PHG Needs Assessment Calculator Romania Congenital Heart Disease

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(There is no sheet CHD-NA2.)

Note: The Calculator sheets already contain modelled estimates from the PHGDB; note that these estimates do not include CHD associated with chromosomal disorders (e.g. Down's syndrome) and other non-cardiac malformations.

Romania 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		Yo	ur estimat	es	Cho	sen estima	ates
Age group	Male	Female	Total	Male	Female	Total	Male	Female	Total
0-4 years	54848	54878	109726			0			0
5-9 years	56184	55808	111992			0			0
10-14 years	54874	56623	111497			0			0
15-19 years	50251	50414	100665			0			0
20-24 years	42768	45046	87814			0			0
25-29 years	33775	36561	70336			0			0
30-34 years	25575	26731	52306			0			0
35-39 years	20725	23016	43741			0			0
40-44 years	14817	19187	34004			0			0
45-49 years	12788	16439	29227			0			0
50-54 years	10418	12444	22862			0			0
55-59 years	8337	9733	18070			0			0
60-64 years	6706	10012	16718			0			0
65+ years	13188	20897	34085			0			0
Total	405254	437789	844223	0	0	0	0	0	0
Female population aged 15-44 years		200955			-			-	
Data year		2007 reporte	ed 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	10.29	Unicef, 2013				
Still birth rate (SB): Still births (SB) / year / 1000 total births	4.18	WHO, 2009				
Total births in 1000s (LB+SB) per year	221	Unicef, 2013				
Infant mortality rate: infant deaths / 1000 LB / year	10.8	Unicef, 2013				
Under-5 mortality rate: U5 deaths / 1000 LB / year	12.5	Unicef, 2013				
Percentage births in women >35 years						
Life expectancy at birth (yrs)	73.98	Unicef, 2013				
% of marriages consanguineous						

	Estimate	Source, Year	Your	Source,	Chosen	Source,
Maternal health			estimate	Year	estimate	Year
Prenatal visits – at least 1 visit (%)	93.5	Unicef, 2013				
Prenatal visits – at least 4 visits (%)	76.0	Unicef, 2013				
Births attended by skilled health personnel (%)	98.7	Unicef, 2013				
Contraception prevalence rate (%)	70.3	Unicef, 2013				
Unmet need for family planning (%)	11.9	WHO, 2004				
Total fertility rate	1.40	Unicef, 2013				
% home births						
% births at health care services	97.80	Unicef, 2013				
	Estimate	Source, Year	Your	Source,	Chosen	Source,
Newborn health			estimate	Year	estimate	Year
Number of neonatal examinations by SBA / trained staff						
% neonatal examinations by SBA/ trained staff						

Socio-economic indicators	Estimate	Source, Year		Chosen estimate	Source, Year
Gross national income per capita (PPP int. \$)	15140.00	Unicef, 2013			
% population living on < US\$1 per day	<2.0	Unicef, 2013			
Birth registration coverage (%)	>90	WHO 2011			
Death registration coverage (%)	90-100	WHO, 2009			

LB = live births

PPP = purchasing power parity SBA = skilled birth attendant

Romania 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. \$)	901.5	WHO 2011				
Total expenditure on health as percentage of GDP	5.8	WHO 2011				
Per capita government expenditure on health (PPP int. \$)	723.2	WHO 2011				
External resources for health as percentage of total expenditure on health	46.3	WHO 2011				
General government expenditure on health as percentage of total expenditure on health	80.2	WHO 2011				
Out-of-pocket expenditure as percentage of private expenditure on health	98.2	WHO 2011				
Private expenditure on health as percentage of total expenditure on health	19.8	WHO 2011				
General government expenditure on health as percentage of total government expenditure	11.9	WHO 2011				

