

SurvCost

A TOOL TO ESTIMATE THE
COST OF INTEGRATED DISEASE
SURVEILLANCE AND RESPONSE



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SurvCost

A tool to Estimate the Cost of Integrated Disease Surveillance and Response

SurvCost 1.0 Beta Test Version

Centers for Disease Control and Prevention (CDC), National
Center for Prevention, Detection and Control of Infectious
Diseases (NCPDCID), Division of Emerging Infections and
Surveillance Services (DEISS)

Atlanta, Georgia, USA

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DISCLAIMER

The numbers generated through *SurvCost* should be treated as estimates rather than considered as actual or true costs of a surveillance system and IDSR program. Not all potential scenarios in terms of economic costs could be included in this model.

The methodology, findings and conclusions presented in this manual and in the accompanying tool are those of the authors and do not necessarily represent the views of the Centers for Disease Control and Prevention (CDC), the World Health Organization Regional Office for Africa (WHO-AFRO), and the United States Agency for International Development (USAID).

SYSTEM REQUIREMENTS

SurvCost uses the Windows* operating system (Microsoft Windows 2000 or higher) and Excel (Microsoft Office 2000 or higher). We recommend using a computer with at least a 486 Pentium processor and at least 128MB RAM. ***SurvCost*** requires up to 2 megabytes of storage space on the computer's hard drive.

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1 INTRODUCTION

1.1 Background

Communicable diseases are the most common causes of death and disability in the African region. Murray and Lopez estimated that, in 2000, 2.43 million children under 5 years of age died in Africa of infectious and parasitic disease (1). In addition to this human toll, the economic cost in terms of prevention, treatment, and loss of productivity is enormous (2, 3).

In sub-Saharan Africa, many disease-specific surveillance and response systems involve similar functions and often use the same structures, processes and resources, especially at the level of district and primary health facility. In 1998, the Regional Committee of the World Health Organization Africa region (WHO/AFRO) adopted a strategy for improving the availability and use of data to better detect and respond to priority diseases. This strategy is called Integrated Disease Surveillance and Response (IDSR) (4, 5). Under the IDSR strategy, country select a number of priority of diseases and health risk conditions to monitor, with the goal of combining surveillance activities and resources to collect data that will help improve public health responses (6). There are 19 priority diseases recommended by AFRO to be routinely surveyed under IDSR guidelines (Figure 1). These guidelines involve the following core activities and functions: 1) surveillance for the 19 diseases (or a sub-set selected by the adopting country), consisting of case detection, notification, data analysis and interpretation, feedback provision, 2) outbreak response, comprising of case investigation and control and treatment of confirmed cases; 3) support functions, such as supervision and monitoring, training, and resources and social mobilization; and 4) provision of resources for detecting and responding to priority diseases and conditions.

Implementation of the IDSR started in some of the WHO/AFRO Member countries in 2000. These countries commit national resources to public health surveillance and response systems each year. They also receive technical and financial support from WHO, other international agencies, national partners, and private foundations to strengthen national capacities in terms of human resources, laboratories, data management, reporting, and epidemic response. However, little is known about the investment and implementation costs of this IDSR strategy.

As a result, the IDSR task force that guides the implementation of this regional strategy has recommended cost analyses of the IDSR systems in the sub-Saharan Africa. In this context, we developed a spreadsheet tool, called SurvCost, for measuring the incremental or additional costs of establishing and subsequently operating IDSR-related activities.

