PHG Needs Assessment Calculator Sri Lanka 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.

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Sri Lanka 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	Estir	nates		Yc	ur estimat	es	Cho	osen estim	ates
Age group	Male	Female	Total	Male	Female	Total	Male	Female	Total
0-4 years	15457	15111	30568			0			0
5-9 years	13617	12971	26588			0			0
10-14 years	15735	14744	30479			0			0
15-19 years	19603	18165	37768			0			0
20-24 years	20664	20034	40698			0			0
25-29 years	17355	18125	35480			0			0
30-34 years	12201	12832	25033			0			C
35-39 years	10253	10737	20990			0			C
40-44 years	8959	9481	18440			0			C
45-49 years	7950	8085	16035			0			C
50-54 years	6912	6692	13604			0			C
55-59 years	4104	3747	7851			0			C
60-64 years	2934	2739	5673			0			C
65+ years	8605	7323	15928			0			C
Total	164349	160786	325135	0	0	0	C	0	C
Female population aged 15-44 years		89374			-			-	
Data year	in 2011								·
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
Γ			

PHG FOUNDATION	Demography	VERSION 1.1, SEPTEMBER 2013
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Fertility and mortality	Estimate	Source, Year	Your estimate	Source, Year	Chosen estimate	Source, Year
Crude birth rate: live births (LB) / year / 1000 population	17.76	Unicef,				
Still birth rate (SB): Still births (SB) / year / 1000 total births	17.28	WHO, 2009				
Total births in 1000s (LB+SB) per year	373	Unicef,				
Infant mortality rate: infant deaths / 1000 LB / year	10.5	Unicef,				
Under-5 mortality rate: U5 deaths / 1000 LB / year	12.2	Unicef,				
Percentage births in women >35 years						
Life expectancy at birth (yrs)	74.94	Unicef,				
% of marriages consanguineous						

Maternal health	Estimate	Source, Year	Your estimate	Source, Year	Chosen estimate	Source, Year
Prenatal visits – at least 1 visit (%)	99.4	Unicef,				
Prenatal visits – at least 4 visits (%)	92.5	Unicef,				
Births attended by skilled health personnel (%)	98.6	Unicef,				
Contraception prevalence rate (%)	68.4	Unicef,				
Unmet need for family planning (%)	7.3	WHO, 2007				
Total fertility rate	2.29	Unicef,				
% home births						
% births at health care services	98.20	2013				
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. \$)	5560	Unicef,				
% population living on < US\$1 per day	14	Unicef,				
Birth registration coverage (%)	97.2	WHO 2006-				
Death registration coverage (%)	50-74	WHO, 2003				

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

Sri Lanka 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

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.

		Source,	Your	Source,	Chosen	Source,
Health Expenditure	Estimate	Year	estimate	Year	estimate	Year
Per capita total expenditure on health (PPP int. \$)	191.4	WHO 2011				
Fetalaxiee golivera nentealte asiraccentaggiaf (PPP	3.4	WHO 2011				
int. \$)	85.4	WHO 2011				
External resources for health as percentage of total expenditure on health	50.8	WHO 2011				
General government expenditure on health as percentage of total expenditure on health	44.6	WHO 2011				
Out-of-pocket expenditure as percentage of private expenditure on health	83	WHO 2011				
Private expenditure on health as percentage of total expenditure on health	55.4	WHO 2011				
General government expenditure on health as percentage of total government expenditure	7.2	WHO 2011				

		Source,	Your	Source,	Chosen	Source,
Health Workforce	Estimate	Year	estimate	Year	estimate	Year
Number of nursing and midwifery personnel	40678	WHO, 2007				
Nursing and midwifery personnel density (per 10,000 population)	19.3	WHO, 2007				
Number of physicians	10279	WHO, 2006				
Physician density (per 10 000 population)	4.92	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 motherware agestis 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

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				
Eହନ୍ୟର୍ଗାତ୍ୟବୀ teratogenic prescribed and non-prescribed				
Byskiniges				
Rubella susceptibility				
Rubella infection				
Other infections (e.g. CMV or				
₩Whol consumption				
Tobacco use				
Advanced maternal age (>35)				
lodine deficiency				
Folate deficiency				
Other risk factors				

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

Sri Lanka
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

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 Baseline CHD prevalence per 1000 TB, with no folic acid	Range: 0 to 1
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		Range: 0 to 1
	0.000	Do not delete this value!
Result Hig prevalence of CHDs after folic acid fortification, per 1000	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.