		Source,	Your	Source,	Chosen	Source,
Health Workforce	Estimate	Year	estimate	Year	estimate	Year
Number of nursing and midwifery personnel	90698	WHO, 2006				
Nursing and midwifery personnel density (per 10,000 population)	41.9	WHO, 2006				
Number of physicians	41455	WHO, 2006				
Physician density (per 10,000 population)	19.166	WHO, 2006				
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 facillities for safe terminations of pregnancies for fetal defects						

PPP = purchasing power parity GDP = gross domestic product

SBA = skilled birth attendant

CD = congenital disorders

Romania
Congenital Heart Disease
CHD Epidemiology 1.1: Country epidemiology

Epidemiological indicator	Your estimates	Range	PHGDB minimum estimates	Chosen estimates	Range	Source
Year of estimate						
Prevalence at birth and by age-group (/100	0)					
Live birth prevalence (LB)			3.25			
Stillbirth prevalence (SB)			0.05			
Total birth prevalence (LB+SB)			3.30			
All age groups						
<1 year old						
1-4 year olds						
5-14 year olds						
15-44 year olds						
45+ year olds						
Number of cases by age group						
Annual live births			714			
All age groups						
<1 year olds						
1-4 year olds						
5-14 year olds						
15-44 year olds						
45+ year olds						
No. of cases by level of impairment						
No or minor disability						
Moderate disability*						
Severe disability*						
Mortality and morbidity						
Mean life expectancy (yrs)			42.6			
No. deaths < 1yr			187			
No. deaths 1-4 yrs			10			
No. deaths < 5 yrs			196			
Infant mortality / 1000 LB			0.85			
Under-5 mortality / 1000 LB			0.89			
Years of life lost						
LD Bus binths OD stillbinths * Madanata sanara as a						. 196-1

LB = live births; SB = stillbirths * Moderate = compensated cardiac problems, premature death preceded by average 1 year, and/or exertional disability. Severe = lifelong exertional disability

CHD: Epidemiology 1.2: International comparison

	Your chosen	Comparison		
Epidemiological indicator	estimates	Country	Region	World
Prevalence at birth and by age-group (/1000 p	eople)		(Europe, Central)	
Live birth prevalence (LB)		3.25	3.26	3.24
Stillbirth prevalence (SB)		0.05	0.03	0.02
Total birth prevalence (LB+SB)		3.30	3.29	3.26
All age groups				
<1 year olds				
1-4 year olds				
5-14 year olds				
15-44 year olds				
45+ year olds				
Number of cases by age-group				
Annual live births		714	4,014	434,904
All age groups				
<1 year olds				
1-4 year olds				
5-14 year olds				
15-44 year olds				
45+ year olds				
No. cases by level of impairment				
No or minor disability				
Moderate disability*				
Severe disability*				
Mortality and morbidity				
Mean life expectancy (yrs)		42.6	65	29
No. deaths < 1yr		187	729	210,093
No. deaths 1-4 yrs		10	60	5,002
No. deaths < 5 yrs		196	789	215,094
Infant mortality / 1000 LB		0.85	0.18	0.48
Under-5 mortality / 1000 LB		0.89	0.20	0.49
Years of life lost				

LB = live births; SB = stillbirths * Moderate = compensated cardiac problems, premature death preceded by average 1 year, and/or exertional disability. Severe = lifelong exertional disability

Congenital Heart Disease

CHD Epidemiology 2.1: Data on affected pregnancies: Research studies

Study author, year, site	Sample size	Study quality and representativeness	Main findings

Based on the studies listed above (or in section CHD-E2.1 of the Tool), enter the best estimates for the prevalence of affected births, still births and terminations in the country, and a range of values to reflect uncertainty or within-country variation.

If studies are not representative of the national population you may need to weight your data (see the Guide for explanation on weighting and help with the calculations).