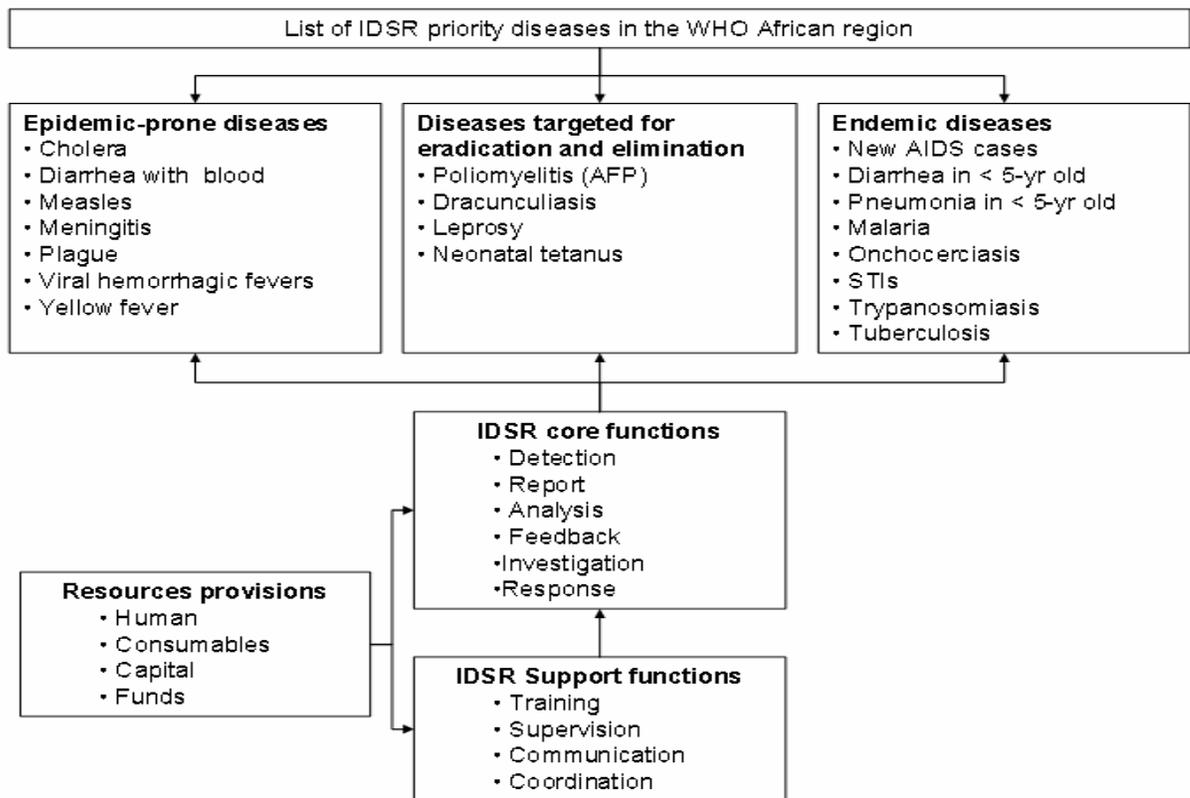


Figure 1: Recommended IDSR priority diseases, core activities and functions in the WHO African region (3)

1.2 Cost-Analysis

Cost analysis is a way to gather and structure information about the costs for ministries of health, program managers, and other stakeholders and donors in countries with existing programs as well as those interested in adopting or funding the IDSR strategy. These cost data can stimulate the development of new and better ways of

carrying out program activities. Additionally, cost data can be used to project future program needs, an essential element in the fundraising process.

1.3 Aim and intended audience

SurvCost has been developed using Microsoft Excel/Visual Basic to meet the needs of decision-makers for relevant and consistent cost information. This tool is intended for countries that are integrating and strengthening their infectious disease surveillance systems.

SurvCost was designed to assist:

- **economists and health service researchers** who conduct and appraise the cost of disease surveillance and intervention programs at the local, provincial, and national level,
- **program staff and policy-makers** who use cost information for the purpose of funding disease surveillance programs. Program staff at the country level will be able to use *SurvCost* to compare program costs in different settings in their own country or other countries in the region,
- **ministries of finance and international development agencies** who sponsor health programs in the country. This audience may wish to use these cost data to help prepare the terms of reference for future economic evaluations and may consider sharing these data with their grantees.

1.4 Structure of the manual

This manual assumes that the reader is already familiar with the basic methods of disease surveillance and economic evaluation of health intervention programs, so lengthy explanations have been avoided. However, a number of examples are provided to illustrate some of the more challenging aspects of resource allocation with particular relevance to national disease surveillance programs and IDSR-only activities. In this manual, you will find after this introductory chapter (**Section 1**):

- **Section 2** - describes the range of data sources that could be used to gather information about the cost of disease surveillance activities.
- **Section 3** - describes the different features of *SurvCost*.

- **Section 4** - provides guidance for loading and starting the tool.
- **Section 5** - describes the data collection process for each category of resources used for disease surveillance.
- **Section 6** - focuses on how to estimate, present, and interpret the cost data.

2 SOURCES OF COST DATA

In this assessment, you will need data associated with surveillance of all diseases and/or IDSR-only related activities. These data may be obtained from disease surveillance budget and program records, aggregated pharmacy, clinical and medical records, and from interviews with IDSR program coordinators and public health staff. Since the sources of data may be located in different Ministry offices and levels of the health system, the survey instrument shown in Appendix 1 may be useful to you in identifying the appropriate sources of data (and contact persons, if possible) at your local health system level that will be able to provide the requested data for this area.

For each country, region/province and district, you will need to collect data on all the resources used in the process of disease surveillance activities. These include capital (a one-time purchase) and recurrent (on-going) items, donated items, volunteer time, and resources provided through other activities.

Capital items would include:

- building infrastructure
- program vehicles
- equipment (e.g. refrigerator, computer, microscope, etc.)
- furniture (e.g. tables, chairs, etc.)

Recurrent items are:

- personnel salary (salaries, benefits, etc.)
- office (supplies, utilities, rent, and maintenance)
- transportation (vehicle operation and maintenance)
- laboratory materials and supplies
- medications and vaccines

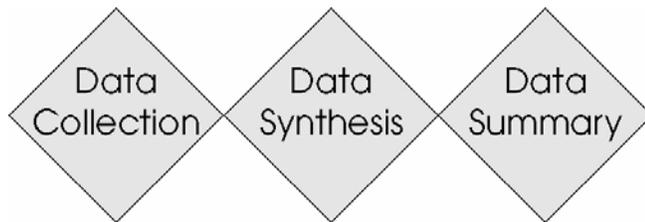
- social mobilization and sensitization and media campaigns

The survey instrument also collects information on other variables related to disease surveillance activities, such as time of operation of the facility, vehicles or equipment per year.

