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# The Lives Saved Tool


A Computer Program for Making  
Child Survival Projections



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Spectrum System of  
Policy Models

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A Computer Program for Making  
Child Survival Projections

April 2011

## ***LiST MANUAL***

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## INTRODUCTION

Spectrum is a policy modeling system. It contains modules for a number of reproductive health areas. For the purposes of making a national child, maternal or stillbirth, survival estimate, four Spectrum modules are used: 1) DemProj, for the demographic projection; 2) AIM, for the incorporation of the impact of HIV/AIDS on the demographic projection and the impact of treatment upon child survival; 3) FamPlan for the incorporation of lower fertility into the demographic projection and 4) the Lives Saved Tool (LiST), for the projection of child and maternal survival with increasing coverage of child and maternal health interventions.

The LiST program is made up of two modules: EasyLiST and ExpertLiST. EasyLiST is a special feature of the Lives Saved Tool that allows you to use previously prepared child and maternal health and intervention coverage data to quickly make child and maternal survival projections, by simply choosing the interventions and target coverage for each projection you would like to make. ExpertLiST allows for detailed editing of projection inputs such as: intervention coverage by year; baseline health status, child and maternal mortality, abortion, stillbirth, or economic status data; the effectiveness of interventions and the impact of under-nutrition upon mortality.

This manual will first describes the use of the EasyLiST module for making a national child and maternal survival projection, and continue to the ExpertLiST module. This tutorial just provides the information needed to use EasyLiST and ExpertLiST, in addition to basic instructions for compatibility with the AIM and FamPlan modules. The use of the full modules that work in combination with LiST, is described in the following manuals:

- Stover, John. **DemProj. A Computer Program for Making Population Projections.** Washington DC: USAID/ Health Policy Initiative, February 2008.
- DeCormier Plosky, Willyanne; and Stover, John. **AIM. A Computer Program for Making HIV/AIDS Projections and Examining the Demographic and Social Impact of AIDS.** Washington DC: USAID/Health Policy Initiative, May 2009.
- Heaton, Laura; Ross, John; and Stover, John. **FamPlan. A Computer Program for Projecting Family Planning Requirements.** Washington DC: USAID/Health Policy Initiative, February 2006.

The manuals are available for download through the Health Policy Initiative available at: <http://www.healthpolicyinitiative.com/index.cfm?id=software&get=Spectrum>

The LiST module is based on the work of the Bellagio Child Survival Study Group, the Child Health Epidemiology Reference Group (CHERG), and the International Child Development Steering Group. Their work has sought to further specify the global burden of disease and developmental impediments for children under-5 years of age both by region and by cause, and to identify and assess those interventions that will be the most effective in increasing child survival and developmental potential. This work has been

published in the 2003 Lancet series on child survival<sup>1,4</sup>, the 2005 Lancet series on neonatal survival<sup>5,8</sup>, and the 2008 Lancet series on infant and young child nutrition<sup>9-13</sup>.

LiST is a work in progress that is continuously adapting to meet the needs of countries and health organizations. It has recently been revised to allow it to interface with AIM and FamPlan. In addition, further reference to nutrition indicators and interventions, components on maternal health and stillbirths, and the ability to link to an external costing module are now included.

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<sup>1</sup> Black R, Morris S, and Bryce J. “[Child Survival 1] Where and Why are 10 Million Children Dying Every Year?” *Lancet* 2003; 361: 2226-2234;

<sup>2</sup> Jones G, Steketee R, Black R, et al. “[Child Survival 2] How Many Child Deaths Can We Prevent This Year?” *Lancet* 2003; 362: 65-71.

<sup>3</sup> Bryce J, el Arifeen S, Pariyo G, et al. “[Child Survival 3] Reducing Mortality: Can Public Health Deliver?” *Lancet* 2003; 362: 159-164.

<sup>4</sup> Victoria C, Wagstaff A, Armstrong Schellenberg J, et al. “[Child Survival 4] Applying an Equity Lens to Child Survival and Mortality: More of the Same is Not Enough.” *Lancet* 2003; 362: 233-241.

<sup>5</sup> Lawn J, Cousens S, and Zupan J. “[Neonatal Survival 1] 4 Million Neonatal Deaths: Where, When, and Why?” *Lancet* 2005; 365: 891-900.

<sup>6</sup> Darmstadt G, Bhutta Z, Cousens S, et al. “[Neonatal Survival 2] Evidence-Based Cost-Effective interventions: How Many Newborn Babies Can We Save?” *Lancet* 2005; 365: 977-988.

<sup>7</sup> Knippenberg R, Lawn J, Sarmstadt G, et al. “[Neonatal Survival 3] Systematic Scaling up of Neonatal Care in Countries.” *Lancet* 2005; 365: 1087-1098.

<sup>8</sup> Martines J, Paul V, Bhutta Z, et al. “[Neonatal Survival 4] A Call for Action.” *Lancet* 2005; 365: 1189-1197.

<sup>9</sup> Black R, Allen L, Bhutta Z, et al. “[Maternal and Child Undernutrition 1] Maternal and Child Undernutrition: Global and Regional Exposures and Health Consequences.” *Lancet* 2008; 371: 243:260.

<sup>10</sup> Victoria C, Adair L, Fall C, et al. “[Maternal and Child Undernutrition 2] Maternal and Child Undernutrition: Consequences for Adult Health.” *Lancet* 2008; 371: 340-357.

<sup>11</sup> Bhutta Z, Ahmed T, Black R, et al. “[Maternal and Child Undernutrition 3] What Works? Interventions for Child Undernutrition and Survival.” *Lancet* 2008; 371: 417-440.

<sup>12</sup> Bryce J, Coitinho D, Darnton-Hill I, et al. “[Maternal and Child Undernutrition 4] Maternal and Child Undernutrition: Effective Action at National Level.” *Lancet* 2008; 371: 510-526.

<sup>13</sup> Morris S, Cogill B, Uauy R, et al. “[Maternal and Child Undernutrition 5] Effective International Action Against Malnutrition: Why Has it Proven So Difficult and What Can Be Done to Accelerate Progress?” *Lancet* 2008; 371: 608-621.

## METHODOLOGY BEHIND LiST

Choosing an optimum set of child health interventions for maximum mortality impact is important within resource poor policy environments. The Lives Saved Tool (LiST) is a computer model that estimates the mortality and stillbirth impact of scaling up proven maternal and child health interventions. To model the impacts on child health, LiST uses the demographic engine of Spectrum (DemProj), which calculates the numbers of deaths disaggregated by age band, while using neonatal, infant and under-five mortality rates from LiST. It then overlays the AIDS mortality directly related to children from the AIDS Impact Module (AIM), based upon the prevalence of AIDS among the entire population to calculate the total number of deaths due to AIDS. The [non-AIDS] individual causes of death are then overlayed on all of the non-AIDS deaths in children in the neonatal period and the 1-59 month period.

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LiST estimates the mortality impact via five age bands: 0 months, 1-5 months, 6-11 months, 12-23 months and 24 to 59 months. For each of these age bands, reductions in cause specific mortality are estimated by applying intervention effectivenesses and affected fractions to intervention coverage changes. The impacts of interventions are calculated separately for eight causes of death in the neonatal period, and nine causes of death in the 1-59 month period. Corrections are then made to this simple equation to correct for the impact of coverage achieved prior to the projection period. The impact of interventions are calculated in groups such that periconceptual, antenatal and childbirth interventions, sequentially, have the first “opportunity” to prevent mortality, with preventive interventions impacting mortality next and leaving those that are more curative in nature to reduce the remaining mortality that is not reduced. Then each child who is ‘saved’ is then capable of dying of other causes during the subsequent age period.

Simultaneously, nutrition interventions can impact either nutritional status or directly impact mortality. In the former case, LiST acts as a cohort model where current nutritional statuses such as stunting or intra-uterine growth restriction impact the probability of stunting as the cohort ages. LiST links with a demographic projections model (DemProj) to estimate the deaths and deaths averted due to the reductions in mortality rates.

In addition, AIM calculates the impact of PMTCT, Cotrimoxazole and ART for children and then feeds these directly back into the LiST model as deaths averted by these interventions. The Family Planning (FamPlan) and DemProj modules can also feed into the LiST model via changes in the number of births, resulting in varying numbers of child deaths upon which to apply the intervention impacts.

LiST also estimates the impact of interventions on maternal mortality. The calculations are very similar to those for child mortality. One difference is that all women aged 15-49 are treated as a single group in the

calculations, and interventions act directly on one or more of the nine causes of death (i.e., none affect an intermediate nutrition status). Family planning, although not an intervention in LiST, may also impact maternal mortality by reducing the incidence of abortion, which is a maternal cause of death in the LiST model. The reductions in maternal mortality are translated into maternal mortality ratios which are translated into maternal deaths and maternal deaths averted via live births calculated in DemProj.

Finally, LiST estimates the impact of interventions on stillbirths. Different from the other outputs, the reductions are analysed by when the stillbirth occurs in pregnancy – either antepartum or intrapartum. As with maternal mortality, stillbirth reductions are translated into stillbirth rates, and stillbirths via pregnancies in DemProj.

NOTE: For more information on the methodology of LiST, please see  
<http://www.biomedcentral.com/1471-2458/11/S3/S32>

## BASIC STEPS IN USING SPECTRUM

### Step 1: Installing Spectrum

The Spectrum program is distributed on CD-ROM or through the Internet at <http://www.FuturesInstitute.org> or <http://twitter.com/SpectrumModel>. It must be installed on a hard disk before it can be used. Spectrum will operate on any computer running Windows 98 or later version. It requires about 30MB of hard disk space.

Please note, if you are using a Mac operating system you must *already* have Parallels Desktop (<http://www.parallels.com> or <http://www.apple.com>) and Windows operating System installed on your computer to install and run Spectrum. All other programs (including email) must be turned off, and Parallels must be open in full screen mode for Spectrum to run properly. The ability to right-click is needed for Spectrum, which can be done on the Mac by a double-tap on the mousepad.

### Step 2: Changing the Language in Spectrum

The first time you run Spectrum after installing it, all the displays will be in English. You can change to another language by selecting “Options” and “Environment” from the Spectrum menu. Then select the language you want to use and click the “ok” button.

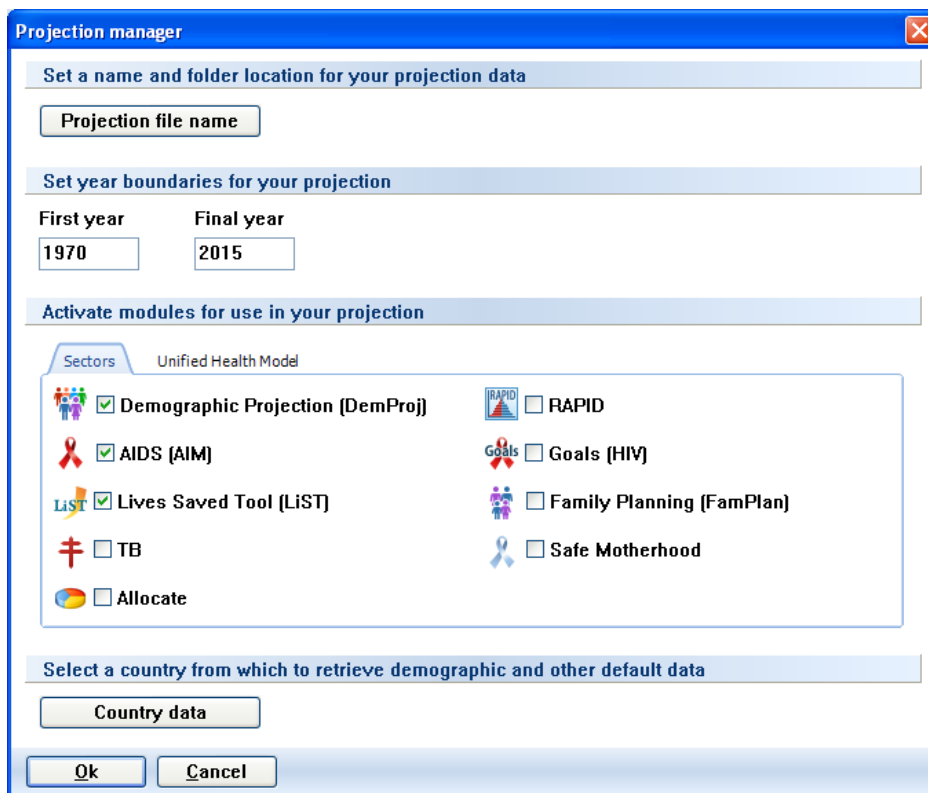
### Step 3: Starting the Spectrum Program

1. To start Spectrum:
2. Click the “Start” button on the task bar.
3. Select “Programs” from the pop-up menu.
4. Select “Spectrum” from the program menu. Alternatively, you can use Windows Explorer to locate the directory “c:\spectrum” and double click on the file named “spectrum.exe.”
5. If you get an error saying that the gdiplus.dll file is missing you may have to download this file from Microsoft. It is included with Microsoft Office and recent versions of Windows, but may not be on computers with Windows 2000 or 98.

### Step 4: Opening a Demographic Projection with Planned Use for the Lives Saved Tool

The Lives Saved Tool in Spectrum requires a demographic projection prepared with DemProj. A completely new demographic projection may be created (as described in Step 4), or the LiST module may be added to an existing demographic projection (as described in Step 5). To create a new demographic projection, begin by:

1. Selecting “New projection” from the Getting started dialogue box. You will then see a projection manager dialogue box similar to the display shown below:



The following information is displayed:

**Projection file name:** This is the name that will be used to store all data files associated with this projection.

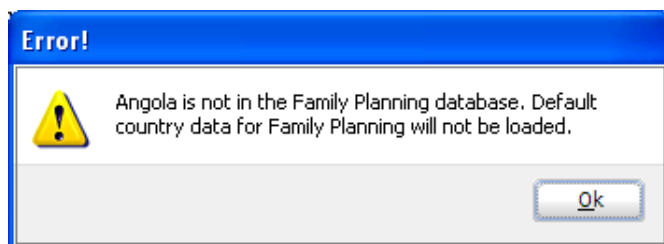
**First year:** This is the first year of the projection.