Estimates for the total country/territory	Number of affected live births	LB prevalence / 1000 TB	Comments
Best estimate			
Lower estimate			
Higher estimate			
Estimates for the total country/territory	Number of affected stillbirths	SB prevalence / 1000 TB	Comments
Best estimate			
Lower estimate			
Higher estimate			
Estimates for the total country/territory	Number of terminations of pregnancy due to condition	ToP / 1000 TB	Comments
Best estimate			
Lower estimate			
Higher estimate			

Congenital Heart Disease

CHD Epidemiology 2.2: Data on affected pregnancies: Surveillance

Based on surveillance data, enter the best estimates for the prevalence of the condition in live births, stillbirths and pregnancy terminations in the country. Give a range of values to reflect uncertainty and within-country variation, and use comments for information on data quality, uncertainty and representativeness.

If studies are not representative of the national population you may need to weight your data (see the Guide for explanation on weighting and help with the calculations).

Estimates for the total country/territory	Number of affected live births	Birth prevalence / 1000	Comments
Best estimate			
Lower estimate			
Higher estimate			

	Number of affected stillbirths	Stillbirth prevalence / 1000 TB	Comments
Best estimate			
Lower estimate			
Higher estimate			

	Number of ToP due to condition	ToP / 1000 TB	Comments
Best estimate			
Lower estimate			
Higher estimate			

Congenital Heart Disease

CHD Epidemiology 2.3: Data on affected pregnancies: Other sources

	Source 1:	Source 2:	Notes
Enter year and source of data – use last year with information available.			
Basic Numbers			
Number of affected live births / year, from data source			
Total number of live births / year, from data source			
Number of affected still births / year, from data source			
Total number of stillbirths / year, from data source			
Number of ToP for affected fetus / year from data source			
Total number of affected births / year (live and still)		0	
Total number of births / year, from data source		0	
Total number of ToP / year, from data source			
Total number of women aged 15-44			
Live birth prevalence: recorded and estimated			
Recorded live birth prevalence (affected recorded live births / 1000 recorded total births)	#DIV/0)! #DIV/0!	
Estimated completeness of recording: what proportion of true affected live births in your data source were recorded?			Range: 0 to 1
Estimated coverage of recorded live births (number of recorded live births / total live births in country or territory)			Range: 0 to 1
Estimated live birth prevalence (recorded prevalence / completeness)	#DIV/0)! #DIV/0!	
Estimated true number of affected live births in data source (number of recorded affected live births / completeness)	#DIV/0)! #DIV/0!	
Estimated number of affected live births in total population (number of affected live births from data source / (coverage x completeness))	#DIV/0	#DIV/0!	
Stillbirth prevalence: recorded and estimated			
Recorded stillbirth prevalence (affected recorded still births / 1000 recorded total births)	#DIV/0)! #DIV/0!	
Estimated completeness of recording: what proportion of true affected stillbirths in your data source were recorded?			Range: 0 to 1
Estimated coverage of recorded stillbirths (number of recorded still births / total still births in country or territory)			Range: 0 to 1
Estimated stillbirth prevalence (recorded prevalence / completeness)	#DIV/0)! #DIV/0!	
Estimated true number of affected stillbirths in data source (number of recorded affected still births / completeness)	#DIV/0)! #DIV/0!	
Estimated number of affected stillbirths in total population (number of affected still births from data source / (coverage x completeness))	#DIV/0	#DIV/0!	

ToP prevalence: recorded and estimated			
Recorded ToP prevalence (ToP in affected fetuses / 1000 women aged 15-44)	#DIV/0!	#DIV/0!	
Estimated completeness of recording: what proportion of true affected pregnancy terminations in your data source were recorded?			Range: 0 to 1
Estimated coverage of recorded ToP (number of recorded ToP / total ToP in country or territory)			Range: 0 to 1
Estimated ToP prevalence (recorded prevalence / estimated completeness)	#DIV/0!	#DIV/0!	
Estimated true number of ToP in data source (number of recorded ToP / completeness)	#DIV/0!	#DIV/0!	
Estimated number of ToP in total population (number of ToP from data source / (coverage x completeness))	#DIV/0!	#DIV/0!	