3 OVERVIEW DESCRIPTION

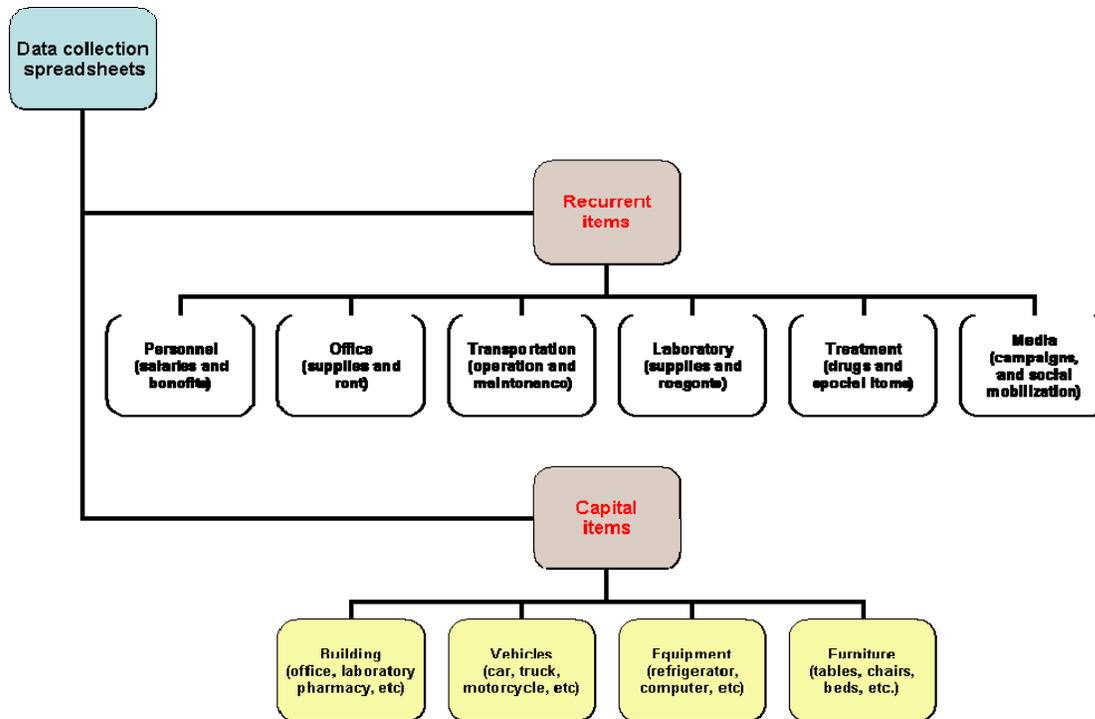
SurvCost is composed of three different types of spreadsheets linked together by formulas. These spreadsheets are divided into:

- Data Collection or Entry - helps you gather information
- Data Synthesis or Results- calculates costs
- Data Summary - provides aggregated totals for each category



3.1 Data Collection Spreadsheets – Data entry required

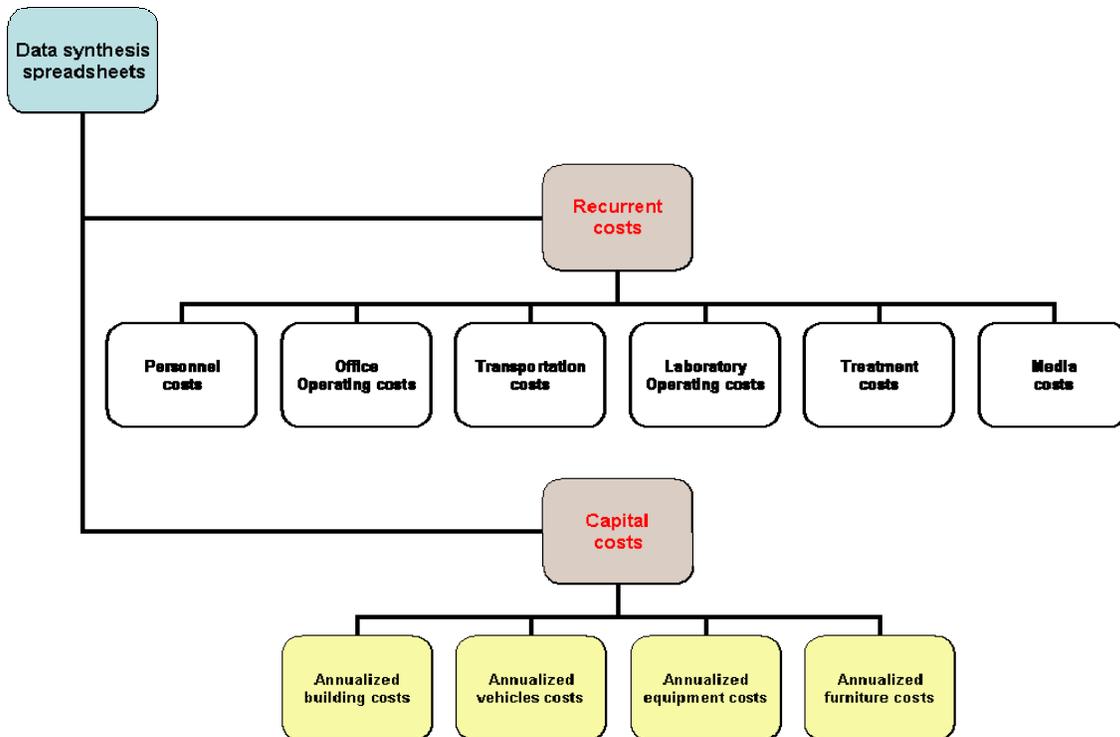
The data collection spreadsheets are designed to help you collect data on all of the resources used, including capital and recurrent items. The diagram below explains how the items are grouped. You will enter cost data concerning personnel; office consumable goods; transportation; media; drugs or treatment and laboratory supplies in the “recurrent items” section. Under “capital items” you will enter the costs for office and laboratory buildings, vehicles, equipment and furniture.