**Final year:** This is the final year of the projection.

**Active modules:** The check boxes let you select other modules that will be used with the population projection.

2. In the Projection manager dialogue box, click on the projection file name and fill it in, along with the first year of the projection and the last year of the projection. If intending to use AIM, it is a good idea to set the first year of the projection to one or two years before the start of the HIV/AIDS epidemic. For the purposes of the LiST Tool, the end date may be set to 2015, so as to monitor progress in meeting the MDGs, or to a later date for evaluating specific targets set by the country.
3. Check the box next to “Lives Saved Tool (LiST)” to include the Lives Saved Tool. The box next to “AIM” will then be checked automatically. You may also click on the box next to “FamPlan” if you would like to include that module as well.

\*Please note- Some countries do not have default data for FamPlan. If you try to exit the Program manager box after having activated the FamPlan module for a country for which there is no data, you will see the following error:



You will need to then either 1) click on the box next to FamPlan to de-activate it, or 2) complete the FamPlan module using your own data. The LiST program will not be able to run properly without data in an activated FamPlan module for DemProj to draw from and use in projecting child deaths.

4. Click the “EasyProj” button and select your country from the country list. EasyProj is a special feature of DemProj that allows you to use data prepared by the United Nations Population Division and published in *World Population Prospects*. If you click on the EasyProj button, the program will prompt you to select a country and ask whether you want to use the UN low, medium, or high projection assumptions. You will also see that the AIM, FamPlan and LiST boxes will be checked under the “Load Default Values” section on the right side of the screen. Once you click “Ok,” the program will load the prepared data for the DemProj, AIM, FamPlan, and LiST modules.
5. Click “OK” to return to the dialogue box and click “OK” once more to complete the set-up process.
6. Select “Save” from the Home tab of the Spectrum menu to save this projection.
7. You can then go to the Modules tab of the Spectrum menu and click on “EasyLiST” to begin working in EasyLiST.

\*\*\*\*\*

### **Step 5: Adding the LiST (and AIM) Module to a Previously Prepared Demographic Projection**

The first step in adding the LiST (and AIM) modules to a previously prepared demographic projection that did not originally include them as active modules is to open the demographic projection. To do this,

1. Select “Open” from the Home tab of the Spectrum menu.
2. Select the projection file from the “Open” dialogue box and press “Ok.” All pre-existing projections that can be loaded from that folder will be listed here.
3. Once the demographic projection is open, you need to change the configuration to indicate that the AIM, FamPlan, and LiST modules will be used as well. To do this, select “Manager” from the Projection tab of the Spectrum menu.
4. You will see the Projection manager dialogue box. Check the box next to “Lives Saved Tool (LiST)” to include the LiST module). The box next to “AIM” will then be checked automatically. You may also click on the box next to “FamPlan” if you would like to include that module as well.

\*Please note- If you are using a file prepared prior to 2009, you will see that next to the EasyProj button it will say “country not found”. You must then enter EasyProj and re-choose your country. Do not select “load default values” for any modules (i.e Demproj, AIM) that were created for the file previous to opening it with the intention to add LiST.

5. Click “OK” to complete the set-up process.
6. Select “Save” from the Home tab of the Spectrum menu to save this projection.
7. You can then go to the Modules tab of the Spectrum menu and click on “EasyLiST”, “Lives Saved Tool (LiST)”, “AIM” or “FamPlan” to begin working in the module of your choice.

# PROGRAM TUTORIAL A: EASYLiST FEATURE

## Step A1: Select the EasyLiST Feature

1. Go to the Modules tab of the Spectrum menu and click on “EasyLiST” to begin working in EasyLiST.
2. You will then see both the EasyList editor screen (left side) and the projection results screen (right side):

The screenshot displays the EasyLiST software interface. The left pane is the 'EasyLiST editor screen' with a table of interventions. The right pane is the 'projection results screen' showing a table of deaths in children.

Intervention(%)	On/Off	Start: 2011	Target: 2015
<b>Periconceptual</b>			
Folic acid supplementation	<input checked="" type="checkbox"/>	0.0	20.0
Safe abortion services	<input checked="" type="checkbox"/>	99.9	25.0
Post abortion case management	<input checked="" type="checkbox"/>	0.0	10.8
Ectopic pregnancy case management	<input checked="" type="checkbox"/>	0.0	10.8
<b>Pregnancy</b>			
<b>Antenatal care</b>			
	<input checked="" type="checkbox"/>	71.0	80.0
<b>Routine</b>			
TT - Tetanus toxoid vaccination	<input checked="" type="checkbox"/>	90.0	90.0
IPTp - Pregnant women protecte...	<input checked="" type="checkbox"/>	0.0	49.2
Syphilis detection and treatment	<input checked="" type="checkbox"/>	35.5	64.0
<b>Nutritional</b>			
Calcium supplementation	<input checked="" type="checkbox"/>	3.5	4.0
Multiple micronutrient supplemen...	<input checked="" type="checkbox"/>	0.0	20.0
Balanced energy supplementation	<input checked="" type="checkbox"/>	0.0	20.0
<b>Case management</b>			
Hypertensive disease case manage...	<input checked="" type="checkbox"/>	0.0	0.0
Diabetes case management	<input checked="" type="checkbox"/>	3.5	4.0
Malaria case management	<input checked="" type="checkbox"/>	0.0	15.2
MgSO4 - Management of pre-ecla...	<input checked="" type="checkbox"/>	3.5	4.0
<b>Other</b>			
FGR - Fetal growth restriction det...	<input checked="" type="checkbox"/>	3.5	4.0
<b>Childbirth</b>			
<b>Basic data (for calculating coverage of delivery interventions)</b>			
Skilled birth attendance (SBA)	<input checked="" type="checkbox"/>	43.0	53.8
Institutional delivery (clinic a...	<input checked="" type="checkbox"/>	43.0	53.8
Clean birth practices	<input checked="" type="checkbox"/>	0.0	0.0
Immediate assessment and stimulation	<input checked="" type="checkbox"/>	0.0	0.0
Labor and delivery management	<input checked="" type="checkbox"/>	0.0	0.0

	2008	2009	2010	2011	2012
<b>EasyLiST test</b>					
<b>Total (0-60 months)</b>	8,126	7,462	6,937	5,480	4,126
<b>&lt;1 month</b>	107	98	91	55	40
<b>1-59 months</b>	8,019	7,364	6,846	5,425	4,086
<b>Base projection - No coverage change</b>					
<b>Total (0-60 months)</b>	8,126	7,462	6,937	5,480	4,126
<b>&lt;1 month</b>	107	98	91	55	40
<b>1-59 months</b>	8,019	7,364	6,846	5,425	4,086

## Step A2: Adapt your projection

1. Click on the “Configure years” button at the bottom of the EasyLiST editor screen. In the Configuration box, select the first year of the intervention program and the target year for which you are setting a goal for intervention coverage. In most cases the first year of intervention program is the current year. Check the box for “Recalculate target coverages” if you would like the program to automatically change the target coverages given the change in timeframe. For most users, this box should be checked.
2. In the “On/Off column of the editor screen, click the boxes next to the interventions you would like to include in your projection. A green check mark will show that the intervention will be included.

Please note the scroll bar on the right side of the editor screen. You may click on the scroll bar and drag down to see all interventions.

3. Next to the “On/Off” column, you will see the current coverage for each intervention. This data comes from the latest DHS, MICS, AIS, MIS, and household surveys for each country. For the vaccination and Vitamin A coverage indicators, the data comes from UNICEF. Please note, values that can’t be changed are shown in grey. Some values are default values, and some are values that tied to another indicator value.
4. In the third column of the editor screen are the coverage targets. Values have been provided based upon expert review of available survey data and consequent theoretical scale-up for each intervention. However, you may enter in a target coverage value of your choosing. Please note, values than can’t be changed are shown in grey.
5. If you would like to set the same target coverage for multiple interventions in adjoining rows, you may click on the first box in the target coverage that you wish to set and then drag your cursor down to the last box in the target coverage column that you wish to set. The area will be highlighted in orange. Right click with your mouse, and click on “duplicate”. All values in the highlighted range will then be changed to the equal the first value in the range. Please note, some indicators can not be scaled up to 100%, because they are tied to another indicator. For example, “improved water source” and “water connection in the home” are tied together because “water connection in the home” is a subset of improved water source.
6. Once you have decided upon the interventions and the associated target coverages that you would like to include in your projection, click on the “Add results” button and select from the drop-down menu the indicator you would like to see results for. If you do no click on the “Add results” button after making changes to the editor screen, you will not see a change in results because the program has not yet recalculated using the changes you made to the editor. The tab for the projection results you are working in be highlighted in red to remind you that you have made changes to the editor and need to recalculate through the “add results button”.

### **Step A3: View Projection Results**

1. Once you select from the “Add results” menu, the program will project the child and maternal survival results using the interventions you selected, and scale up coverage linearly from the current coverage to the target coverage.
2. The results of the projection can be viewed on the right side of the EasyList screen. The results are shown by age group (for children) and year. In addition, you can compare the child, maternal and stillbirth survival results of your projection to the child survival results if there were no changes to the intervention coverage from the base year.
3. The following results can be displayed:

#### **Neonatal**

- Deaths in children less than one month of age
- Additional deaths prevented in children under one month of age relative to impact year
- Cause specific deaths in children under one month of age

- Additional deaths prevented in children under one month of age by cause relative to impact year
- Additional deaths prevented in children under one month of age by intervention relative to impact year

**Child**

- Deaths in children under five years of age
- Additional child deaths prevented in children under five years of age relative to impact year
- Cause specific deaths in children under five years of age relative to impact year
- Additional deaths prevented in children under five years of age by cause relative to impact year
- Additional child deaths prevented in children under five year of age by intervention relative to impact year

**Maternal**

- Maternal deaths
- Additional maternal deaths prevented relative to impact year
- Maternal deaths by cause
- Additional maternal deaths prevented by cause relative to impact year
- Additional maternal deaths prevented by intervention relative to impact year
- Abortions

**Stillbirth**

- Stillbirths
- Stillbirths prevented relative to impact year
- Stillbirths by cause
- Stillbirths prevented by cause relative to impact year
- Stillbirths prevented by intervention relative to impact year

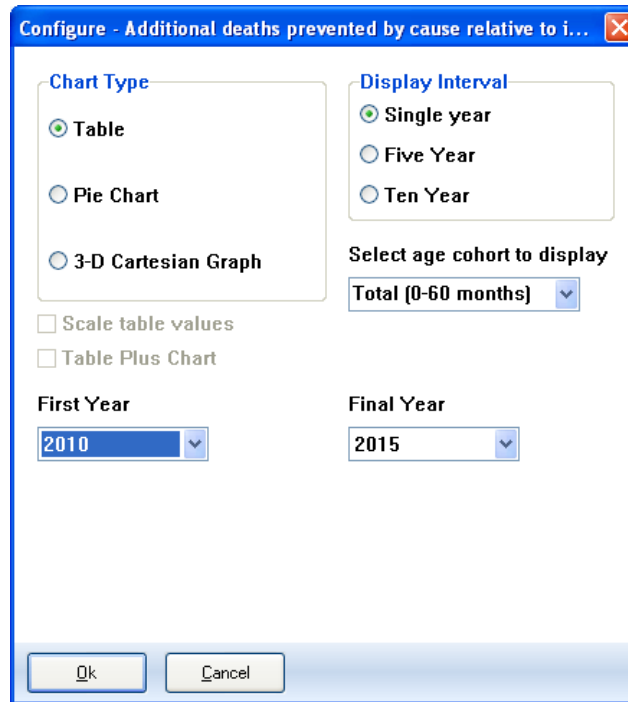
**Mortality rates**

- Stillbirth rate
- Maternal mortality ratio
- Neonatal mortality rate
- Infant mortality rate
- Under 5 mortality rate
- Mortality rates summary
- Reduction in mortality by intervention

**Nutrition**

- Percent severely wasted
- Percent stunted
- Average height/length
- Breastfeeding prevalence
- Diarrhea incidence
- Intrauterine growth restriction

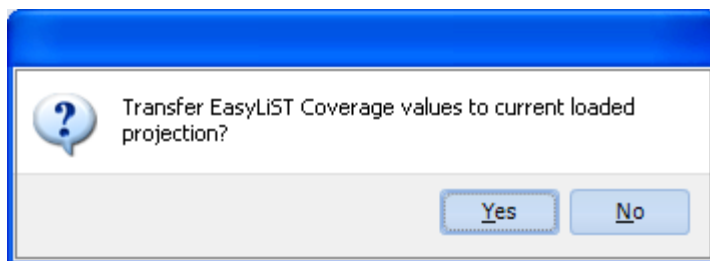
4. If you would like to change how the results are displayed on the screen, click on the “Configure” button. You will see the following screen:



5. The exact choices available will depend on the indicator you have selected. The display will normally be in single years but you can change it to display every five or ten years if desired. The chart type is also set through this dialogue box. Click on the button next to the type of display you want. You may also select the age cohort to display for some indicators, by using the drop-down menu for “Select age cohort to display”.
6. If you want to see only part of the projection (for example, results beginning only in the first year of intervention coverage), you can change the first year or final year through the “First Year” and “Final Year” drop down boxes.
7. To copy the charts you may press “Print Screen” on your keyboard, and then “Ctrl and V” to paste into Paint, Word, or Powerpoint. To export data from a screen, mouse over the top left corner of any table, right click to copy all, and then press “Ctrl and V” to paste into Excel.

### **Step A4: Save the Projection**

1. It is always a good idea to save the projection whenever you make a change to any assumptions. If you are in EasyList, click the “Close” button.
2. The following box will appear, to advise you that, by clicking “Yes”, you may carry over the intervention coverage targets in EasyList to the Expert mode.



3. Be sure to then save the projection by selecting "Save" from the home tab of the Spectrum menu. Otherwise, the projection will not be saved to file. Please note, if you made several "projections" in EasyLiST by changing the target coverage and then displaying the revised output through the "Add results" button, only the target coverage data from the last "projection" will be saved.
4. To save the projection with a different name, choose "File" from the menu bar and "Save projection as" from the pull-down menu. You will then have a chance to specify a new file name for the projection.

## PROGRAM TUTORIAL B: EXPERT MODE

### Step B1: Select the LiST Feature

1. Go to the Modules tab of the Spectrum menu and click on “LiST” to begin working in LiST. Choose the “Configuration” tab from the “Lives Saved Tool” menu. This step will display a box like the one shown below.