Based on the sources above, enter the best prevalence estimates for your population, and a range of values to reflect uncertainty of estimates and within country variation.

If studies are not representative of the national population you may need to weight your data (see the Guide for explanation on weighting and help with the calculations).

Estimates for the whole country/territory	Number of affected live births	LB prevalence / 1000 TB
Best estimate		
Lower estimate		
Higher estimate		
Estimates for the whole country/territory	Number of affected still births	SB prevalence / 1000 TB
Best estimate		
Lower estimate		
Higher estimate		
Estimates for the whole country/territory	Number of ToP due to condition	ToP /1000 TB
Best estimate		
Lower estimate		
Higher estimate		

Romania Congenital Heart Disease CHD Epidemiology 2.4: Summary of affected pregnancies

Indicator	Your estimates	Range	PHGDB minimum estimates	Chosen estimates	Range	Source
Number of annual affected live births			714			
Annual birth prevalence / 1000 TB			3.25			
Number of annual affected still births			3			
Stillbirth prevalence / 1000 TB/year			0.05			
Number of terminations of pregnancy in affected fetuses /year						
Affected ToP / 1000 TB]

If there are specific sub-types of condition, you can repeat this exercise below. However, you should consider (a) whether sub-types would have different implications for advocacy, and (b) whether a sub-type might require a full, specific needs assessment.

Congenital Heart Disease

CHD Epidemiology 2.5: Sub-population variation in affected pregnancies

If the birth prevalence rates vary by population sub-group (e.g. geographically or by another factor), indicate any population groups with different prevalence estimates from the whole population and describe reasons for variation. If a group is substantially different from the general population, you may wish to conduct a needs assessment for that group alone.

Population sub- group	Number of affected live births	LB prevalence / 1000 TB	Reason for variation

Population sub- group	Number of affected stillbirths	SB prevalence / 1000 TB	Reason for variation

•	Number of ToP in affected pregnancies	ToP prevalence / 1000 TB	Reason for variation

CHD Epidemiology 3.1: Mortality data: Research studies

Source, year, site	Sample size	Age group	Study quality and representativeness	Main findings

Based on the studies above, enter the best estimates for the specific mortality by age-group e.g. infant, under-5s, etc., as appropriate, and a range of values to reflect uncertainty of estimates and within-country variation.

If studies are not representative of the national population you may need to weight your data (see the Guide for explanation on weighting and help with the calculations).

Mortality estimates	Number of deaths	Ratio (deaths / 1000 LB)	Comments
Neonatal group (<28 days)			
Best estimate			
Lower estimate			
Higher estimate			
Infant group (<1 year)			
Best estimate			
Lower estimate			
Higher estimate			
Under-5 group (<5 years)			
Best estimate			
Lower estimate			
Higher estimate			
Other age group:			
Best estimate			
Lower estimate			
Higher estimate			

LB = live births

CHD Epidemiology 3.2: Mortality data: Vital registration data

Fill in the blank cells based on your vital registration data.		
Enter year and source of data		
Registered data		
Total registered live births		
Registered condition-specific neonatal deaths (first 28 days of life)		
Registered condition-specific infant deaths (first year of life)		
Registered condition-specific under-5 deaths (first 5 years of life)		
Registered condition-specific neonatal mortality ratio	#DIV/0!	
(condition-specific neonatal deaths / 1000 live births in the same year)		
Registered condition-specific infant mortality (condition-specific infant deaths / 1000 live births in the same year)	#DIV/0!	
Registered condition-specific under-5 mortality (condition-specific under-5 deaths / 1000 live births in the same	#DIV/0!	
year)		

Adjustment for under-ascertainment of cause of death and sub-registration of deaths: Enter estimates in the highlighted cells. It is not always possible to adjust the estimates, in which case you may give the value '1', accepting that the estimates in these cases will usually be biased towards low values. (Or you may move to the next section.) It is assumed that under-ascertainment is stable across age-groups; if ascertainment varies by age-group, you could use separate estimates for each age group.

