenario, per 1000 TB[2]		<- Do not modify this cell!
Absolute prevalence reduction with this scenario, per 1000 TB[3]		<- Do not modify this cell!

ppm = parts per million
TB = total births (live births + stillbirths)
* Not considering the effects of other interventions on prevalence.

[1] IF(B10="";"";IF(((B10-(1.07*B12)+(0.15*B11*B12))/(1-0.88*B12))<B15;B15;((B10-(1.07*B12)+(0.15*B11*B12))/(1-0.88*B12))))

[2] IF(B13="";"";IF(B13=0.9;0.9;IF((1.07*B19+0.12*B13*B19-0.15*(IF(B18="";B11;B18))*B19+B13-B13*B19)<B15;B15;(1.07*B19+0.12*B13*B19-0.15*(IF(B18="";B11;B18))*B19+B13-B13*B19))))

[3] IF(B20="";"";B13-B20)

See sheet NTD-Appx for explanation of regression.

NTD Interventions 2: Effect of folic acid supplementation

This sheet allows you to estimate the potential reduction in NTD incidence through folic acid supplementation for pregnant women.
Please enter a value for population coverage of folic acid supplementation, to determine its potential effect.

Effect of supplementation (with no fortification)		Notes
Baseline prevalence with no folic acid intervention (per 1000 TB)		This can be taken from the appropriate cell (baseline NTD prevalence) in sheet NTD-Interv1.
Maximum proportional reduction (assuming 100% coverage)	0.72	This value is fixed at 0.72
Population supplementation coverage		Range: 0 to 1
Actual proportional reduction	0	Maximum proportional reduction x Coverage
Actual prevalence reduction (per 1000 TB)	0.000	Baseline incidence x Actual proportional reduction
Minimum prevalence	0.9	This value is fixed at 0.9
New prevalence	0.000	Baseline prevalence-((Maximum proportional reduction X Population supplementation coverage) x Baseline prevalence)
% prevalence reduction	#DIV/0!	1 – (New prevalence/Baseline prevalence)
Absolute prevalence reduction (per 1000 TB)	0.000	Baseline prevalence- New prevalence
Final prevalence following supplementation	**0.900**	Cannot go below 0.9 / 1000 LB

Now you can see below the potential combined effect of folate fortification and supplementation:

Additional effect of supplementation, given fortification		This value can be changed.
	New prevalence	
After fortification		This value set in sheet NTD-Interv1
After supplementation		
After fortification and supplementation	0.000	Requires input in blank cells above[1]
% reduction	**#DIV/0!**	Requires input in blank cells above[2]
Final prevalence after fortification and supplementation		

TB = total births (live births + stillbirths)

[1]New Prevalence after fortification-(Additional effect of supplementation x Final prev. following supplemen.)

[2]If New prevalence after fortification < minimum prevalence then use (Baseline prev – min prevalence)/baseline prevalence)
Otherwise use: (Baseline prevalence – new prevalence after fortification and supplementation)/baseline prevalence

Belgium
Preconception care and screening
Effect of preconception care on incidence of orofacial clefts

OFC Interventions 1: Effect of folic acid fortification*

This sheet allows you to estimate the potential reduction in OFC prevalence through fortification of food with folic acid.
Please start by entering values reflecting your current situation. If you have no fortification programme, enter 0 for coverage.
Below, you may adjust dosage and coverage levels to demonstrate the effects of different intervention scenarios.

Current situation		Notes
Present estimated OFC prevalence per 1000 TB		
Present dosage (ppm)		Range: 1.5 to 3
Present coverage of fortification		Range: 0 to 1
[1]Baseline OFC prevalence per 1000 TB, with no folic acid fortification**		

Potential scenarios, based on your present situation		
Vary dosage (ppm)		Range: 1.5 to 3
Vary proportional population coverage		Range: 0 to 1
Estimated reduction in OFCs through folic acid fortification, per 1000 TB[2]	0.000	Do not delete this value!
Resulting prevalence of OFCs after folic acid fortification, per 1000 TB	0.000	Do not delete this value!

ppm = parts per million
TB = total births (live births + still births)
* The effect of folic acid on OFCs is assumed to be 25% of the effect on neural tube defects.
The regression formula underlying the effect on neural tube defects is given in the NTD Calculator in this Toolkit.
** Not considering the effects of other interventions on prevalence.