The screenshot shows a window titled "LiST configuration - Zambia LiST test II". It contains the following elements:

- Modify LiST years**
  - Base year of coverage: 2008
  - First year of intervention program: 2011
- Select options**
  - Disaggregate coverage by age cohorts
  - Stunting Calculations:
    - Calculate stunting based on interventions
    - Direct entry of stunting
- Create and manage custom interventions**
  - Manage interventions

At the bottom of the window are "Ok" and "Cancel" buttons.

2. Select the base year for the Lives Saved Tool from the drop-down menu. At publication, the default data for the new LiST projections is collected to correspond closely to the year 2008. Therefore, if you choose 2008 as the base year for your projection, you will have appropriate default data *provided* by the model for coverage and mortality rates that you can use or change. If you choose a base year other than 2008, you will need to adjust *all* values for coverage and mortality rates manually from your own data sources to correspond to the chosen base year.

3. Select the first year of intervention program by selecting a year from the drop-down menu. Although the program will be compiling a projection based on demographic and AIDS data from the start year you specified for the projection, and also based on the coverage rates you specified through the base year for the Lives Saved Tool, selecting a first year of intervention program will allow you to narrow the output of the projection so that the impact of an intervention program scaling up coverage from the current year (or year of your choice) can be readily viewed.
4. Next, click on the box for “Disaggregate coverage by age cohorts” if you would like to enter disaggregated coverage rates, and/or disaggregated intervention effectivenesses. Please note that the default values for these disaggregated coverages and effectivenesses are the same as the aggregated values. The user must supply their own values for the disaggregations. In most cases this level of detail will not be necessary, and the default values for health status, mortality, “herd effectiveness of vaccines” “effectiveness of nutrition interventions”, and “impact of under-nutrition on mortality” will be shown by age cohort whether or not the “Disaggregate coverage by age cohorts box is clicked.
5. Then, choose if you would like the program to calculate stunting based on the impact of interventions, or if you would like to directly enter in stunting yourself.
6. Finally, if you would like to create a custom intervention not currently included in LiST, click on the ‘Manage interventions’ button and follow the instructions provided in the ‘Manage interventions’ box. Then click ‘Close’. If you did not enter the ‘manage interventions’ box, click ‘Ok’ to return to the main LiST menu.

### “Base Years” Utilized by the Lives Saved Tool

**First Year of the Projection:** This is the year entered when first creating the new demographic projection, in the “Projection manager” dialogue box. It is the starting point from which DemProj begins to project future population. If intending to use AIM, it is a good idea to set the first year of the projection to one or two years before the start of the HIV/AIDS epidemic.

**Base Year of Coverage:** This is the year entered when first editing the parameters of the Lives Saved Tool, in the “Configuration” dialogue box. It is the starting point from which the Lives Saved Tool begins to project future child and maternal survival. Future child and maternal survival estimates are projected from the base year data on health status, mortality, abortion, economic status, and coverage of child and maternal health interventions in combination with default scientific data. Model users may choose to select 2008 as the base year for health status, mortality, economic status, and intervention coverage, for which default values will be provided. Or, they may choose another base year and provide the appropriate values from their own data sources.

**First Year of intervention program:** This is the first year for which the Lives Saved Tool will show output results.

## Step B2: Introduction to Using Editors

### About the Editors in Expert Mode: Editor Screen Format

The editors are similarly formatted screens which allow you to enter and/or edit the inputs on which a projection is based. At the bottom of the editor are special function buttons which will more easily allow you to work within the cells of the editor when entering data. “Duplicate” allows you to copy information from one cell, column, or row to another; “Interpolate” to enter a beginning and ending number and have the

computer calculate the numbers for the intervening intervals; “Normalize” allows you to have the program adjust all values in the table so the total equals 100, if you made a change to one cell in the table that caused the total to be different from 100; and “Source” to write notes indicating the source of the data for future reference.

To use the “Duplicate” button,

1. Highlight (select) the range (column, row, or cells to be affected). The first cell in the range should be the value you want to copy.
2. Extend the range to the last year by using the mouse (hold down the left button and drag the range) or the keyboard (hold down the shift key and use the arrow keys).
3. Click on the “Duplicate” key to copy the value at the beginning of the range to all the other cells in the range.

To use the “Interpolate” button,

1. Enter the beginning and ending values in the appropriate cells.
2. Highlight the entire range from beginning to end.
3. Click on the “Interpolate” key to have the values interpolated and entered into each of the empty cells.

To use the “Normalize” function,

1. Click on a table and right click with your mouse. Then highlight “Normalize”

To use the “Source” button,

1. Click on the “Source” button to open a small word processor window.
2. Enter the source of the data and make any special comments about the assumptions.
3. Click on “Close” to return to the editor.

This feature allows you to keep a record of the data sources and assumptions as you make the projections. This source information will be maintained with the data file and printed whenever you print the projection summary. It is **strongly** recommended that you use this feature to avoid later confusion.

To use the “Cancel” and “Ok” buttons,

The “Cancel” or “Ok” button are usually used only when data has been input for all editors in a editor grouping. Click the “Ok” button to return to program will record your changes and return to the “LiST” dialogue box. The “Cancel” button allows you to exit the editor without making any changes to the data. This action will exit all of the “Efficacy” editors and restore all inputs to their values before you opened the “Efficacy” editors. Any changes you made during the current editing session will be lost.

### **Step B3: Editing health status, mortality and economic status**

This editor grouping gives what could be termed the “baseline status” of a child born in the country you are analyzing. It shows the relative hand a child has been dealt, given national figures for pre-natal growth,

nutritional status at birth, breastfeeding proportion, baseline mortality rates and the proximate causes for death, abortion incidence, still birth rate, and economic status.

### Baseline Health Status

From the LiST menu, select the “Health status, mortality and economic status” tab and you will see a screen that looks like the one below:

Health status, mortality and economic status - Zambia LiST test II

Baseline child health status | Baseline child mortality | Baseline maternal mortality | Abortion | Stillbirth | Economic status

Baseline year: 2008

Check the box below if intervention population is vitamin deficient

Vitamin A deficiency

Zinc deficiency

Check the box below if IPTp or sleeping under an ITN is recommended

IPTp

Percent of women exposed to falciparum: 98.00

IUGR (Intrauterine growth restriction)

Percent of newborns with IUGR: 6.17

Wasting

	<1 month	1-5 months	6-11 months	12-23 months	24-59 months
Percent severely wasted	0.700	0.700	2.100	1.600	0.700

Stunting

	<1 month	1-5 months	6-11 months	12-23 months	24-59 months
Percent stunted	13.800	13.800	34.100	71.000	63.700

Incidence of diarrhea

	<1 month	1-5 months	6-11 months	12-23 months	24-59 months
Number of cases per child-year	4.700	4.700	7.900	6.400	3.200

Ok | Cancel | Duplicate | Interpolate | Source

1. Please click the boxes for Vitamin A deficiency and/or Zinc deficiency if the intervention population is deficient for those vitamins. Also, please click the box for IPTp if IPTp or sleeping under an ITN is recommended by the national government of the country you are working on.
2. Review the default values for percent of women exposed to falciparum malaria, IUGR, wasting, stunting, and incidence of diarrhea. Each is organized by age cohort.
3. If you have more accurate country specific data, click on that box and enter the data. Please note, if you chose a base year other than 2008 for a new projection based on a 2008 default file you will need to manually enter data for health status for *that* base year.
4. Please remember to click the “Source” button to enter a record of the data sources and assumptions as you make the projections. In the health status, mortality, abortion, and stillbirth editors, each

indicator for which data may be entered has a separate link to the source button. Click on one of the data cells for an indicator (stunting, for example) to highlight it with a black dotted box. Then click, on the “Source” button to enter the source. Then proceed to the next indicator and complete the same process to enter in a source.

After reviewing and/or entering the information in the “Baseline Health Status” editor, click the tab at the top labeled “Baseline child mortality” to move to that screen.

### Baseline Mortality

By selecting the “Baseline child mortality” or “Baseline maternal mortality” you will see a screen that looks like the one below:

Health status, mortality and economic status - Zambia LiST test II

Baseline child health status | **Baseline child mortality** | Baseline maternal mortality | Abortion | Stillbirth | Economic status

Baseline year: 2008

Baseline mortality

	Neonatal mortality rate*	Infant mortality rate*	Under 5 mortality rate*	MDG Goal for Under 5 Mortality*
Baseline child mortality	35.36	92.00	148.00	60.00

\*deaths per 1000 live births

Percent of child deaths by proximate causes

Neonatal		Post neonatal	
Neonatal - Diarrhea	1.81	Diarrhea	22.58
Neonatal - Sepsis	22.94	Pneumonia	21.18
Neonatal - Pneumonia	5.76	Meningitis	3.17
Neonatal - Asphyxia	27.82	Measles	0.83
Neonatal - Prematurity	28.56	Malaria	24.32
Neonatal - Tetanus	0.59	Pertussis	1.18
Neonatal - Congenital anomalies	7.44	AIDS	0.13
Neonatal - Other	5.09	Injury	4.70
Total	100.00	Other	21.90
		Total	100.00

Ok | Cancel | Duplicate | Interpolate | Source

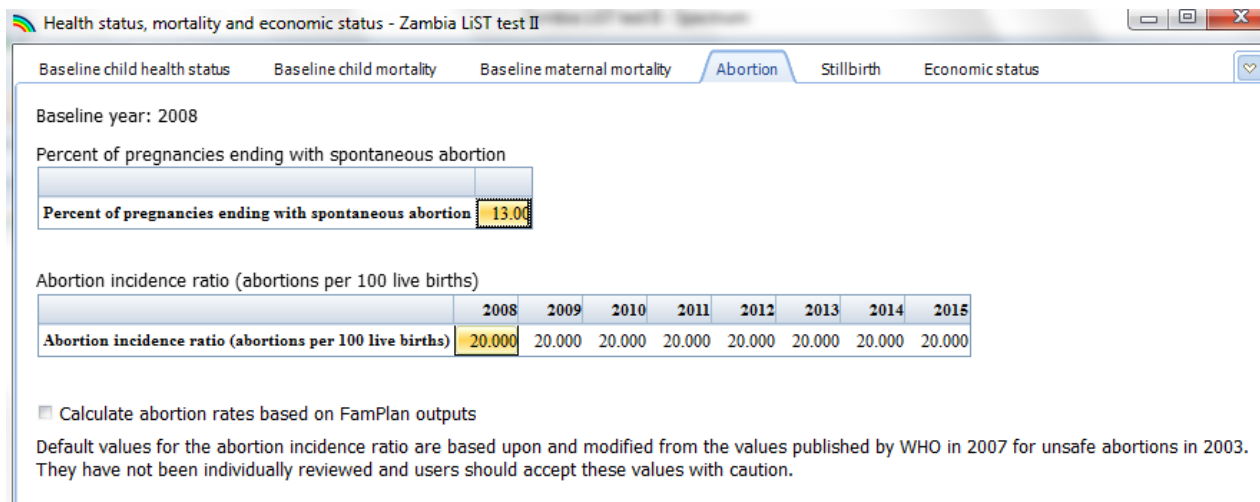
The “Baseline mortality” editors are similar to the “Health Status” editor.

1. You may choose to review and leave the default values for baseline mortality and percent of all deaths by cause, or you may click anywhere in the editor screen to make it active and begin entering data.

- When finished with both the “Baseline child mortality” and “Baseline maternal mortality” editors, click on the “Abortion” tab to proceed to that editor.

## Abortion, Stillbirth and Economic Status

The editor screens for Abortion, Stillbirth, and Economic status look similar. Click on the “Abortion” tab to view the following screen:



Health status, mortality and economic status - Zambia LiST test II

Baseline child health status    Baseline child mortality    Baseline maternal mortality    **Abortion**    Stillbirth    Economic status

Baseline year: 2008

Percent of pregnancies ending with spontaneous abortion

Percent of pregnancies ending with spontaneous abortion

Abortion incidence ratio (abortions per 100 live births)

	2008	2009	2010	2011	2012	2013	2014	2015
Abortion incidence ratio (abortions per 100 live births)	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000

Calculate abortion rates based on FamPlan outputs

Default values for the abortion incidence ratio are based upon and modified from the values published by WHO in 2007 for unsafe abortions in 2003. They have not been individually reviewed and users should accept these values with caution.

- Please review the default percent of pregnancies ending with spontaneous abortion and the abortion incidence ratio, and make any changes you feel are necessary. Then click on the ‘Stillbirth’ tab.
- In the stillbirth tab, review the stillbirth rate and percent of stillbirths by proximate cause. Then click on the ‘Economic status’ tab.
- Please review and leave the default values for Poverty/food security (beginning in the base year for the Lives Saved Tool), or you may click anywhere in the editor screen to make it active and begin entering data.
- Remember to click the “Source” button to enter a record of data sources and assumptions if you have entered data.
- Click the “Ok” button to return to the “Lives Saved Tool” dialogue box. It is suggested that you save your data by clicking “File” and then “Save”.
- The “Cancel” button allows you to exit the editor without making any changes to the data. This action will exit the editor and restore all inputs to their values before you opened the editor. Any changes you made during the current editing session will be lost. For future reference, if a editor grouping (for example, health status, mortality, and economic status) has more than one editor tab, pressing “Cancel” will exit ALL editors and restore all values to those that existed before you opened the editor grouping.

## Step B4: Editing Coverage

From the “Lives Saved Tool” menu, click on the tab for “Coverage” and you will be directed to the following screen:

	2008	2009	2010	2011	2012	2013	2014	2015
Contraceptive use								
Folic acid supplementation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Safe abortion services	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9
Post abortion case management	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ectopic pregnancy case management	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

These coverage editors are the principal screens for the Lives Saved Tool in which the user may (and should!) manipulate the values shown. There are seven coverage editor screens: periconceptual, pregnancy, child birth, breastfeeding, preventive, vaccines, and curative.