Each data collection spreadsheet will also help you collect information on variables related to disease surveillance activities, such as length of time of operation of the facility, vehicle or equipment use per year, and resources provided through other activities and organizations. For each category of resources, you should record cost data for all national diseases surveillance activities, and then identify the proportion of those activities that were due to IDSR based on estimates of staff workload or actual use of resources (if such estimates/ records are available).

3.2 Data Synthesis Spreadsheets – No data entry required

For each category of resources, all data input are referred to a data synthesis sheet where costs are directly calculated. You do not enter data in this sheet. The calculations are done for you.



The total cost of individual items of each category is calculated as the costs of non-surveillance and surveillance activities based on the actual amount of resource use or personnel time on all disease surveillance activities that were also broken down by non-IDSR and IDSR-related activities at the health facility.

$$\text{Non-Surveillance Costs} + \begin{array}{c} \text{non-IDSR} \\ \text{IDSR} \end{array} \text{ Surveillance Costs} = \text{Total Costs}$$

The total cost using this formula is the non-surveillance activities cost plus the surveillance activities cost.

$$\text{Total cost} = \text{Non-Surveillance cost} + \text{Surveillance cost}$$

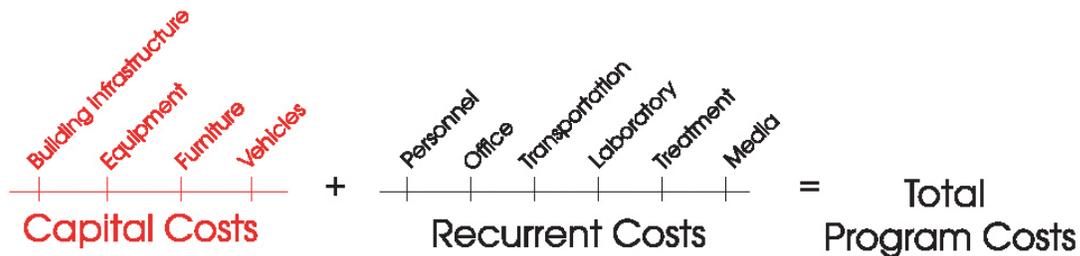
The surveillance cost is proportioned out into the costs of all non-IDSR and only IDSR-related activities based on the proportion of personnel time or actual amount of resources of all disease surveillance activities devoted to only IDSR-related activities.

$$\text{Surveillance cost} = \text{non-IDSR cost} + \text{IDSR cost}$$

These cost results are expressed in local currency and US dollar equivalents using the annual average exchange rate in the country.

3.3 Data Summary Spreadsheet – No data entry required

These individual costs, in turn, are linked to summary sheets where aggregated costs of national disease surveillance and IDSR activities across all resource categories are calculated.

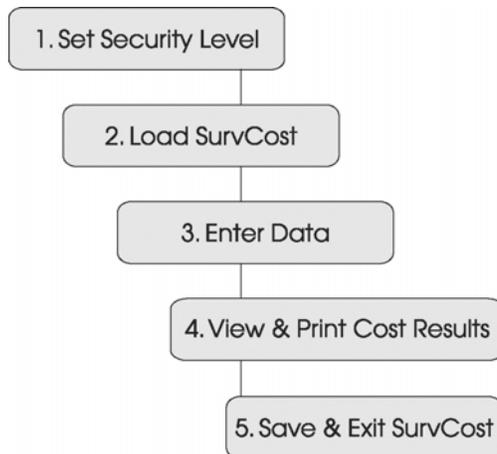


The total program costs using this chart represent the aggregated costs of all capital and recurrent resources used on the program activities at the health facility.

SurvCost can also calculate the average costs per capita for surveillance and IDSR-related activities. This is done by using the total costs for all categories of resources and population estimates for the health structure level under evaluation.

4 USING SurvCost

Now that you have gathered your data, you are ready to begin using SurvCost to calculate your costs. The basic tasks you will perform when using SurvCost are:

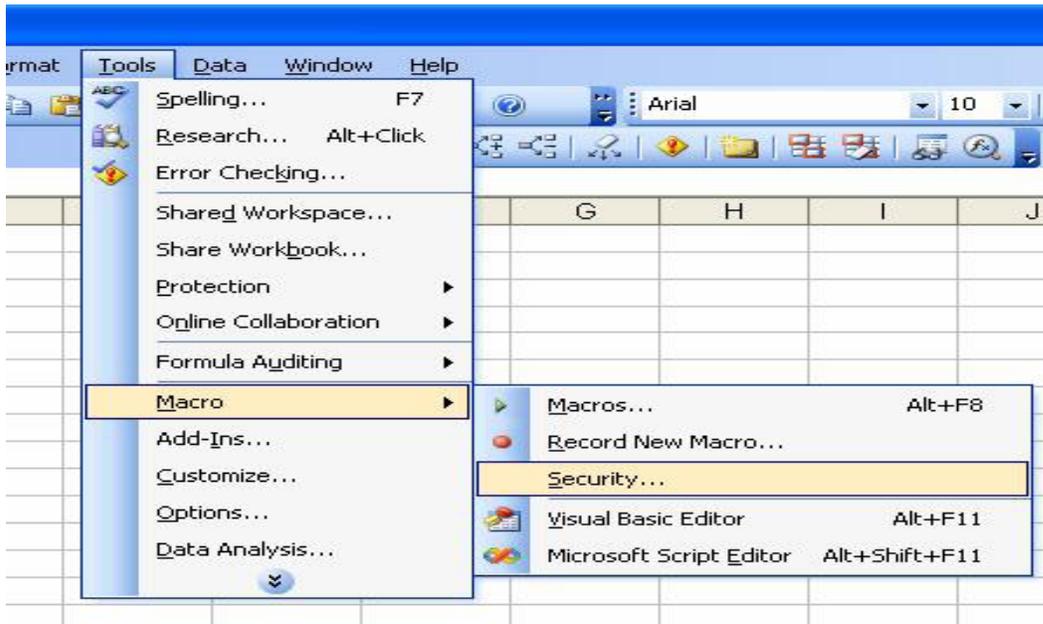


4.1 Setting Excel's security level

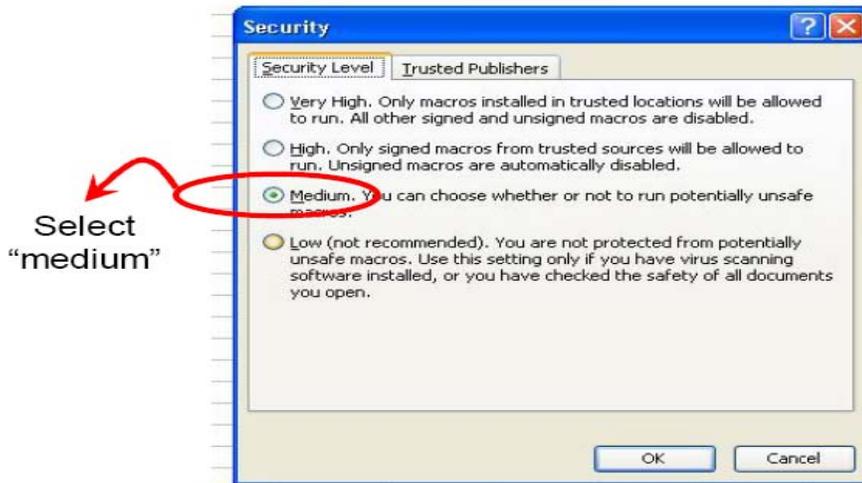
Because *SurvCost* uses Excel Macro technology, you should set **Excel's security** to the appropriate level before loading and starting the tool. If you change the security level after *SurvCost* is opened, the tool will not work. You may follow these steps to set the Excel's security level:

Step 1 – Open a Blank Excel file.

Step 2 – Click **Tools** and then click on **Macro**, choose **Security** as shown below.



Step 3 – Set Security Level to Medium (see diagram below).

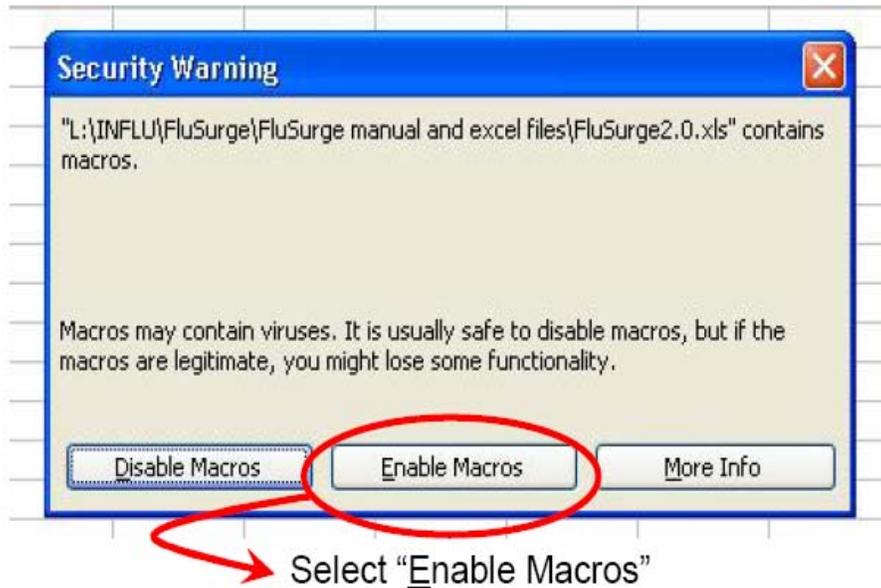


Step 4 – Click OK and now you are ready to open *SurvCost*.