<sup>\*</sup> The effect of folic acid on CHD is assumed to be 25% of the effect on neural tube defects.

<sup>\*\*</sup> Not considering the effects of other interventions on prevalence.

<sup>&</sup>lt;sup>1</sup>(Present estimated prevalence-(1.07\*coverage\*0.25)+(0.15\*ppm\*coverage\*0.25))/(1-0.88\*coverage\*0.25)))

<sup>&</sup>lt;sup>2</sup>((0.25\*(Baseline CHD-(1.07\*coverage+0.12\*baseline CHD\*coverage-0.15\*dosage\*coverage+baseline-baseline\*coverage))))

<sup>&</sup>lt;sup>3</sup>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 reductio

		Baseline prevalence -((Maximum prop. Reduction x Population supplementation coverage) x
New prevalence	0.000	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

Sri Lanka
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 age¹	#DIV/0!	
Birth prevalence attributable to high maternal age, per 1000 TB <sup>2</sup>	-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 <sup>3</sup>	0.86	
Proportional birth prevalence due to high maternal age⁴	0.00	
Birth prevalence attributable to high maternal age, per 1000 TB <sup>5</sup>	0	
Baseline prevalence without maternal age effect		This figure is set at 0.86

TB = total births (live births + still births)

<sup>1</sup>(Birth prevalence – 0.86)/Birth prevalence

<sup>2</sup>Birth prevalence – Baseline prevalence

<sup>3</sup>0.86+(7\*Proportion of mothers aged >35)

<sup>5</sup> Estimated birth prevalence\*Proportional birth prevalence

<sup>&</sup>lt;sup>4</sup> (Estimated birth prevalence- Baseline prevalence)/Estimated birth prevalence

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

Baseline prevalence of tinsare arctification to the birth to the filling aged 15-44 per 1000		
Variables		
Proportion of women reducing alcohol consumption to safe levels before concep	tion	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 <sup>1</sup>	0%	
Final prevalence of unsafe alcohol consumption in women aged 15-44 per 1000 <sup>2</sup>	0.00	
Final prevalence of FASD per 1000 births <sup>3</sup>	0.00	

FASD = fetal alcohol spectrum disorder

<sup>&</sup>lt;sup>1</sup> Prop. Women reducing alcohol consumption x Effectiveness of intervention

<sup>&</sup>lt;sup>2</sup> Baseline prevalence of unsafe alcohol consumption - (% prevalence reduction due to intervention X baseline prevalence of unsafe alcohol consumption)

<sup>&</sup>lt;sup>3</sup> Baseline prevalence of FASD - (% prevalence reduction due to preconception intervention X Baseline prevalence of FASD)

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 Estimated NTD prevalence with this scenario, per 1000	Range: 0 to 1
TB <sup>2</sup> prevalence with this scenario, per 1000	<- Do not modify this cell!
Absolute prevalence reduction with this scenario, per 1000 TB <sup>3</sup>	<- Do not modify this cell!

ppm = parts per million

TB = total births (live births + stillbirths)

 $^1IF(B10="";"";IF(((B10-(1.07*B12)+(0.15*B11*B12))/(1-0.88*B12)) < B15;B15;((B10-(1.07*B12)+(0.15*B11*B12))/(1-0.88*B12))))\\$ 

<sup>2</sup> 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))))

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

See sheet NTD-Appx for explanation of regression.