1. Click on the tab for the editor screen that you wish to work in, to bring that screen to the forefront. The seven editor screens are presented in a format similar to that shown above.
2. Review the default values listed for each child health intervention and for each age group for the base year to the intervention year. The intervention definitions and typical sources for the default data are listed in the notes that appear when you put your cursor over the indicator, and in Appendix 1 of this manual., .
3. Edit the coverage targets for future years past the first year of intervention manually if you have data you feel is more accurate than what is listed. *If you would like to make this first projection a “do nothing” scenario (or a theoretical counterfactual for your intended coverage changes), where the intervention coverage is by default held constant from the first year of intervention, do not change the default values after the first year of intervention. Click “Ok” and save the projection through the ‘Home’ tab of the Spectrum menu. Then, proceed to step B5.*
4. Edit the coverage values from the first year of intervention to the target year. **By changing the target, you will be able to project the impact upon child survival in your country.** Most often, users set a target for the final year of the projection (2015 in this case of the MDGs) and interpolate between the base year and the target year.
5. An easy way to change this coverage for is to set the coverage in the target year and highlight from the first year of intervention to the target year. Then right click and scroll to “interpolate”. Use the duplicate function if you would like several adjoining data boxes in a row or column to have the same value.
6. In the “Pregnancy” editor, click on the box “Antenatal care- automatically components” if you would like the program to assume calculation of coverage for the components (identified by an \*)

that comprise antenatal care and facility based birth interventions. In this case the user will only enter coverage for the antenatal care and facility based birth interventions, as opposed to the coverage for each specific component that comprises them.

7. In the “Child birth” editor, begin by entering the birth survey data. This will automatically calculate the percent coverage for ‘level of delivery’ interventions and ‘childbirth interventions for all deliveries’. The percent coverage of ‘level of delivery’ and ‘childbirth interventions for all deliveries’ will remain in grey and can’t be edited, unless you check on ‘Edit place of delivery’ to manually change coverage of level and place of delivery or you click on ‘Edit interventions’ to manually enter coverage for childbirth interventions. Please note, to manually edit coverage of childbirth interventions you must (after checking ‘Edit interventions’) specify which of the childbirth interventions are available, before proceeding to the tab for the each delivery level to enter coverage values. Coverage can be entered as the percentage of coverage for each intervention as a percentage of all delivery levels (all delivery levels summing to 100%), or as the coverage percentage of each childbirth intervention within that delivery level specifically. If you need to return the box where you specify the availability of childbirth interventions, you must uncheck and then re-check the ‘Edit interventions’ box.
8. In the “Breastfeeding” editor, data may be entered by either prevalence or promotion. Breastfeeding promotion is by default set by the program to equal the exclusive breastfeeding rate for 1-5 months. However, if you have information on coverage of breastfeeding promotion in your country, you may enter it in manually.
9. In the Preventive editor, click on the box “Preventive postnatal care- automatically components” if you would like the program to assume calculation of coverage for the components (identified by an \*) that comprise postnatal care.
10. When you have completed entering in the coverage rates, click “Ok” to be redirected back to the “LiST” menu. You should save your changes at this point.

### **Step B5: Editing the effectiveness of interventions**

- From the “Lives Saved Tool” menu, click on the gray bar labeled “Effectiveness of Interventions. There will then be six editor groupings to choose from, and which will need to be reviewed: Effectiveness of interventions (maternal), Effectiveness of interventions (stillbirths), Effectiveness of interventions (delivery), Effectiveness of interventions (<1 month), Effectiveness of interventions (1-59 months), Herd effectiveness of vaccines, Effectiveness of nutrition interventions, and Impact of under-nutrition on mortality.

These editor groupings show the default values for the effectiveness (the percent of deaths due to a specific cause that are reduced by the intervention) and affected fraction (the percent of deaths due to a specific cause which are potentially able to be impacted by a specific intervention) for each maternal or child health intervention. Please note that the editor groupings and screens for “Effectiveness” are labeled in gray to show that these values come from rigorous research compiled for the Lancet series on Neonatal Survival, and should NOT usually be changed in regard to a specific country context. However, you may make any changes you feel necessary

## Effectiveness of interventions (maternal, stillbirth, delivery, <1, and 1-59 months)

The first five editor groupings have editor screens organized by cause of death, which display the default values by intervention and age grouping if applicable, as shown in the example below:

	1-5 months		6-11 months		12-23 months		24-59 months	
	Effectiveness	Affected fraction	Effectiveness	Affected fraction	Effectiveness	Affected fraction	Effectiveness	Affected fraction
<b>Preventive</b>								
Improved water source	0.170	1.000	0.170	1.000	0.170	1.000	0.170	1.000
Water connection in the home	0.690	1.000	0.690	1.000	0.690	1.000	0.690	1.000
Improved sanitation - Utilization of latrines or toilets	0.360	1.000	0.360	1.000	0.360	1.000	0.360	1.000
Hand washing with soap	0.480	1.000	0.480	1.000	0.480	1.000	0.480	1.000
Hygienic disposal of children's stools	0.200	1.000	0.200	1.000	0.200	1.000	0.200	1.000
Vitamin A supplementation	0.000		0.320		0.320		0.320	
Zinc supplementation	0.000		0.150		0.150		0.150	
<b>Vaccines</b>								
Rotavirus	0.740	0.390	0.740	0.390	0.740	0.390	0.740	0.390
<b>Curative after birth</b>								
ORS - oral rehydration solution	0.930	0.950	0.930	0.950	0.930	0.950	0.930	0.950
Antibiotics - for treatment of dysentery	0.990	0.050	0.990	0.050	0.990	0.050	0.990	0.050
Zinc - for treatment of diarrhea	0.230		0.230		0.230		0.230	

Click on each tab and review the default values for that cause of death.

You may view:

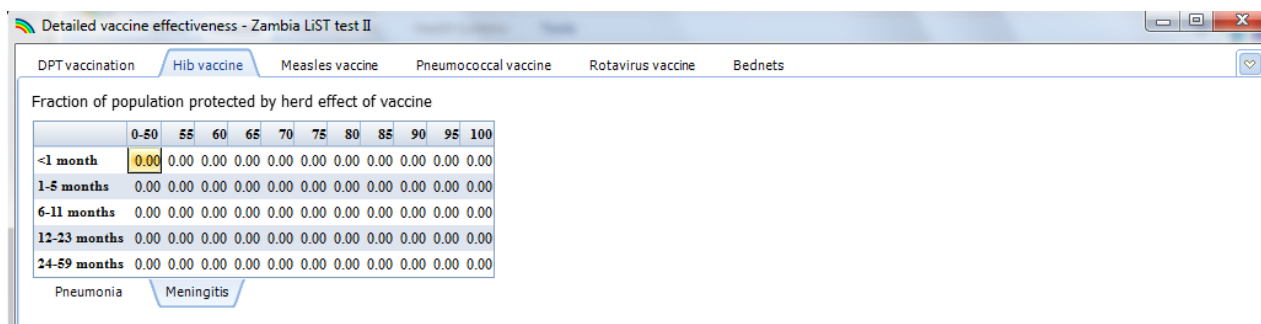
1. The interventions only in reference to the related condition (on tabs at the top of the screen), which is the default presentation; or
2. All types of interventions on one page by checking the box “Show all items”.
3. If you disagree with the default values for effectiveness or affected fraction and would like to enter values that you have prepared, click anywhere inside the editor [screen] to make it active and enter the data. Because the default values are based on rigorous scientific study and are unlikely to need alteration, the cell for any default value that you change will be highlighted in **red** to show that the value was changed from the default value.
4. Please remember to click the “Source” button to enter a record of the data sources and assumptions as you make the projections.
5. Click the “Display Default” button if you would like to view the value for a cell that was entered in comparison to the default value.

- If, at any time you decide that you would prefer to revert to the default values over the data that you have entered, click the “Restore Defaults” button, and the default values for all indicators in the editor will be restored.

When you have finished reviewing the data for the maternal, stillbirth, delivery, <1, and 1-59 months effectiveness of interventions click the “Ok” button to return to the “Lives Saved Tool” dialogue box.

### **Herd Effectiveness of Vaccines**

The herd immunity grouping is organized slightly differently from the previous three effectiveness groupings, in that the editor screens are ordered by vaccine (or bednets), age cohort, coverage rate of the vaccine, and affected disease as seen below:



Declines in mortality from vaccines are modeled based on vaccine effectiveness specific to the child receiving the immunization and a herd effect. The herd effect is modeled as the percent of unimmunized children who are protected by the reduced transmission of the disease resulting from increased immunization rates. The parameters for herd effect are entered as the percent of the unimmunized population which is protected for five percentage point bands beginning at 50 percent coverage. Currently the defaults for herd effect are zero for all vaccines except measles where the herd effect is assumed to be 1.00 when coverage reaches 95 percent. Please note, due to the structure of the LiST program, the herd effect can't be properly calculated and implemented if coverage is declining.

### **Effectiveness of nutrition interventions**

The “Effectiveness of nutrition interventions” editor grouping shows the effectiveness of nutrition interventions, not directly upon mortality, but rather upon the variables of IURG/low birth weight, stunting, wasting, diarrhea, and breastfeeding promotion. An example of an “Effectiveness of nutrition interventions editor screen” is as follows:

	<1 month		1-5 months		6-11 months		12-23 months		24-59 months
	Effectiveness	Affected fraction	Effectiveness	Affected fraction	Effectiveness	Affected fraction	Effectiveness	Affected fraction	Effectiveness
Improved water source	0.00	1.00	0.17	1.00	0.17	1.00	1.00	0.17	1.00
Water connection in the home	0.00	1.00	0.63	1.00	0.63	1.00	0.63	1.00	1.00
Improved sanitation - Utilization of latrines or toilets	0.00	1.00	0.36	1.00	0.36	1.00	0.36	1.00	1.00
Hand washing with soap	0.00	1.00	0.48	1.00	0.48	1.00	0.48	1.00	1.00
Hygienic disposal of children's stools	0.00	1.00	0.20	1.00	0.20	1.00	0.20	1.00	1.00

Please review the default values for each editor (impacts on IUGR, stunting, wasting, diarrhea incidence, and breastfeeding promotion), and then proceed to the “impact of under-nutrition on mortality” editor grouping.

### Impact of under-nutrition on mortality

The “Impact of under-nutrition on mortality” editor grouping then translates the impact of IUGR, stunting, wasting, and [lack of] breastfeeding upon mortality in children. An example of an editor in this variable grouping is as follows:

	1-5 months		6-11 months		12-23 months		24-59 months	
	Relative Risk	Affected fraction	Relative Risk	Affected fraction	Relative Risk	Affected fraction	Relative Risk	Affected fraction
<b>Diarrhea</b>								
is greater than 1 standard deviation less than the median norm	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
between 1 and 2 standard deviations less than the median norm	1.200		1.200		1.200		1.200	
between 2 and 3 standard deviations less than the median norm	1.600		1.600		1.600		1.600	
more than 3 standard deviations less than the median norm	4.600		4.600		4.600		4.600	
<b>Pneumonia</b>								
is greater than 1 standard deviation less than the median norm	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
between 1 and 2 standard deviations less than the median norm	1.000		1.000		1.000		1.000	
between 2 and 3 standard deviations less than the median norm	1.300		1.300		1.300		1.300	
more than 3 standard deviations less than the median norm	3.200		3.200		3.200		3.200	
<b>Measles</b>								
is greater than 1 standard deviation less than the median norm	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
between 1 and 2 standard deviations less than the median norm	1.000		1.000		1.000		1.000	
between 2 and 3 standard deviations less than the median norm	1.700		1.700		1.700		1.700	
more than 3 standard deviations less than the median norm	2.800		2.800		2.800		2.800	
<b>Malaria</b>								
is greater than 1 standard deviation less than the median norm	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
between 1 and 2 standard deviations less than the median norm	1.000		1.000		1.000		1.000	
between 2 and 3 standard deviations less than the median norm	1.000		1.000		1.000		1.000	
more than 3 standard deviations less than the median norm	2.100		2.100		2.100		2.100	

- Users must review the following four screens: Impact of stunting on mortality (through impact on mortality from diarrhea, pneumonia, measles and malaria, by degree of stunting); Impact of wasting on mortality (through impact on mortality from diarrhea, pneumonia, measles and malaria, by degree of wasting); Impact of wasting on mortality (through impact on mortality from diarrhea,

pneumonia, measles and malaria, by degree of wasting); and Impact of breastfeeding on mortality (through impact on mortality from diarrhea and pneumonia).

When you have finished reviewing all tabs, click on “Ok” to be returned to the “Lives Saved Tool” menu. Please remember to save your projection by using the “Save” or “Save as” functions from the drop-down menu under “File”.

### **Step B6: Creating LiST projections for comparison**

1. If you would like to create alternate scenarios to compare against scenario 1, (AFTER you have saved Scenario 1, and Scenario 1 is open (you will see the title you may go to the ‘Home’ tab and click Save As. Then give the new projection a name that will show you it is a comparison to the Scenario 1 (e.g. Senegal Vaccines II).
2. Do not change the baseline health, mortality or economic status from Scenario 1, or the intervention coverage between the baseline year to the first year of program intervention. Otherwise Scenario II will not compare accurately against Scenario 1 in terms of the impact of change in intervention coverage. When you have finished all coverage editors, click “ok”. Be sure to save your Scenario 2. Close Scenario 2.
3. Repeat steps l-m as many times as necessary to create alternate comparisons to Scenario 1. Please note, when you are working with multiple projections, be sure that you are editing in the one you want to be making changes in, The title of the projection that you are currently ‘in’ will be highlighted in BOLD at the bottom of the screen.

### **Step B7: View LiST projection results**

1. To display the results of your projections, close all projections and begin by opening the projection you want to compare against (usually Scenario 1). Please note, whichever projection you open first will display first in the results tables. Then open the projections you want to compare against the first, in the order that you want the comparison.
2. Select ‘Results’ from the LiST menu and choose your category and indicator for display.
3. The results displays are the same as those described for EasyLiST in Step A3, #3-7 of this manual. Under the results, excluding PMTCT, Cotrimoxazole and ART, only interventions selected by the user should appear to have any deaths averted. If that is not the case, then an error has been made. In addition, the deaths averted in the first year of intervention program should all be 0. Make any necessary corrections. Save and Close the projection.