[1](Present estimated prevalence-(1.07*coverage*0.25)+(0.15*ppm*coverage*0.25))/(1-0.88*coverage*0.25)))
[2]((0.25*(Baseline OFC-(1.07*coverage+0.12*baseline OFC*coverage-0.15*dosage*coverage+baseline-baseline*coverage))))
[3]Baseline OFC prevalence – estimated reduction in OFC after fortification

OFC Interventions 2: Effect of folic acid supplementation

Effect of supplementation (with no fortification)		Notes
Baseline prevalence with no folic acid intervention (per 1000 TB)		This can be taken from the appropriate cell above
Maximum proportional reduction (assuming 100% coverage)	0.18	This value is fixed at 0.18
Population supplementation coverage		Range: 0 to 1
Actual proportional reduction	0	Maximum proportional reduction x Coverage
Actual prevalence reduction (per 1000 TB)	0.000	Baseline incidence x Actual proportional reduction

New prevalence	**0.000**	Baseline prevalence with no intervention -((Maximum prop. Reduction x Pop. Supp. Coverage) X Baseline prevalence)
% prevalence reduction	#DIV/0!	1-(New prevalence/Baseline prevalence)
Absolute prevalence reduction (per 1000 TB)	0.000	Baseline prevalence – New prevalence

Now you can see below the potential combined effect of folate fortification and supplementation:

Additional effect of supplementation, given fortification		This value can be changed.

	New prevalence	
After fortification		This can be taken from the appropriate cell (resulting OFC prevalence)
After supplementation	0.000	Requires input in blank cells above
After fortification and supplementation[1]		Requires input in blank cells above

TB = total births (live births + still births)
OFC = orofacial clefts

[1]Prevalence after fortification-(Additional effect of supplementation*prevalence after supplementation)

Belgium
Preconception care and screening
Effect of immunisation on rubella incidence in women

Baseline prevalence of rubella in women aged 15-44 per 1000		
Variables		
Coverage of rubella immunisation		Range: 0 to 1
Proportion of women of reproductive age receiving immunisation		Range: 0 to 1
Effectiveness of immunisation (proportion of cases prevented among those immunised)		Range: 0 to 1
Results		
% prevalence reduction due to immunisation[1]	0%	
Prevalence reduction due to immunisation, per 1000 women aged 15-44[2]	0.000	
Final prevalence of rubella in women aged 15-44 per 1000[3]	0.000	

TB = total births (live births + still births)

[1](Coverage of immunisation X Proportion of women receiving immunisation) X Effectiveness of immunisation
[2]% prevalence reduction due to immunisation X Baseline prevalence of rubella in women
[3]Baseline prevalence of rubella in women – Prevalence reduction due to immunisation

Belgium
Preconception care and screening
Effect of preconception screening and treatment on incidence of syphilis

Baseline prevalence of syphilis in pregnancy per 1000 TB		
Variables		
Coverage of preconception screening		Range: 0 to 1
Proportion of diagnosed cases receiving timely treatment		Range: 0 to 1
Effectiveness of treatment (proportion of cases prevented among those treated)		Range: 0 to 1
Results		
% prevalence reduction due to PCCS & treatment[1]	0%	
Prevalence reduction due to PCCS & treatment, per 1000 TB[2]	0.000	
Final prevalence of syphilis in pregnancy after PCCS & treatment, per 1000 TB[3]	0.000	

PCCS = preconception care and screening
TB = total births (live births + still births)

[1](Coverage of screening X Proportion of women receiving treatment) X Effectiveness of treatment
[2]% prevalence reduction due to PCCS and treatment X Baseline prevalence of syphilis in pregnancy
[3]Baseline prevalence of syphilis in pregnancy – Prevalence reduction due to PCCS and treatment

Belgium
Preconception care and screening
Effect of preconception care on congenital disorders caused by teratogens

Baseline prevalence of teratogen-induced congenital disorders per 1000 total births (live + still)		
Variables		
Proportion of women reducing teratogen risk to safe levels prior to pregnancy		Range: 0 to 1
Effectiveness of interventions on the outcome		Range: 0 to 1
Results		
% prevalence reduction due to intervention per 1000 total births[1]	0%	
Final prevalence of teratogen-induced congenital disorders per 1000 births[2]	0.000	

[1]Proportion of women reducing teratogen risk to safe levels prior to pregnancy x Effectiveness if outcome
[2]Baseline prevalence - (% prevalence reduction due to intervention X Baseline prevalence)