Estimated completeness of recording: what proportion of deaths in affected persons were registered as such?		Range: 0 to 1
Population coverage: what proportion of the total country/territory population is covered by the vital registration?		Range: 0 to 1
Death ascertainment (population coverage x completeness)	0	
Estimated values for the total country/ territory population		
Estimated number of live births in total population	#DIV/0!	
Estimated number of neonatal deaths in total population (number of deaths registered in neonatal period / ascertainment)	#DIV/0!	
Estimated number of infant deaths in total population (number of deaths registered in first year of life / ascertainment)	#DIV/0!	
Estimated number of under-5 deaths in total population (number of deaths registered in under-5s / ascertainment)	#DIV/0!	
Estimated neonatal mortality ratio (estimated neonatal deaths / 1000 live births)	#DIV/0!	
Estimated infant mortality ratio (estimated infant deaths / 1000 live births)	#DIV/0!	
Estimated under-5 mortality ratio (estimated under-5 deaths / 1000 live births)	#DIV/0!	

CHD Epidemiology 3.3: Mortality data: Other sources

Source, year, site	Sample size	Data quality and representativeness	Main findings

Based on data from the sources above, enter estimates for the disease-specific deaths and mortality rates in your population.

If studies are not representative of the national population you may need to weight your data (see the Guide for explanation on weighting and help with the calculations).

	Neonatal mortal	Il mortality Infant mortality		Under-5 mortalit	У	
Estimates for the total country/territory	Value	Ratio/1000 LB	Value	Ratio/1000 LB	Value	Ratio/1000 LB
Best estimate						
Lower estimate						
Higher estimate						

Romania Congenital Heart Disease CHD Epidemiology 3.4: Summary mortality estimates

Indicator	Your estimates	Range	PHGDB minimum estimates	Chosen estimates	Range	Source
Year of data collection						
Number of annual deaths in affected persons						
Number of annual live births (in 1000s)			220			
Number of annual affected neonatal deaths			105			
Number of affected neonatal deaths / 1000 LB			0.48			
Number of annual affected infant deaths			187			
Number of affected infant deaths / 1000 LB			0.85			
Number of annual affected under-5 deaths			196			
Number of affected under-5 deaths / 1000 LB			0.89			
Mean life expectancy at birth in affected people			42.6			
Other indicators (e.g. survival following surgical procedure, etc)						

Romania Congenital Heart Disease CHD Epidemiology 3.5: Sub-population variation in mortality

Age group: neonatal Population sub-group	Cause-specific, group-specific neonatal mortality ratio / 1000 LB	Reason for variation

		Cause-specific, group-specific infant	Reason for variation
Population sub-group	affected persons	mortality ratio / 1000 LB	

			Reason for variation
Population sub-group	affected persons	under-5 mortality ratio / 1000 LB	

Age group:		, , , , , , , , , , , , , , , , , , , ,	Reason for variation
Population sub-group	affected persons	mortality ratio / 1000 population	

CHD Epidemiology 4.1: Population prevalence: Research studies

Study, year, site	Sample size	Study quality and representativeness	Main findings

Based on the studies above, enter the best estimates for population prevalence, and a range of values to reflect uncertainty of estimates and within-country variation.

If studies are not representative of the national population you may need to weight your data (see the Guide for explanation on weighting and help with the calculations).

	Prevalence / 1000 persons	Range	Comments
Best estimate			
Lower estimate			
Higher estimate			

CHD Epidemiology 4.2: Population prevalence: Other sources

•	Source, year, site	Data quality and representativeness	Main findings

Based on data from the sources above, enter estimates for the disease-specific deaths and mortality rates in your population.

If studies are not representative of the national population you may need to weight your data (see the Guide for explanation on weighting and help with the calculations).