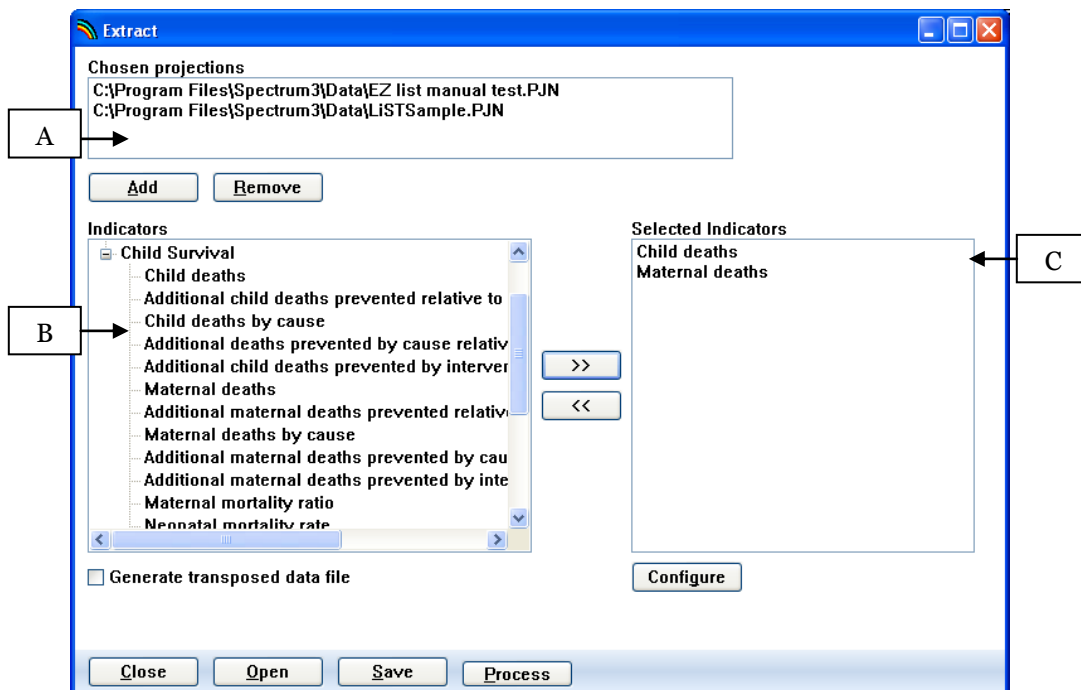
# TOOLS SUPPORTING LiST

The tools in Spectrum allow for further use of the data generated while creating projections. Those currently available for use with LiST include:

- The extract feature, which enables you to extract the projected data from one projection (or multiple projections) on one or more indicators. The extracted data is then saved to a CSV file, and can be imported into excel for further analysis. An example would be to use the extract feature to extract the data for “Child deaths” and “Maternal deaths” for both Brazil and Mexico into an excel table all at once.
- The scenario generator feature enables you to quickly vary the target coverage for one or more child and/or maternal health interventions, across multiple projections. An example would be to generate one scenario for all African countries where target coverage of insecticide treated nets reaches 50% by the target year, and another scenario where target coverage of insecticide treated nets reaches 80%.

## Extract

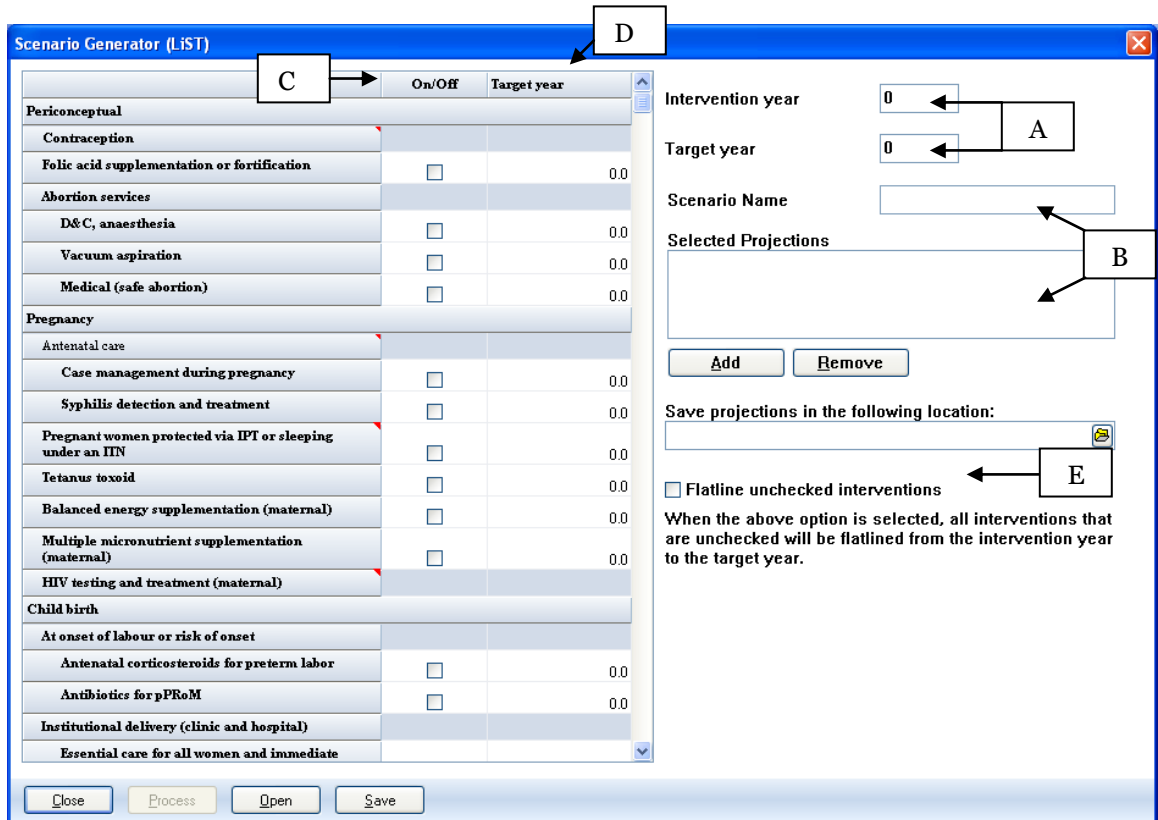
1. After entering Spectrum, go to “Tools” and click on “Extract” from the drop-down menu. (**Note:** You cannot use the Extract function if you have a projection file open. If the “Extract” menu appears in grey, select “File” and “Close Projection” to close all projections. Then you should be able to select “Extract”.) An “Extract” window will open, in which the white “choice” boxes will be empty. Below is an example of what the “Extract” window looks like once filled in, followed by instructions on how to do so:



- a. For the “Chosen Projections” box, click “add” to browse and add a previously saved projection. Highlight a projection from the “Chosen Projections” box and click “remove” to remove it.
  - b. Once a projection is added to the “Chosen Projections” box, the modules available for that projection will appear in the “Indicators” box. Click on the “+” to open a category and see the module-specific indicators housed within it.
  - c. To pull an indicator into the box of “Selected Indicators” that you wish to work with, highlight the indicator in the “Indicators” box and press the “>>” button. To remove an indicator from the “Selected Indicators” box, highlight it and click “<<.” In other modules of Spectrum, you may further refine your selected indicator by sex or region (urban/rural) through highlighting the indicator in the “Selected Indicators” box and clicking “Configure.” However, there are currently no indicators in *LiST* that have such breakdown data, and thus this function is not applicable for Extract with LiST projections.
2. To process the extraction, click the “Process” button. Enter the file name you wish to save the extraction as, and click “Ok.” It will then be saved as a CSV file, ready for use in Excel.
  3. If you do not wish to process the extraction immediately, but would like to save the “Extract” window in which you have pulled out the mix of projections and indicators that you would like to use in the future, click the “Save” button. Enter the file name you wish to save the “Extract” window as, and click “Ok.” It will then be saved as an .ex file.
  4. If you have a previous “Extract” window saved as an .ex file, you may open it by clicking the “Open” button.

### ***Scenario Generator***

1. After entering Spectrum, go to “Tools” and click on “Scenario Generator (LiST)” from the drop-down menu. A “Scenario Generator (LiST)” window will open, in which the white “choice” boxes will be empty. Below is an example of what the “Scenario Generator (LiST)” window looks like once filled in, followed by instructions on how to do so:



- a. Choose the “Intervention Year” and “Target Year”. Often, the intervention year is the current year.
- b. Choose a “Scenario Name”. This will be added to the front of the projection name for all projections selected. Then, in the “Selected Projections” box, click “add” to browse and add a previously saved projection. Highlight a projection from the “Chosen Projections” box and click “remove” to remove it. Then, select where to save the projection by clicking on the file folder icon beneath “Save projections in the following location” and choosing from the drop-down list. It will then be saved as a Scenario Generator file (.SG file).
- c. Check the boxes in the “On/off” column next to the indicators you wish to modify in your scenario.
- d. In the Target year column, click on the box in the row for each intervention you want to include and enter in a target coverage.
- e. Click on the “Flatline unchecked interventions” box if you would like the program to flatline coverage for all interventions that were unchecked in the “On/off” column, from the intervention year to the target year. Often, this will be the preferred choice, as it allows you to project the impact of only the intervention/s that you select in the “On/off” column and set a target coverage for (as compared to the status quo). However, in some cases the user may have previously prepared projection files that have target coverage already set for a specified set of indicators, and they may wish to have the program keep those coverage

settings with the exception of one (or more) indicators for which a new target coverage will be applied through the scenario generator. In that case, the “Flatline unchecked interventions” box should remain blank. A simple example would be if an organization had set target coverage in the selected projected files for all interventions to be 80% in 2015, but wanted to explore the effect of increasing antenatal care to 90% by 2015.

2. To process the scenario generation, click the “Process” button.
3. If you do not wish to process the scenario generation immediately, but would like to save the “Scenario Generator (LiST)” window in which you have pulled out the projections that you would like to generate scenarios for in the future, click the “Save” button. Enter the file name you wish to save the “Scenario Generator (LiST)” window as, and click “Ok.” It will then be saved as an .ex file.
4. If you have a previous “Scenario Generator (LiST)” window saved as an .ex file, you may open it by clicking the “Open” button.

## ANNEX I: COVERAGE INDICATOR DEFINITIONS

### Included Interventions

Periconceptual	Pregnancy	Child Birth	Preventive/ Vaccines	Curative
Contraception*	TT- Tetanus toxoid vaccination	Clean birth practices	Thermal care	Maternal sepsis case management
Folic acid supplementation or fortification	IPTp - Pregnant women protected via intermittent preventive treatment of malaria during pregnancy	Immediate assessment and stimulation	Clean postnatal practices	KMC – Kangaroo mother care
Safe abortion services	Syphilis detection and treatment	Labor and delivery management	Complementary feeding – (education only, supplementation and education)	Case management of severe infection in neonates (Oral, injectable, full supportive care)
Post abortion case management	Calcium supplementation	Neonatal resuscitation	Improved water source	ORS – oral rehydration solution
Ectopic pregnancy case management	Balanced energy supplementation	Antenatal corticosteroids for preterm labor	Water connection in the home	Antibiotics - for treatment of dysentery
	Multiple micronutrient supplementation	Antibiotics for pPRoM	Improved sanitation – utilization of latrines or toilets	Zinc – for treatment of diarrhea
	Hypertensive disease case management	MgSO4 – management of eclampsia	Hand washing with soap	Oral antibiotics - case management of pneumonia in children
	Diabetes case management	AMTSL – active management of the third stage of labor	Hygienic disposal of children's stools	Vitamin A - for treatment of measles
	Malaria case management	Induction of labor for pregnancies lasting 41+ weeks	ITN/IRS – Ownership of insecticide treated nets or indoor residual spraying	Antimalarials – artemisinin compounds for malaria
	MgSO4 – management of pre-eclampsia		Vitamin A supplementation	Therapeutic feeding – for severe wasting
	FGR - Fetal growth restriction screening and management	Breastfeeding	Zinc	Cotrimoxazole*
	PMTCT/Adult ART*	Optimal Breastfeeding	BCG vaccination	Child ART*
		Breastfeeding Promotion	Polio vaccination	
*These interventions are linked into <i>LiST</i> from other Spectrum modules (FamPlan and AIM). Grey interventions indicate that they are part of a larger package of interventions which are typically delivered together.			Pentavalent vaccine (DPT, Hib and HepB)	
			Pneumococcal vaccination	
			Rotavirus vaccination	
			Measles vaccination	

**National level Data Inputs**

<b>Inputs</b>	<b>Value</b>	<b>Data Source</b>	<b>Notes</b>
Neonatal mortality rate	NMR	WHO/UNICEF	Used 2004/2005 WHOSIS mortality data. Updated to DHS data if appropriate.
Infant mortality rate	IMR	WHO/UNICEF. Methodology described in Levels and trends in under-5 mortality, 1990-2008. You D, Wardlaw T, Salama P, Jones G. Lancet 2009 Sep 10.	Used UNICEF mortality data from the year of the most recent available survey.
Under 5 mortality rate	U5MR	WHO/UNICEF. Methodology described in Levels and trends in under-5 mortality, 1990-2008. You D, Wardlaw T, Salama P, Jones G. Lancet 2009 Sep 10.	Used UNICEF mortality data from the year of the most recent available survey.
Maternal mortality ratio	MMR	WHO	Trends in maternal Mortality: 1990-2008. WHO 2010.
Stunting	by age group; 0-1 month, 1-5 months, 6-11 months, 12-23 months, 24-59 months	Calculated from WHO or DHS	Height-for-age less than -2 Z-scores When WHO data was used, stunting was based upon standard deviations and WHO under 5 stunting values. For DHS data, month: used < 6 months 1-5 months: used < 6 months 6-11 months: used 6-11 months 12-23 months: used 12-23 months 24-59 months: used 36-47 months
Wasting	by age group; 0-1 month, 1-5 months, 6-11 months, 12-23 months, 24-59 months	Calculated from WHO or DHS	Weight-for-height less than -3 Z-scores When WHO data was used, stunting was based upon standard deviations and WHO under 5 stunting values. For DHS data, 0-1 month: used < 6 months 1-5 months: used < 6 months 6-11 months: used 6-11 months 12-23 months: used 12-23 months 24-59 months: used 36-47 months
Breast feeding	by age group; 0-1 month, 1-5 months, 6-11 months, 12-23 months,	Calculated from DHS or MICS data	Exclusive breast feeding, Predominant BF (+water or liquids or juice) Partial BF (+ complementary foods and other milks), No breast feeding As the DHS categories do not match exactly the LiST categories, the best fit for the LiST period was chosen, if possible. month: used < 2 months