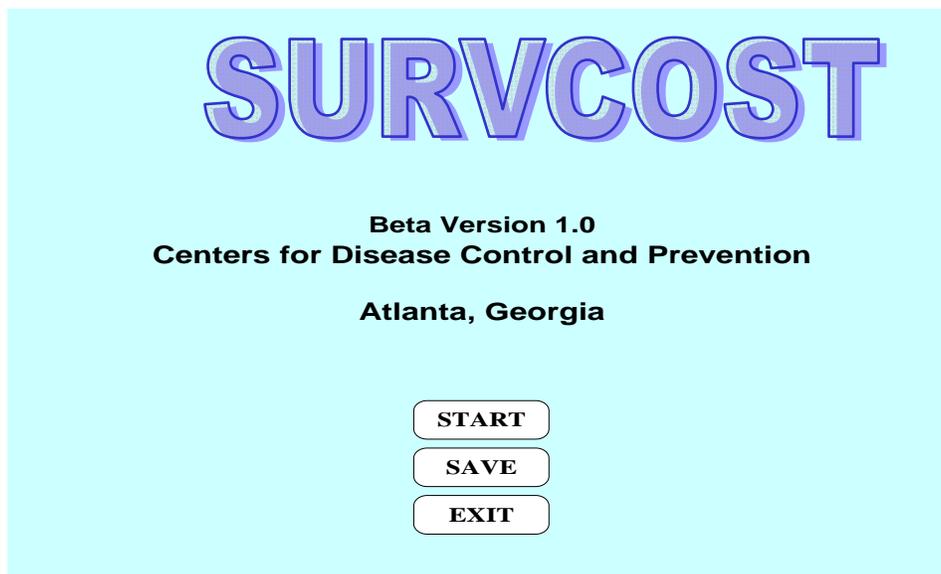
4.2 Loading and Starting

Step 1 – Select the *SurvCost* file from the appropriate folder, and then double click to open the file.

Step 2 – When asked to **Disable Macros** or **Enable Macros**, click **Enable Macros** (see diagram below).



Step 3 – Once you have selected "**Enable Macros**", the tool will load and you are ready to begin using *SurvCost*.



5 ENTERING DATA

As you collect and prepare to enter data, please note that each spreadsheet template provides a default number of rows. You may add or delete rows as needed. If you **NEED MORE ROWS** within a category, you can use the and functions to maintain the formulae from the previous row. You may follow these steps to insert copied cells or rows between existing cells or rows:

1. To copy and insert copied cells,
 - a. select the range of cells that contain the formulae you want to copy
 - b. click **Copy**  on the **Standard** toolbar or on the **Edit** menu
 - c. on the **Insert** menu, click **Copied Cells**
 - d. in the Insert Paste dialog box, select Shift Cells down
2. To insert rows,
 - a. select a range of rows below the first row of the category
 - b. on the **Insert** menu, click **Rows**

The links to summary costs will remain functioning, and will not be affected by the addition or deletion of rows. (*Note: Do not or rows and copied cells in above the first row and below the last row. This will affect the embedded formulae).*)

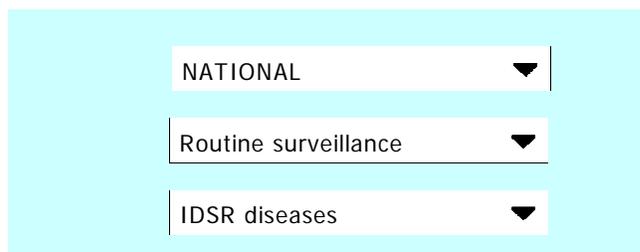
Any information you or previous users have entered and saved will automatically appear. To change this information, simply type over or use the drop-down button to enter current data. You may then click the button to save the new information you have entered.

5.1 ENTERING DATA – Background Information

Click to enter background information about your local setting. This includes the year covered by the evaluation, the name and total population of your country and health structure, local currency and exchange rate to US dollars. These

information are linked to other sheets to calculate the total annual costs and per capita costs for the health structure under evaluation.

You may use the dropdown buttons to select the health system level, the surveillance function, and the targeted diseases you want to evaluate.



For the health structure level, National represents just the central ministry level whereas Region involves only the regional/provincial office and District includes only facilities at the District level. These do not include the structures below or above them. If you need to evaluate different regions, districts and local health facilities, you should use separate individual spreadsheets.

5.2 ENTERING DATA – Personnel data

Although you may begin with any category, we suggest that you begin with personnel data, as the percentage results at the bottom of the screen may be helpful when filling in information for the other categories.

You will first need to organize personnel data. Divide the health personnel involved in the disease surveillance in the area (i.e., country, region/province, district, or locality) covered by the evaluation period into seven personnel categories: administration, disease surveillance, laboratory, pharmacy, medical care, support staff, and other personnel such as consultants, contractual and volunteer workers.



Click on [PERSONNEL](#) to open the Personnel Data spreadsheet (Note: The table shows what the screen looks like when all the data is filled in). Again, you may change any existing information by simply typing over it and resaving.