	Prevalence / 1000 persons	Range	Comments
Best estimate			
Lower estimate			
Higher estimate			

CHD Epidemiology 4.3: Summary of population prevalence

Source of estimates	Estimated total population number of affected persons	Range	Estimated total population prevalence / 1000 persons	Range
1				
2				
3				
4				
5				
PHGDB				
Chosen estimates				

Romania Congenital Heart Disease CHD Epidemiology 4.4: Sub-population prevalence variation

Population sub-group	Number of affected people	 Population prevalence per 1000 people	Reason for variation
		#DIV/0!	

If there are specific sub-types of condition, you can repeat this exercise (copy table and paste below). However, you should consider (a) whether sub-types would have different implications for advocacy, and (b) whether a sub-type might require a full, specific needs assessment.

Formula in column D: Number of affected people/ (Total number of people in population subgroup/1000)

Congenital Heart Disease

CHD Interventions 1: Effect of folic acid fortification

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 Estimated reduction in CHDs through folic acid fortification, per 1000	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 regression formula underlying the effect on neural tube defects is given in the NTD Calculator in this Toolkit.

^{*} The effect of folic acid on CHD is assumed to be 25% of the effect on neural tube defects.

^{**} 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))))

³Baseline CHD prevalence – estimated reduction in CHD after fortification

Congenital Heart Disease

CHD Interventions 2: Effect of folic acid supplementation

This sheet allows you to estimate the potential reduction in CHD 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 in the previous sheet.
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		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

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

²If New prevalence after fortification < minimum prevalence then use (Baseline prev – min prevalen)/baseline prevalence)

Otherwise use: (Baseline prevalence – new prevalence after fortification and supplementation)/baseline prevalence

Congenital Heart Disease

CHD Interventions 3: Effect of prenatal screening and pregnancy management

Baseline prevalence: fetuses affected by CHD, per 1000 TB		See previous sheet. Use baseline prevalence either before or after folic acid fortification and supplementation.
Variables		
Coverage of prenatal screening		Range: 0 to 1
Proportion of diagnosed pregnancies receiving treatment*		Range: 0 to 1
Effectiveness of treatment		Range: 0 to 1
Results		
Proportional reduction of uncontrolled cases of CHD through PNS and treatment ¹	0%	
Prevalence of uncontrolled CHD after PNS and treatment, per 1000 total births ²	0.000	
Final prevalence: affected live births after PNS & treatment, per 1000 total births ³	0.000	

PNS = prenatal screening
TB = total births (live births + still births)
CHD = congenital heart disease

*Treatment in this case refers to diagnosis and appropriate management of pregnancy

¹Coverage of screening X Proportion of diagnosed pregnancies receiving treatment X Effectiveness of treatment

²Proportional reduction of uncontrolled cases x Baseline prevalence

³Baseline prevalence – prevalence of uncontrolled CHD

CHD Interventions: Effect of prenatal screening and pregnancy termination

Assumption: prenatal services are equally used for cases which would lead to still births and live births.

This could overestimate the impact of ToP if in fact ToP is more likely for severe cases that would result in stillbirth.

Conversely, the impact of ToP could be underestimated if screening is only available to high-income women at lower risk.

100% specificity of prenatal diagnosis assumed.

Baseline prevalence, per 1000 TB (LB + SB)		See previous two sheets. Use baseline either before or after folic acid interventions.
Variables		
Coverage of prenatal screening		Range: 0 to 1
Proportion of screen-positive cases receiving diagnosis		Range: 0 to 1
Proportion of diagnosed cases ending in pregnancy termination		Range: 0 to 1
Results		
% prevalence reduction due to PND & pregnancy termination ¹	0%	
Prevalence reduction due to PND & pregnancy termination, per 1000 TB ²	0.000	
Final birth prevalence of CHDs after PND & pregnancy termination, per 1000 TB ³	0.000	

PNS = prenatal screening

ToP = termination of pregnancy

TB = total births (live births + still births)

¹Coverage of screening X Proportion of screen-positive cases receiving diagnosis x Proportion of cases ending in pregnancy termination