Inputs	Value	Data Source	Notes
			1-5 months: used 4-5 months 6-11 months: used 8-9 months 12-23 months: used 18-19 months
Diarrhea incidence	by age group; 0-1 month, 1-5 months, 6-11 months, 12-23 months, 24-59 months	Boschi-Pinto C, Lanata C, Black R. The Global Burden of Childhood Diarrhoea. In: Ehiri, John (Ed.). <i>Maternal and Child Health: Global Challenges, Programs, and Policies</i> . Springer Publishers, Washington DC, USA, 2009.	Data are regional estimates based upon DHS data.
Under 5 deaths by cause	14 causes	CHERG 2008	<i>Lancet</i> 2010 ; 375: 1969–87; Global, regional, and national causes of child mortality in 2008: a systematic analysis.
Maternal deaths by cause	11 causes	Modified from Khan et al, WHO analysis of maternal death: a systematic review. <i>Lancet</i> 2006 Apr 1;367(9516):1066-74.	Data are regional (African, Asian, South American) and have been adjusted to match the newest categories.
Abortion incidence ratio		Sedgh G. et al. 2007. <i>Legal Abortion Worldwide: Incidence and Recent Trends</i> , International Family Planning Perspectives, 33(3): 106-116 and WHO. 2007. <i>Unsafe Abortion: Global and Regional Estimates of the Incidence of Unsafe Abortion and Associated Mortality in 2003</i> . Geneva.	The Sedgh article gave data for safe abortion at the country level for 60 countries, and the WHO gave data for unsafe abortion for 18 sub-regions (including North America and Oceania). Countries were allocated to the regions in the WHO publication. The Sedgh ratio (for safe abortion) was then used for the default, and if not available the WHO ratio for unsafe abortion was used, under the assumption that very few countries have a significant incidence of both.
Percent of pregnancies ending in spontaneous abortions	Default 13%	See FamPlan Manual	See FamPlan Manual for complete information.
IUGR	% of children born IUGR	Low Birth Weight: United Nations Children’s Fund and World Health Organization, <i>Low Birthweight: Country, regional and global estimates</i> . UNICEF, New York, 2004.  IUGR calculation: De Onis M. <i>Levels and Patterns of Intrauterine Growth Retardation in Developing Countries</i> . <i>European Journal of Clinical Nutrition</i> 1998; 52(1):s5-s15.	Data on the percent of infants considered to be intra-uterine growth retarded (IUGR) is difficult to obtain without accurate information on gestational age and data reported in household surveys is often biased because only a select sample of babies are weighed. In 2004, WHO and UNICEF published adjusted birthweights which are used as the default in LiST.  De Onis give a calculation of $Y = -3.2452 + 0.852X$ to calculate IUGR (y) from low birthweight (X), which excludes children who are pre-term as well as children who are IUGR but not LBW. Children who weigh less than 2000g at birth and are IUGR are less likely to benefit from the interventions which reduce IUGR births. It is estimated that 88.4% of all IUGR infants weigh between 2000 and 2499g. Default

Inputs	Value	Data Source	Notes
			IUGR is 88.4% of calculated IUGR.
Vitamin A deficiency	0 or 1; Is the population Vitamin A deficient?	<i>Lancet</i> 2008; 371: 243–60	In addition, China and Brazil are assumed to only have pockets of Vitamin A deficiency.
Zinc deficiency	0 or 1; Is the population zinc deficient?	<a href="http://www.unu.edu/unupress/food/fnb25-1s-IZiNCG.pdf">www.unu.edu/unupress/food/fnb25-1s-IZiNCG.pdf</a>	Where stunting and data from food balance sheets were not both available, zinc deficiency was assumed if either stunting rates were > 20% in children 18-59 months old or where food balance sheets predict a medium or high risk.
IPTp recommended	0 or 1	Malaria & Children; Roll Back Malaria at <a href="http://www.unicef.org/health/files/Malaria0831.pdf">www.unicef.org/health/files/Malaria0831.pdf</a>	By default, IPTp can only benefit populations where the government has recommended that IPTp be used.
Falciparum malaria exposure	Percent of the population at risk of exposure to falciparum malaria	<i>The Limits and Intensity of Plasmodium falciparum Transmission: Implications for Malaria Control and Elimination Worldwide.</i> Guerra CA, Gikandi PW, Tatem AJ, Noor AM, Smith DL, et al. <i>PLoS Medicine</i> Vol. 5, No. 2, e38	The percent of the population at risk of exposure to falciparum malaria is the population which can benefit from taking IPTp during pregnancy. Thus this acts as the affected fraction for IPTp.
Economic status	% of the population living on less than \$1 per day	Table 1 for the Human Development Report 2009 by UNDP.	Note that this only used to determine the percent of the population which can benefit from balanced energy supplementation (maternal) or complementary feeding education and supplementation. For the future, the percent of children living on less than \$1.25 will be used instead.

**Interventions, Indicators and Data Sources**

Interventions	Indicators	Baseline Data Source	Notes-Description	Formula
Periconceptual period				
Contraception*	see FamPlan	FamPlan Module in Spectrum		
Folic acid supplementation or fortification	% of married women receiving folic acid supplementation tablet or	Assumed to currently be 0 in all countries	5.0 mg folic acid per day for three months for women attempting to become pregnant	

Interventions	Indicators	Baseline Data Source	Notes-Description	Formula
	fortification at conception			
Safe abortion services	% of terminations that are performed safely (i.e. D&C, medically, vacuum aspiration)	Set at 0 for baseline		
Post abortion case management		Set at 0 for baseline		
Ectopic pregnancy case management		Set at 0 for baseline		
Antenatal period				
Antenatal care	% of pregnant women with at least 4 antenatal care visits	DHS or MPS WHR-05 if not available	This intervention has no impact itself. The components below are the interventions which impact mortality.	
TT- Tetanus toxoid vaccination	% of children protected at birth from tetanus (PAB)	WHO/UNICEF	% of women who received 2 doses of tetanus toxoid during this pregnancy or ever: Received at least 2 doses, the last within 3 years; Received at least 3 doses, the last within 5 years; Received at least 4 doses, the last within 10 years; Received at least 5 doses during lifetime. Also known as TT2+. <a href="http://www.who.int/immunization_monitoring/routine/immunization_coverage/en/index4.html">www.who.int/immunization_monitoring/routine/immunization_coverage/en/index4.html</a>	
IPTp – Pregnant women protected from malaria via intermittent preventive treatment of malaria during pregnancy or by sleeping under an ITN	% of pregnant women living in malaria endemic areas and receiving intermittent preventive treatment for malaria (2 doses of sulfadoxine-pyemthamine) or sleeping under an ITN	MICS/DHS via Malaria and Children Report <a href="http://www.unicef.org/health/files/Malaria0831.pdf">www.unicef.org/health/files/Malaria0831.pdf</a>	Only applies to countries with a program recommending IPTp and 1st or 2nd child	

Interventions	Indicators	Baseline Data Source	Notes-Description	Formula
Syphilis detection and treatment	% of pregnant women screened for syphilis with the rapid plasma reagent test and treated with 2.4 miu benzathine penicillin, if needed.			if ANC4 < 40%, then ANC4 *.2; ANC4 < 75%, then ANC4 *.5; ANC4 < 95% then ANC4 *.7; ANC4 >= 95%, then ANC *1.0
Calcium Supplementation	% of pregnant women taking 1g of calcium per day	No data currently available Set at 0 for baseline.		
Multiple micronutrient supplementation	% of pregnant women receiving micronutrient supplementation	set at 0 for baseline	The population at risk is all pregnant women. Multiple micronutrient supplementation is defined as receiving at least three micronutrients, typically including iron, folic acid, and another nutrient, often Vitamin A. Adequate receipt is for the duration of the pregnancy.	
Balanced energy supplementation	% of undernourished pregnant women receiving high protein and calorie dietary supplements	set at 0 for baseline	The proxy chosen for undernourished pregnant women is the percent of the population living on less than a dollar a day.	
Hypertensive disease case management	None known	None known	No effect modeled. A place holder for a future intervention.	
Diabetes case management	None known	None known	This only impacts stillbirths.	Set at 4% of ANC4
Malaria case management	% of pregnant women with malaria who are treated for malaria	Set at 0 for baseline	This intervention covers the entire period between contraception and 6 weeks after delivery.	
Magnesium sulfate for pre-eclampsia	None known	None known	This intervention includes appropriate magnesium sulfate injected for signs of pre-eclampsia.	Set at CEMOC value.

Interventions	Indicators	Baseline Data Source	Notes-Description	Formula
FGR – fetal growth restriction detection and management	None known	None known	This intervention includes detection of fetal growth restriction, including use of dopplar and other tools if needed. Management can include induction of labor or C-section, if needed.	Set at 50% of CEMOC value.
PMTCT**	see AIM	AIM Module in Spectrum	Note that this intervention covers all activities which occur between contraception and through the end of breastfeeding related to transmission of HIV.	
Child Birth				
Available data				
Facility based birth (InstDel)	% of infants delivered in a facility	DHS/MICS and MPS WHR-05, if otherwise unavailable	This intervention has no impact itself. The components below are the interventions which impact mortality. This is used to estimate coverage below.	NOTE: The value for SBA must be equal to or greater than InstDel. When one intervention is selected, the other must also be selected. The results will appear under ‘Delivery care and emergency obstetric care’.
Skilled birth attendance (SBA)	% of infants delivered by a skilled birth attendant	DHS/MICS and MPS WHR-05, if otherwise unavailable	This intervention has no impact itself. The components below are the interventions which impact mortality. This is used to estimate coverage below.	
Interventions				
Clean birth practices	% of neonates delivered with appropriate clean birth practices		This intervention is defined as hand washing before delivery, cleaning the perineum before birth, using a clean birth surface, clean cord cutting, including using a new or boiled blade or clean scissors, and clean cord typing.	It is assumed by default that all deliveries with a skilled attendant have clean birth practices. This should be changed if better data is available.
Immediate assessment and stimulation	% of neonates with appropriate drying and stimulation immediately after birth	None available.	This intervention is defined as immediate newborn assessment and stimulation, including drying	It is assumed by default that all deliveries with a skilled attendant have clean birth practices. This should be changed if better data is available.
Labor and delivery management	Dependant on the level of care and the facility delivery level.		Ideal indicator: Percent of deliveries with access to a specific level of care (i.e. SBA at home, SBA in a facility, BEmOC or CEmOC) if needed. Note: Access, ability to identify need and actual utilization in case of need are all required for this indicator to be applied. IN ADDITION, THIS INTERVENTION INCLUDES ALL RESIDUAL ACTIVITIES WHICH CAN BE DELIVERED AT THESE SKILL AND FACILITY LEVELS BUT CAN NOT BE	Dependant on the level of care and the facility delivery level.

Interventions	Indicators	Baseline Data Source	Notes-Description	Formula
			<p>QUANTIFIED SEPARATELY.</p> <p>An SBA in the home is defined as a skilled birth attendant who delivers the infant at home without benefit of referral to a facility in case of emergency.</p> <p>An SBA in a facility is defined as a medically skilled attendant who has the ability and facilities needed to monitor labor progress with a partograph and detect complications. Episiotomy is available, if needed. Infection control is covered under clean birth practices.</p> <p>A BEmOC level facility refers to management of delivery at a health center and covers case management of direct obstetric complications. The intervention includes: Case management of ante-partum hemorrhage, prolonged/obstructed labor, post-partum hemorrhage and severe infection. Methods include: shock management, pain relief, ABC, IV fluids, instrumental delivery and manual removal of the placenta and retained products. BeMOC includes seven signal functions that must be available. The signal functions modeled under this intervention are: Assisted delivery, removal of retained products, manual removal of the placenta. Although oxytocics, antibiotics and anticonvulsants should ALL be delivered at this level, they are modeled separately to show their impact. This intervention does NOT include MgSO4, AMTSL or antibiotics! Although these should be part of a basic emergency obstetric program and delivered at the same time, their effect is being calculated separately.</p> <p>A CEmOC level facility refers to management of delivery at a hospital and covers case management of direct obstetric complications. This is in addition to all interventions included in Basic Emergency Obstetric Care. This intervention includes: Case management of ante-partum hemorrhage, prolonged/obstructed labor, post-partum hemorrhage and severe infection. Additional methods include: ultrasound, culdocentesis, induction, laparotomy, salpingectomy, blood transfusion, caesarian section, hysterectomy, symphysiotomy, balloon tamponade, uterine ligature, MRVOP, surgical infection control and episiotomy. CEmoC includes nine signal functions. The signal functions modeled under this intervention are:</p>	

Interventions	Indicators	Baseline Data Source	Notes-Description	Formula
			Assisted delivery, removal of retained products, manual removal of the placenta, blood transfusion and c-section. Although oxytocics, antibiotics and anticonvulsants should ALL be delivered at this level, they are modeled separately to show their impact.	
Neonatal resuscitation			Percent of newborns with access to detection of breathing problems and resuscitation (with a mucus extractor) in a facility, if needed.	Dependant on the level of care and the facility delivery level.
Antenatal corticosteroids for preterm labor			Intramuscular injection of betamethasone sodium phosphate to women with suspected premature labor (6 mg, every 12 hours for 2 days) – target 2+ doses 12 hours before birth	Dependant on the level of care and the facility delivery level.
Antibiotics for pPRoM			Administration of oral erythromycin to women with premature rupture of membranes (PRoM) (250mg, 4 times daily for 7 days) who are not in labor to prevent PRoM	Dependant on the level of care and the facility delivery level.
Magnesium sulfate – management of eclampsia	% of women with eclampsia receiving IV MgSO4	Set at 0 for baseline	This anticonvulsant should be delivered at all BEmoC level facilities, however in practice, it is not always being done. This must be delivered in a facility.	Dependant on the level of care and the facility delivery level.
Active management of third stage of labor	% of women with access to active management of the third stage of labor	Set at 0 for baseline	This includes controlled cord traction to deliver the placenta, and oxytocics as well as massage. This should be delivered at all facilities considered to be BEmOC facilities. Currently we assume that few such facilities are actually delivering oxytocics.	Dependant on the level of care and the facility delivery level.
Induction of labor for pregnancies lasting 41+ weeks			Percent of women who are 41 or more weeks pregnant who are managed with induction of labor if needed.	Dependant on the level of care and the facility delivery level.
<b>Breastfeeding</b>				
Breastfeeding behavior	See breast feeding under national level data inputs	DHS or MICS	Note that this refers to the actual breastfeeding behavior, which can change based upon the age of the child as well as the observed/desired behavior.	The user can elect to use either breastfeeding behavior or breastfeeding promotion as the breastfeeding indicator of choice. Baseline breastfeeding status by