2006 KAYES		Enter Personnel Data				
Service Unit	Personnel Category	Duration of work (number of months per year)	Gross salary per month (local currency)	Incentives and over-time pay	Personnel Time (%)	
					All disease surveillance activities	IDSR as proportion of all surveillance activities
Administration	Director	12	150,367	15,875	2%	25%
	Administrator	7.5	132,969	10,250	3%	30%
	X	11	124,120	7,508	10%	50%
Surveillance	Surveillance Officer	11	91,356	10,500	75%	65%
	IDSR Head	6	85,875	6,580	85%	50%
	X		73,230	7,850	90%	45%
Laboratory	Lab. specialist	10	40,785	4,985	15%	35%
	Lab. tech.	2.3	31,532	1,675	15%	35%
Medical	Medical specialist	10	140,740	6,785	5%	25%
	Nurse	12	37,040	3,500	2%	25%
Pharmacy	Pharmacist	8	121,540	4,625	8%	5%
	Pharm. Tech.	9	45,754	875	8%	5%
Support Staff	Accountant	0.5	52,756	2,850	1%	25%
	Driver	10	30,300	5,275	25%	50%
Others	Consultant	0.5	0	18,500	100%	75%
	Volunter	0.25	0	21,250	100%	100%
Average personnel time					34%	40%

Percentage Results

Enter personnel data as follows:

1. **Personnel Category** – Record the job title or function in the personnel column. No personnel identifier is required.
2. **Duration of Work**–You will need to enter the number of months each staff member worked during the data collection period (e.g., one year). If a person only works certain days, weeks or months out of the year, you should convert that period of work into months per year. For example, if a staff member worked only 2 weeks out of the year, then the duration of work is:

2 weeks per year divided by 4 weeks per month = 0.5 month per year.

We assume that all years have 12 months and each month has only 4 weeks and 30 days.

3. **Gross Salary per Month** – Salary data for full-time employees is entered on a monthly basis in the column , even for a person who has worked for particular days or weeks out of the month.
4. **Incentives and Overtime Pay** - If the employee received other allowances such as over-time payments in addition to salary, record the total amount in the column otherwise, enter “0” amount. For part-time employees (e.g., contractual workers and consultants) who received only allowances or per diems, record the amount in that column and enter a “0” amount in the column . *Note: For volunteers, it is necessary to provide the value of their volunteer time as though they are on salary.*
5. **Personnel Time % - All Disease Surveillance activities** - Based on each staff member’s daily or monthly hours worked, estimate the proportion of the total work-time spent on all surveillance activities for all communicable and non-communicable diseases and record that percentage in the column under Personnel Time.
6. **Personnel Time % - IDSR as proportion of all surveillance activities** - Now, estimate the ratio of IDSR-only activities relative to all communicable and non-communicable disease surveillance activities and record that percentage in the column under Personnel Time. Personnel time totals for surveillance of all communicable and non-communicable diseases and IDSR-only activities will be calculated automatically in the bottom row of each Service Unit. (*Note: You should not enter data in this last row*).

5.3 ENTERING DATA – Office operating data

Click to open the Office Operating Data spreadsheet, similar to the table below. Here, you will enter information related to office operations.

To begin, organize office operating expenses into the following four major categories:

1. **Office supplies** - stationery, printing/photocopying, computer software and storage devices, postage, and other miscellaneous items.
2. **Utilities** - all water, electricity, telephone communication, and heating or cooking gas bills.
3. **Building and equipment maintenance** - cleaning and cleaning supplies, repair and upkeep, including electric bulbs, and waste disposal of office and laboratory equipment and building facilities.
4. **Rent** - building and equipment rental, storage spaces, training and conference rooms, and communication equipment (e.g., data projector, computer, etc.) leased for short-term use.

2006 KAYES		Enter Office Operating Data				
Office Supplies	Total quantity used	Unit cost	Total cost	Quantity used for all disease surveillance activities	Quantity used (%)	
					All disease surveillance activities	IDSR as proportion of all surveillance activities
Stationeries	0	0	1,412,980	0	34%	40%
Printing/copies	15,786	25	0	8,675		15%
Computer supplies	0	0	245,174	0	25%	85%
Other consumables	46	2,587	0	18		25%
Utilities		Number of months	Monthly cost	Total cost	Facility use (%)	
					All disease surveillance activities	IDSR as proportion of all surveillance activities
Communication		6	4,174		15%	35%
Electricity		8	15,876		15%	35%
Water		10	8,345		15%	35%
Gas				125,675	15%	35%
Building and Equipment Maintenance		Number of months	Monthly cost	Total cost	Facility and equipment use (%)	
					All disease surveillance activities	IDSR as proportion of all surveillance activities
Plumbing/electric bulbs				35,695		35%
Bldg Cleaning		12	4,498		15%	35%
Building repairs		0	0	6,250	15%	35%
Equipment repairs		8	0	38,765	65%	85%
Building and Equipment Rental		Duration or No. units	Unit charge	Total cost	Facility and equipment use (%)	
					All disease surveillance activities	IDSR as proportion of all surveillance activities
Rented Building space		6	41,368		25%	45%
Rented Equipment		1	13,657		100%	100%
Rented Furniture		12	0	25,000	100%	100%

For items within each category, you will enter the following information:

Office supplies: Record under the corresponding column heading the total quantity consumed at your locality, the unit cost, the total cost as well as the actual amount

used for all disease surveillance activities during the evaluation period. If an item is donated then the estimated current value (i.e., how much would it cost to buy the item in its current condition) is entered in the column

Total cost

. If there is no information for a particular item, then enter “0” amount in the appropriate cell. You will also need to estimate and record in the columns

Quantity used (%)	
All disease surveillance activities	IDSR as proportion of all surveillance activities

the proportion of each office supplies use for all communicable and non-communicable disease surveillance activities as well as the ratio of IDSR-only activities relative to all communicable and non-communicable diseases surveillance activities. If you cannot estimate these percentages, record the **Average Personnel Time** shown at the bottom of

PERSONNEL

sheet.