²% prevalence reduction due to PND and termination x Baseline prevalence

³Baseline prevalence – Prevalence reduction due to PND & termination

Congenital Heart Disease

CHD Needs Assessment Calculator 1: Quantitative baseline

Table CHD-NA1a Burden of Neural Tube Defects in pregnancy, at birth and at population level

	Chosen estimates			Notes
Indicator	Number (n)	I .	Range of prevalence (/1000 TB)	
Annual affected live births (LB)	0	0	0	Drawn from sheet E2.4
Annual affected stillbirths (SB)	0	0	0	Drawn from sheet E2.4
Annual affected births (LB+SB)	0	0		Drawn from sheet E2.4
Annual affected persons (all age	0	0	0	Drawn from sheet E1.1
groups)				

Table CHD-NA1b Neural Tube Defects mortality indicators

	Chosen estimates			Notes
Indicator	Number (n)	I .	Range of prevalence (/1000 TB)	
Annual overall mortality	0			Drawn from sheet E3.4
Annual neonatal mortality	0	0	0	Drawn from sheet E3.4
Annual infant mortality	0	0	0	Drawn from sheet E3.4
Annual under-5 mortality	0	0	0	Drawn from sheet E3.4
Mean life expectancy at birth among affected people	0		0	Drawn from sheet E3.4

TB = total births (live births + stillbirths)

Congenital Heart Disease

CHD Needs Assessment Calculator 3: Quantitative assessment of interventions

Table CHD-NA3a		Estimated prevalence in the absence of interventions for Neural Tube Defects		
Indicator	Number (n)	Number (n) Prevalence (n/1000)		
Potential live births				
Potential still births				

Table CHD-NA3b	Current situation in relation to interventions before birth			
Intervention	Coverage (%)	Cases averted (n)	Cases averted/1000 TB	
Effect of family planning, education				
Effect of multivitamin and folic acid supplementation				
Control of teratogens				
Management of diseases in pregnancy, e.g diabetes				
Rubella prevention				
Effect of prenatal diagnosis				
Overall effect				

Table CHD-NA3c	Target situation in relation to interventions before birth				
Intervention	Coverage (%)	Cases averted (n)	Cases averted/1000 TB		
Effect of family planning, education					
Effect of multivitamin and folic acid supplementation					
Control of teratogens					
Management of diseases in pregnancy, e.g diabetes					
Rubella prevention					
Effect of prenatal diagnosis					
Overall effect					

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Table CHD-NA3d	Current situation in relation to interventions after birth				
Intervention	Coverage (%)	Cases managed (n)	Cases managed/1000 TB		
Effect of newborn screening					
Effect of newborn diagnosis					
Effect of echocardiography services					
Effect of primary care diagnosis					
Effect of paediatric cardiology					
Effect of paediatric cardiac surgery					
Effect of acute clinical care					
Effect of social care and support					
Effect of rehabilitation					
Overall effect					

Table CHD-NA3e	Target situation in relation to interventions after birth				
Intervention	Coverage (%)	Cases managed (n)	Cases managed/1000 TB		
Effect of newborn screening					
Effect of newborn diagnosis					
Effect of echocardiography services					
Effect of primary care diagnosis					
Effect of paediatric cardiology					
Effect of paediatric cardiac surgery					
Effect of acute clinical care					
Effect of social care and support					
Effect of rehabilitation					
Overall effect					

Table CHD-NA3f	Current and desired outo	omes			
	Current situation		Target situation		
Indicator	Annual number (n)	Prevalence (n/1000)	Annual number (n)	Prevalence (n/1000)	
Estimated affected pregnancies					
Live births (LB)	0	0			
Stillbirths (SB)	0	0			
Total births (LB+SB)	0	0			
Estimated population prevalence					
All age groups					
Estimated mortality / 1000 live births					
Neonatal deaths	0	0			
Infant deaths	0	0			
Under-5 deaths	0	0			

TB = total births (live births + stillbirths)