Interventions	Indicators	Baseline Data Source	Notes-Description	Formula
Breastfeeding promotion	% of mothers of children 0-11 months of age exposed to a breastfeeding promotion message	Baseline is percent of 1-5 month old children exclusively breastfed	Breastfeeding promotion can be either one-on-one or group meetings. It is assumed that children 1-5 months of age who are exclusively breast fed do not need breastfeeding promotion.	age is needed for both options.
Preventive after birth				
Preventive postnatal care	% of infants with a postnatal health contact/visit within 2 days of birth	set at 0 for baseline, unless available	This intervention includes clean cord care after cutting and skin hygiene, continued thermal care for all infants as well as detection of illnesses. Although this activity should include breast feeding counseling, the effect is not calculated here. NOTE: This indicator has no impact any longer, except through thermal care and clean postnatal practices.	Note: this indicator has changed over time and much of the data available refers to a postnatal visit for mothers delivering at home. Use this if nothing else is available.
Thermal care	None known		Percent of neonates whose mother delay's the infant's bath and who practices skin-to-skin to maintain thermal control of the infant.	Set to 'Routine postnatal practices'
Clean postnatal practices	None known		Percent of neonates where the mother washes her hands frequently, where the child lives in a clean environment, no harmful practices are performed.	Set to 'Routine postnatal practices'
Complementary feeding--education only	% of mothers intensively counseled on the importance of continued breast feeding after 6 months and appropriate complementary feeding practices	Set at 6-9 month old children receiving breastmilk and complementary feeding as baseline; See FAQ for notes on indicator selection.	This intervention only benefits children 6-24 months of age who are living on <u>more</u> than a dollar a day; This can be delivered in the home, community or clinic, by health professionals or health volunteers. It includes the assumption that breast feeding should be continued for children 6-24 months of age, (but does not affect breast feeding rates). The intervention includes education on the proper foods to prepare as well as appropriate hygiene for food preparation.	
Complementary feeding--supplementation and education	% of mothers of malnourished infants who are intensively counseled on the	set at 0 for baseline.	This intervention only benefits children 6-24 months of age who are living on <u>less</u> than a dollar a day; This can be delivered in the home, community or clinic, by health professionals or health volunteers. It includes the assumption that breast feeding should be continued for children 6-24 months of age,(but does not	

Interventions	Indicators	Baseline Data Source	Notes-Description	Formula
	importance of continued breast feeding after 6 months and appropriate complementary feeding practices as well as given appropriate supplements		affect breast feeding rates). The intervention includes supplementation of child, ranging from 100-1500 kcal per day, typically including micronutrients. As well as education on the proper foods to prepare and appropriate hygiene for food preparation.	
Improved water source within 30 minutes	% of homes with improved water	Joint Monitoring Program for Water and Sanitation	Progress on Sanitation and Water; 2010 Update. ( <a href="http://www.wssinfo.org/">http://www.wssinfo.org/</a> ) NOTE: The effect of this intervention is applied to the difference between this indicator and water connection in the home.	Ideal indicator would be 'improved water within 30 minutes', but this data is not available on a global scale. This indicator and 'water connection in the home' are linked. You cannot change one without the other. This value must be equal to or greater than 'water connection in the home'.
Water connection in the home	% of households with water piped into the home or yard	Joint Monitoring Program for Water and Sanitation	Progress on Sanitation and Water; 2010 Update. ( <a href="http://www.wssinfo.org/">http://www.wssinfo.org/</a> )	This indicator and 'Use of improved water source' are linked. You cannot change one without the other. This value must be equal to or less than 'improved water source'.
Improved sanitation – utilization of latrines or toilets	% of homes with access to an improved latrine or flush toilet	Joint Monitoring Program for Water and Sanitation	Progress on Sanitation and Water; 2010 Update. ( <a href="http://www.wssinfo.org/">http://www.wssinfo.org/</a> )	
Hand washing with soap	% of mothers washing their hands with soap appropriately	Curtis VA, Health Education Research, March 2009; all others set to 17% (global average)	Appropriate hand washing is defined as washing hands with soap, ash or other materials and using adequate water, after handling feces and before preparing food. Reported hand washing is not an adequate indicator. Neither is availability of hand washing materials. Observational data is required.	
Hygienic disposal	% of children	DHS survey	Children's stools are considered to be contained if:	

Interventions	Indicators	Baseline Data Source	Notes-Description	Formula
of children's stools	whose fecal matter is adequately contained		the child always uses a toilet/latrine, the feces are thrown in a toilet/latrine, the feces are buried in the yard	
ITN/IRS – Ownership of insecticide treated nets or indoor residual spraying	% of households with at least 1 insecticide treated net or covered by indoor residual spraying	MICS/DHS or Malaria and Children Report <a href="http://www.unicef.org/health/files/Malaria0831.pdf">www.unicef.org/health/files/Malaria0831.pdf</a>		
Vitamin A supplementation	% of children 6-59 months receiving full coverage with Vitamin A	Childinfo.org	Full coverage of Vitamin A supplementation is considered to be 2 doses of Vitamin A in the past year. See above definition of national Vitamin A deficiency. It is assumed that all children in a country with Vitamin A deficiency are in need of Vitamin A for prevention.	
Zinc supplementation	% of children 6-59 months supplemented daily with zinc	set at 0 for baseline	Daily supplementation with 10mg zinc. It is assumed that all children in a country with zinc deficiency are in need of zinc for prevention. See above definition of national zinc deficiency.	
<b>Vaccinations</b>				
BCG vaccine	Proportion of infants having received 1 dose of BCG vaccine prior to the survey	UNICEF	BCG vaccine has no impact on cause specific mortality of children less than 5 years of age.	
Polio vaccine	Proportion of infants having received 3 doses of polio vaccine prior to the survey	UNICEF	Polio vaccine has no impact on mortality of children less than 5 years of age.	
Pentavalent vaccine	Proportion of infants having received 3 doses of pentavalent vaccine prior to the survey	NA	Pentavalent vaccine includes DPT, Hib and HepB vaccines. HepB has no modeled impact on mortality in children less than 5 years of age.	
DPT vaccination	Proportion of	UNICEF	<a href="http://www.who.int/immunization_monitoring/routine/immunization_c">www.who.int/immunization_monitoring/routine/immunization_c</a>	

Interventions	Indicators	Baseline Data Source	Notes-Description	Formula
	infants having received 3 doses of diphtheria, tetanus and pertussis vaccine prior to the survey		<a href="#">overage/en/index4.html</a> . NOTE: This is only modeling the effect of the pertussis vaccine. The impact of tetanus and diphtheria are not being modeled.	
Hib vaccine	Proportion of infants having received 3 doses of Haemophilis influenzae type B vaccine prior to the survey	UNICEF	<a href="http://www.who.int/immunization_monitoring/routine/immunization_coverage/en/index4.html">www.who.int/immunization_monitoring/routine/immunization_coverage/en/index4.html</a>	
HepB vaccine	Proportion of infants having received 3 doses of Hepatitis B vaccine prior to the survey	NA	HepB vaccine has no modeled impact on mortality of children less than 5 years of age.	
Pneumococcal vaccine	Proportion of infants having received 3 doses of pneumococcal vaccine prior to the survey	set at 0 for baseline	Will be implemented in some countries routinely in 2009.	
Rotavirus vaccine	Proportion of infants having received 3 doses of rotavirus vaccine prior to the survey	set at 0 for baseline, unless reported data available from UNICEF	Not yet implemented in most countries routinely. Data used ins reported coverage by the countries. <a href="http://www.who.int/immunization_monitoring/en/globalsummary/time-series/tscoveragebcg.htm">www.who.int/immunization_monitoring/en/globalsummary/time-series/tscoveragebcg.htm</a>	
Measles vaccine	Proportion of infants having received 1 dose of measles containing vaccine (MCV) prior to the survey	UNICEF	<a href="http://www.who.int/immunization_monitoring/routine/immunization_coverage/en/index4.html">www.who.int/immunization_monitoring/routine/immunization_coverage/en/index4.html</a> ; Use MCV1. If data on supplemental vaccination and second opportunity are available, they can also be modeled.	

Interventions	Indicators	Baseline Data Source	Notes-Description	Formula
Curative after birth				
Maternal sepsis case management		Set to 0 at baseline	No effect modeled. A place holder for a future intervention.	
KMC - Kangaroo mother care	% of low birth weight infants with access to kangaroo mother care	set at 0 for baseline	Kangaroo mother care is defined as: continuous skin-to-skin contact between a mother and her newborn as well as frequent and exclusive breast feeding. Note that this intervention only impacts deaths attributable to prematurity and <i>must</i> be given in a facility.	
Oral antibiotics: case management of severe neonatal infection	Proportion of neonates with suspected pneumonia, sepsis or ARI in the 2 weeks preceding the survey treated with antibiotics	Set at 0 for baseline	Note: The sum of oral antibiotics, injectable antibiotics and full supportive care must be less than or equal to 100%.	
Injectable antibiotics: case management of severe neonatal infection	Proportion of neonates	Set at 0 for baseline	Note: The sum of oral antibiotics, injectable antibiotics and full supportive care must be less than or equal to 100%.	
Full supportive care: case management of severe neonatal infection	Proportion of neonates with serious infections with oxygen, IV antibiotics, IV fluids, blood transfusion, phototherapy, etc. available	set as a function of facility births	Facility based care only. Note: The sum of oral antibiotics, injectable antibiotics and full supportive care must be less than or equal to 100%.	InstDel <30, InstDel*.1; InstDel <50, InstDel*.2; InstDel <95, InstDel*.5, InstDel >=95, InstDel*.8
ORS – oral rehydration solution	% of children with diarrhea given ORS from sachets	DHS	This includes sachets or pre-mixed solutions of ORS.	
Antibiotics - for treatment of	% of children with dysentery	DHS, if available; else, set at case management for	Typical treatment is 3 days of 250mg of ciprofloxacin.	

Interventions	Indicators	Baseline Data Source	Notes-Description	Formula
dysentery	treated with antibiotics	pneumonia, if available; otherwise 50% of ORS	This data is typically not available. Use DHS data if available.	
Zinc for treatment of diarrhea	% of children 0-59 months with diarrhea receiving zinc supplementation	DHS, if available; else set at 0 for baseline	20mg of zinc supplementation daily for 14 days	
Oral antibiotics – case management of pneumonia in children	Proportion of children 1-59 months with suspected pneumonia or ARI treated with antibiotics	Childinfo.org; DHS	This is not available for many recent DHS surveys.	
Vitamin A - for treatment of measles	% of measles cases treated with Vitamin A	Set at the percent of children receiving 2 doses of Vitamin A, UNICEF, as baseline	Typical treatment is 2 days of Vitamin A supplementation, ranging from 50,000 IU to 200,000 IU, based upon the age of the child. This information is not typically available.	
Antimalarials – artemisinin (ACT) compounds for malaria	Proportion of children 0-59 months with a fever receiving an ART for malaria treatment within 48 hours	Childinfo.org	NOTE: The historic indicator was any appropriate antimalarial. The better indicator for the future is ACT coverage.	
Therapeutic feeding – for severe wasting	% of wasted children receiving therapeutic feeding	Set at 0 for baseline	Therapeutic feeding is outpatient treatment for severely wasted children (<-3Z) including supplementation with food (such as PlumpyNut) and maternal education.	
Cotrimoxazole**	see AIM	AIM Module in Spectrum		
Child ART**	see AIM	AIM Module in Spectrum		

Colored text indicates that coverage is not estimated directly but is calculated with respect to another indicator.

## ANNEX II: EASYLIST “CHEAT” SHEET

### 1. *Open Spectrum*

#### 2. *Create a new Projection*

- a. Go to the ‘Home’ tab of the Spectrum menu and select ‘New projection’.
- b. Go to the ‘Home’ tab of the Spectrum menu and select ‘New projection’.
- c. Enter a projection file name (i.e. mali-mdg.pjn).
- d. Select the first and final years of the projection.
- e. Choose the appropriate modules
  - i. Child Survival (LiST).
  - ii. AIM (if working in a country with a significant HIV+ population).
  - iii. FamPlan (if interested in the impact of contraception).
- f. Click EasyProj
  - i. Select the country of interest.
  - ii. OK.
- g. Save this baseline Projection
  - i. Under the ‘Home’ tab on the Spectrum menu, Click Save Projection.
  - ii. OK.

#### 3. *Enter EasyLiST*

- a. Under the ‘Modules’ tab of the Spectrum menu, click EasyLiST.
- b. Choose the ‘Configure Years’ button
  - i. Enter the ‘First year of intervention program’ (this is the year that the scale-up will begin).
  - ii. Enter the ‘Target year of coverage’ (this is the year at which full scale up should have occurred).
  - iii. OK.
- c. Choose the Interventions to change
  - i. Click the check-box associated with the interventions of interest.
  - ii. Change the target value of the checked interventions, if needed.
- d. Select the display of choice
  - i. Press on the ‘Add results’ button at the bottom , scroll through the indicator choices.
  - ii. Once selected, click on the ‘Configure button’ and chose the appropriate display.
- e. If additional changes are made to the data, you must click the ‘Add results’ button again.

#### 4. *Save the Projection with the Coverage Changes*

- a. Close EZLIST.
- b. On the option button ‘Transfer values to current loaded projection’ click yes.
- c. Under File on the Main Menu, Click Save Projection As and rename (twice).

## EXPERTLIST “CHEAT SHEET”

### Quick analysis steps

1. Create or Edit a projection so that it contains all of the appropriate baseline data. This includes checking and adjusting the configuration years, coverage and health status, mortality and economic status sections. Save this with a name which indicates that it is your baseline projection.
2. Open the baseline projection and rename it as the scale-up of interest. Edit the coverage values to create the scale up as desired. Save these changes. Check the results by looking at the ‘Additional deaths averted by intervention’ to ensure that only the interventions of interest display any changes (excluding the HIV interventions) and that the first year of intervention has 0 deaths averted. Correct as needed. When finished save changes and close the projection.