<sup>\*</sup> Not considering the effects of other interventions on prevalence.

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.	
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		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 preval	ence
After fortification		This value set in sheet NTD-Interv1
After supplementation		
After fortification and supplementation	0.000	Requires input in blank cells above <sup>1</sup>
% reduction	#DIV/0!	Requires input in blank cells above <sup>2</sup>
Final prevalence after fortification and supplementation		

TB = total births (live births + stillbirths)

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

<sup>2</sup>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

Sri Lanka
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  Baseline OFC prevalence per 1000 TB, with no folic acid		Range: 0 to 1
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 <sup>2</sup>	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 regression formula underlying the effect on neural tube defects is given in the NTD Calculator in this Toolkit.

<sup>\*</sup> The effect of folic acid on OFCs is assumed to be 25% of the effect on neural tube defects.

<sup>\*\*</sup> Not considering the effects of other interventions on prevalence.

<sup>&</sup>lt;sup>1</sup>(Present estimated prevalence-(1.07\*coverage\*0.25)+(0.15\*ppm\*coverage\*0.25))/(1-0.88\*coverage\*0.25)))

 $<sup>^2((0.25*(</sup>Baseline\ OFC-(1.07*coverage+0.12*baseline\ OFC*coverage-0.15*dosage*coverage+baseline-baseline*coverage))))$ 

<sup>&</sup>lt;sup>3</sup>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	Maximum proportional reduction x Coverage	
Actual prevalence reduction (per 1000 TB)	0.000 Baseline incidence x Actual proportional reduction	

	Baseline prevalence with no intervention -((Maximum prop.
New prevalence	0.000 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	New prevalence This can be taken from the appropriate cell (resulting OFC
	prevalence)
After supplementation	0.000 Requires input in blank cells above
After fortification and supplementation¹	Requires input in blank cells above

TB = total births (live births + still births)

OFC = orofacial clefts

<sup>1</sup>Prevalence after fortification-(Additional effect of supplementation\*prevalence after supplementation)

Sri Lanka
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	3)	Range: 0 to 1
Results		
% prevalence reduction due to immunisation <sup>1</sup>	0%	
Prevalence reduction due to immunisation, per 1000 women aged 15-44 <sup>2</sup>	0.000	
Final prevalence of rubella in women aged 15-44 per 1000 <sup>3</sup>	0.000	

TB = total births (live births + still births)

<sup>&</sup>lt;sup>1</sup> (Coverage of immunisation X Proportion of women receiving immunisation) X Effectiveness of immunisation

<sup>&</sup>lt;sup>2</sup> % prevalence reduction due to immunisation X Baseline prevalence of rubella in women

<sup>&</sup>lt;sup>3</sup> Baseline prevalence of rubella in women – Prevalence reduction due to immunisation

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 <sup>1</sup>	0%	
Prevalence reduction due to PCCS & treatment, per 1000 TB <sup>2</sup>	0.000	
Final prevalence of syphilis in pregnancy after PCCS & treatment, per 1000 TB <sup>3</sup>	0.000	

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

<sup>&</sup>lt;sup>1</sup> (Coverage of screening X Proportion of women receiving treatment) X Effectiveness of treatment

<sup>&</sup>lt;sup>2</sup>% prevalence reduction due to PCCS and treatment X Baseline prevalence of syphilis in pregnancy

<sup>&</sup>lt;sup>3</sup> Baseline prevalence of syphilis in pregnancy – Prevalence reduction due to PCCS and treatment

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 births¹	0%	
Final prevalence of teratogen-induced congenital disorders per 1000 births <sup>2</sup>	0.000	

<sup>&</sup>lt;sup>1</sup>Proportion of women reducing teratogen risk to safe levels prior to pregnancy x Effectiveness if outcome

<sup>&</sup>lt;sup>2</sup>Baseline prevalence - (% prevalence reduction due to intervention X Baseline prevalence)