*Hint: Repeat step 2 as many times as necessary to create all the comparisons of interest.*

*Hint2: If you are interested in including Family Planning or AIDS interventions in addition to the MNCH analysis, there are additional cheat sheets which address those issues.*

3. Open the baseline projection and up to 9 additional projections of interest. They will only open if the configuration years are identical for all projections.
4. Display the results and choose ‘copy all’ to copy the relevant tables into Excel. Use the ‘PrintScreen’ function on your keyboard to export figures to either Word or PowerPoint.

### Detailed Analysis steps

1. Install Spectrum/LiST and open your country projection.
2. Click ‘Modules’ on the top toolbar and Click ‘LiST’ under the MNCH options. The horizontal tool bar will appear directly below the menu tabs.
3. Select ‘Configuration’, the first item on the horizontal tool bar, from the left hand side.
4. The ‘Base year of coverage’ refers to the year in which you have BOTH cause of death and coverage data. It is set by default to 2008. Only change this if you have cause of death data from another year. Select that year as your base year of coverage and adjust ALL other data in LiST appropriately.
5. The ‘First year of intervention program’ refers to the baseline year from which you are calculating the impact of a specific coverage change (i.e. a program to introduce rotavirus vaccine starting in 2012; the first year of intervention program would be 2011, the baseline year of comparison). Click OK when finished.

*HINT: It is always a good idea to save your changes as you go along to prevent the loss of data. Remember to ‘Save As’ when you start working on a new projection (set of data) so you can return to your original projection if needed.*

6. Select ‘Health Status, mortality, and economic status’ from the horizontal tool bar, the second item from the left hand side.

7. Note that the 'baseline year' should be the same year as the 'Base year of coverage', which is the year for which cause of death data is available. All data on these tabs should be from as close as possible to that year. Correct all data on all tabs if necessary. If you are unsure, the default data can remain.
8. Select 'Coverage', the third item on the horizontal tool bar, from the left hand side.
9. Edit the coverage values for the base year to the first year of intervention. To change the coverage values independently for items which are linked to other coverage values, follow the directions at the top of each coverage editor screen as to which box to "uncheck". This will de-link the items.

*HINT: If you would like to make this first projection a "do nothing" scenario, where the intervention coverage is by default held constant from the first year of intervention, do not change the default values after the first year of intervention and proceed to step 1.*

10. Edit the coverage values from the first year of intervention to the target year. An easy way to change this coverage for is to set the coverage in the target year and highlight from the first year of intervention to the target year. Then right click and scroll to "interpolate".

*HINT: In the first projection you create, you will make changes to the intervention coverage after the first year of intervention only if you want this "base" projection to be something like a "low" intervention scenario (compared to medium and high for example).*

11. Review the effectiveness of interventions editors, then click "Ok". Unless you are a researcher modeling hypothetical changes in the effectiveness of interventions such as vaccines, it is unlikely that you will want to change the effectiveness default values.
12. Return to the 'Home' tab of the Spectrum menu and click Save. You now have your "Scenario 1" projection.
13. If you would like to create alternate scenarios to compare against scenario 1, (AFTER you have saved Scenario 1, and Scenario 1 is open (you will see the title you may go to the 'Home' tab and click Save As. Then give the new projection a name that will show you it is a comparison to the Scenario 1 (e.g. Senegal Vaccines II).
14. Do not change the baseline health, mortality or economic status from Scenario 1, or the intervention coverage between the baseline year to the first year of program intervention. Otherwise Scenario II will not compare accurately against Scenario 1 in terms of the impact of change in intervention coverage. When you have finished all coverage editors, click "ok". Be sure to save your Scenario 2. Close Scenario 2.
15. Repeat steps l-m as many times as necessary to create alternate comparisons to Scenario 1. Please note, when you are working with multiple projections, be sure that you are editing in the one you want to be making changes in, The title of the projection that you are currently 'in' will be highlighted in BOLD at the bottom of the screen.
16. To display the results of your projections, close all projections and begin by opening the projection you want to compare against (usually Scenario 1). Please note, whichever projection you open first will display first in the results tables. Then open the projections you want to compare against the first, in the order that you want the comparison.

17. Select 'Results' from the LiST menu and choose your category and indicator for display.
18. The Configure box should appear. On this page, choose the Chart type of interest. It can be tables, pie charts, graphs etc, depending on the result chosen. Select the first year and final year to match the years of interest in the projection. i.e. the first year should be the 'first year of intervention program'. Under the results, excluding PMTCT, Cotrimoxazole and ART, only interventions selected by the user should appear to have any deaths averted. If that is not the case, then an error has been made. In addition, the deaths averted in the first year of intervention program should all be 0. Make any necessary corrections. Save and Close the projection.

*HINT: This does not affect any calculations, but limits the displays to those years of interest.*

# RUNNING AN AIM-LiST ANALYSIS “CHEAT” SHEET

## 1. *Open Spectrum*

### 2. *Open the country projection of interest*

- a. Go to the modules tab of the Spectrum menu and select LiST.
- b. Click the Configuration tab.
- c. Do NOT change the “base year of coverage” unless you have new cause-of-death data. The ‘First year of intervention program is the baseline year from which you want to calculate your scale-up from. Click OK when finished.
- d. Click “Close”. Under the “home” tab of the Spectrum menu, select ‘Save Projection As’ and rename the file.

### 3. *Choose the new file that you just saved*

- a. Under the home tab of the Spectrum menu select “Open projection and choose the new file that you have just saved.
- b. Choose “Load and rename” when a window pops up that asks “Projection is already loaded, what would you like to do?”
- c. Rename the file to indicate that you are doing an AIM analysis.
- d. When you are finished you should have two projections, with different names, but with identical data. You will see the projection names at the bottom right corner of the screen.

## 4. *Begin work in AIM*

- a. From the modules tab of the Spectrum menu, select AIM.
- b. Choose the projection in which you want to change the coverage of the AIDS interventions.
- c. Six tabs will appear: Program statistics, eligibility for treatment, Incidence, Sex/Age pattern, Advanced options, and Results. Default data will be provided. You will likely not want to change the default data, unless you have more recent treatment or incidence data through the EPP file prepared by the statistics division of the National AIDS commission, or you are working on a sub-national projection with significantly different estimates. Adult ART does not affect child mortality estimates.
- d. To change the ‘Maternal-to-Child Transmission’ values, click the “Program statistics’ tab and then ‘MTCT’.
- e. Enter the yearly values for the prophylaxis/treatment options. For any given year, choose either the number or percent option. If you select number, then percent should equal 0; if you select percent, then number should equal 0. The No prophylaxis percent and Total Number change automatically. When finished, click ‘Breastfeeding’, and enter values for appropriate years for those not receiving ARVs and those receiving ARVs.
- f. When finished, click ‘Breastfeeding’, and enter values for appropriate years for those not receiving ARVs and those receiving ARVs.

- g. Then, in the ‘Child treatment’ tab edit the number/percent receiving cotrimoxazole and ART as needed. Then click “Ok”.
- h. Review the CD4 count threshold for eligibility for treatment by age, under “Child” in the ‘Eligibility for treatment tab’. Then click “ok”.
- i. To input incidence, you may do so through the ‘Configuration’ choice in the drop-down menu under Incidence or through the ‘Direct incidence option’ in the same menu. The ‘Direct incidence option also allows for the input of prevalence, if the user chooses to do so instead of incidence.
- j. The ‘Sex/Age pattern’ and ‘Advance options’ default values should also be reviewed, but it is unlikely that the user will want to deviate from the default values provided by research experts. When finished, click “Ok” in the bottom left hand corner of the screen. Under the ‘Home’ tab of the spectrum menu select “Save projection’ and choose the projection you have just altered (i.e. Senegal-AIM).

**5. Display results**

- a. From the modules tab of the Spectrum menu, select LiST.
- b. Choose the display of interest. Typically one will want to look at ‘Additional Deaths prevented in children under 5 years of age relative to impact year’, which is under ‘Child’ in the ‘Results’ tab.
- c. The lives saved by each intervention is the difference between the baseline and the AIM projection. In the example below, PMTCT saved  $274 - 37 = 237$  lives.

Additional deaths prevented in children under-five years of age by intervention relative to impact year (Total (0-60 months))						
	2010	2011	2012	2013	2014	2015
<b>Senegal</b>						
<b>Pregnancy</b>						
PMTCT	8	13	20	27	32	37
<b>Curative after birth</b>						
Cotrimoxazole	4	7	9	11	12	12
ART	29	20	18	15	9	4
<b>Senegal-AIM</b>						
<b>Pregnancy</b>						
PMTCT	8	34	85	148	212	274
<b>Curative after birth</b>						
Cotrimoxazole	4	60	118	174	221	262
ART	29	65	145	207	255	307

## SUB-NATIONAL PROJECTION “CHEAT” SHEET

### 1. *Collect data on:*

- a. Population of the sub-national region and Population of the nation in the same year.
- b. TFR of the sub-national region and the TFR of the nation in the same year.
- c. CPR of the sub-national region and the CPR of the nation in the same year (option: if you are using the family planning module).
- d. HIV prevalence and HIV treatment data in the sub-national region and HIV prevalence and HIV treatment data in the nation in the same year (optional: only needed if you are using the AIM module OR there is a significant HIV epidemic).
- a. Births, population information and census data since 1970 (optional: to be used as quality control).

### 2. *Open the country projection of interest and enter AIM data*

- a. Go to the Home tab of the Spectrum menu, and use ‘Open projection’ or ‘New projection’ to open the country projection of interest.
- b. If HIV is active, you must click on the Modules tab of the Spectrum Menu and select AIM.
- c. Under the incidence tab, select “Direct incidence input”.
- d. Copy the ‘HIV prevalence’ trend into Excel. Multiply by the ratio of the sub-national region to the national. Paste these new values back into the HIV prevalence.
- e. For PMTCT, Adult ART, and Child treatment: All numbers need to be converted into percents. Use the outputs in the Results, Child 0-14, Summary to see the number in need and the number receiving PMTCT and the Child Treatment options. Use the Results, Adult 15-49, Summary to see the number in need and the number receiving Adult ART. Calculate the percent receiving by dividing the number receiving by the number in need and then multiplying. The value should be 0-100.
- f. Replace all numbers with percents. Ensure that the number row only has zeros in it.
- g. If you have sub-national treatment data in numbers, enter of the values directly, but calculate the number in need AFTER making the population changes.

### 3. *Edit DemProj data*

- a. Go to the ‘Home’ tab of the Spectrum menu and select DemProj. Go to ‘Demographic Data’.
- b. Change the ‘International Migration’ values to 0.
- c. Multiply the ‘First year population’ by the ratio of the sub-national region to the national
- d. (The ratio value should be between 0- and 1).
- e. Copy the ‘TFR’ trend into Excel and multiply by the ratio of the Sub-national TFR to the national TFR (value likely to be 0.6 to 1.4). Replace the old TFR values with these new ones.

*HINT: If there is note linking TFR to FamPlan, you must go to the Projection Manager and turn FamPlan off (uncheck the box). Once you have completed step 3e, you may return to the Projection Manager and turn FamPlan on (recheck the box).*

- f. If the 'CPR' in the sub-national region is significantly different than that found in the national area, one should also replace the CPR with the sub-national value. If possible, collect data from multiple surveys and calibrate at multiple points. Assume that the time when contraception was first used is the same in the sub-national region as in the nation.
- g. If you have census data or other data which confirms the total population or the total births, check that now. If the values are different, then make minor adjustments to the values discussed above. This is a trial and error process. Also, remember to check the number of HIV deaths compared to any data you have available.

# RUNNING A FAMPLAN LiST ANALYSIS “CHEAT” SHEET

## 1. *Open Spectrum*

### 2. *Open the country projection of interest*

- a. Go to the modules tab of the Spectrum menu and select LiST.
- b. Click the Configuration tab.
- c. Do NOT change the “base year of coverage” unless you have new cause-of-death data. The ‘First year of intervention program’ is the baseline year from which you want to calculate your scale-up from. Click OK when finished.
- d. Click “Close”. Under the “home” tab of the Spectrum menu, select ‘Save Projection As’ and rename the file twice.

### 3. *Choose the new file that you just saved*

- a. Under the home tab of the Spectrum menu select “Open projection” and choose the new file that you have just saved.
- b. Choose “Load and rename” when a window pops up that asks “Projection is already loaded, what would you like to do?”
- c. Rename the file twice to indicate that you are doing an FamPlan analysis.
- d. When you are finished you should have two projections, with different names, but with identical data. You will see the projection names at the bottom right corner of the screen.

## 4. *Begin work in FamPlan*

- a. From the modules tab of the Spectrum menu, select FamPlan.
- b. Choose the projection in which you want to change the family planning information.
- c. If you plan on altering the Contraceptive Prevalence Rate (CPR) in your population, click on the ‘Goal’ tab.
- d. By default, the CPR is set to match the values in the most recent survey and then extrapolated to the end of the projection to maintain the UN Population division TFR estimates. Change the values in the target year and use the interpolate and duplicate functions as needed. Click OK.
- e. If you want to change the proportion of women using different methods for contraception, click on the ‘Family Planning’ tab.
- f. Choose the ‘Method Mix’ tab. Adjust the proportions of women using different contraceptive methods. The total must equal to 100%. Use the duplicate, interpolate and normalize functions as needed. When finished, Click OK.

*HINT: If you have a different goal, i.e. TFR, or unmet need, you will need to visit the ‘Configuration’ button first and read the FamPlan manual.*

**5. Display results**

- a. From the modules tab of the Spectrum menu, select LiST.
- b. Choose the display of interest. Typically one will want to look at ‘Deaths in children under 5 years of age’, which is under ‘Child’ in the ‘Results’ tab.
- c. As you can see below, there are fewer deaths in the population in which the contraceptive prevalence was increased. This occurs due to the reduction in the number of pregnancies and births. There is no impact on the mortality rates.

Deaths in children under-five years of age 						
	2010	2011	2012	2013	2014	2015
<b>Senegal</b>						
<b>Total (0-60 months)</b>	51,030	51,776	52,465	53,083	53,595	54,037
<b>&lt;1 month</b>	15,633	15,823	15,993	16,150	16,293	16,423
<b>1-59 months</b>	35,397	35,953	36,473	36,933	37,302	37,614
<b>Senegal-FP</b>						
<b>Total (0-60 months)</b>	51,030	51,427	51,600	51,593	51,406	51,089
<b>&lt;1 month</b>	15,633	15,716	15,729	15,697	15,628	15,527
<b>1-59 months</b>	35,396	35,711	35,871	35,896	35,779	35,563