For example, in the sample Office Operating Data spreadsheet shown above, only the total value of office stationery is known; therefore, we entered “0” for total quantity, unit cost, and amount used for all disease surveillance. Since we were unable to determine the fraction allocated to disease surveillance, we used the

value of average personnel time, 40% for

All disease surveillance activities

 and 34%

for

IDSR as proportion of all surveillance activities

.

Utilities: For each item, record the number of months in the evaluation period, the monthly cost and the total cost in the appropriate column heading. Handle donated items and missing information as above. Estimate the proportion or frequency of the facility use during the evaluation time frame for all surveillance activities as well as the ratio of IDSR-only activities relative to all diseases surveillance activities. If you cannot estimate these percentages, record the

Average Personnel Time shown at the bottom of

PERSONNEL

 sheet.

Building and Equipment Maintenance and Rental: Enter the total number of months or days in the evaluation period or units of rental items. Treat donated items,

missing information as well as the proportion of building and equipment use for all surveillance activities and IDSR-only related activities as above.

5.4 ENTERING DATA – Transportation data

Click on **TRANSPORT** button to open the Transportation Data spreadsheet, similar to the table below. Here, you will enter information concerning transporting personnel and patients, drugs, vaccines, specimens, and other consumables in the line of IDSR settings during the year or the evaluation time frame. This spreadsheet is organized into three sections:

1. **Program vehicles** (e.g., car, truck, motorcycle, bicycle, etc)
2. **Rent or non-program vehicles** (e.g., other ministry's vehicles and rented vehicles) used for IDSR program activities
3. **Traveler** expenses related to IDSR program activities.

2006 KAYES		Enter Transport Operating Data				
Program Vehicles	Fuel used (liter)	Total cost of fuel used	Maintenance & repairation cost	Taxes & Insurances & Fees	Vehicle use-time (%)	
					All disease surveillance activities	IDSR as proportion of all surveillance activities
Vehicle A	3,475	347,500	21,295	6,873	85%	50%
Vehicle B	1,254	125,400	15,108	7,482	90%	45%
Vehicle C	675	67,500	6,750	2,460	75%	45%
Another vehicle	875	87,500	4,580	3,057	50%	35%
Rent Vehicles	Duration of rent (days per year)	Daily rent charge	Cost of fuel used	Miscellaneous cost	Vehicle use-time (%)	
					All disease surveillance activities	IDSR as proportion of all surveillance activities
Rent vehicle 1	13	3,500	65,834	2,560	95%	75%
Rent vehicle 2	6	0	15,600	7,560	90%	50%
Rent vehicle 3	5	4,500	26,485	0	100%	75%
Another	14	2,540	45,684	6,543	25%	95%
Traveler	Duration of travel (days per year)	Daily per diem	Total travel fare	Miscellaneous expenses	Vehicle use-time (%)	
					All disease surveillance activities	IDSR as proportion of all surveillance activities
IDSR head	45	15,000	0	6,985	75%	10%
Surveillance officer	21	12,500	25,000	7,500	85%	35%
Data manager	14	7,500	675	0	100%	25%
Another person	0	0	3,576	0	45%	5%

For each item within a category of transportation, you will need to enter the following information.

Program vehicles - record information about the total quantity and cost of fuel consumed, vehicle maintenance and repairs, insurance, taxes and fees as well as vehicle-use time for all disease surveillance activities and IDSR-only activities.

Rent or non-program vehicles - gather information about the duration of rent, daily rent charge, cost of fuel consumed, and other miscellaneous items in addition to the vehicle-use time for all disease surveillance and IDSR-only activities.

Traveler - record information on travel cost items, such as duration of travel, per diem, cost of using public transportation, and other miscellaneous items used during travel.

If there is no information for a particular item, then enter “0” amount in the appropriate cell. Estimate and record the proportion of the total vehicle-use time or personnel work-time on all communicable and non-communicable disease surveillance

activities under the column

All disease surveillance activities

 if possible, otherwise enter the **Average**

personnel time shown at the bottom of

PERSONNEL

 sheet. Record the ratio of vehicle use-time or personnel time for IDSR-only activities relative to all disease surveillance

activities in the column

IDSR as proportion of all surveillance activities

. Again, if this information is not available, use

the **Average personnel time** shown on

PERSONNEL

 data sheet.

5.5 ENTERING DATA- Laboratory data

Click

LABORATORY

 to open the Laboratory Operating Data spreadsheet, similar to

2006 KAYES		Enter Laboratory Operating Data					
Laboratory Materials	Total quantity used	Unit cost	Total cost	Quantity used for all disease surveillance activities	Quantity used (%)		
					All disease surveillance activities	IDSR as proportion of all surveillance activities	
Gloves	1,393	150		675		25%	
Syringes	780	300		180		15%	
Pipettes	315	450		300		85%	
Another material	543	75		543		60%	
X	1	0	18,546		75%	100%	

Laboratory Reagents	Total quantity	Unit cost	Total cost	Quantity used for all disease surveillance activities	Quantity used (%)	
					All disease surveillance activities	IDSR as proportion of all surveillance activities
Infl. antisera	1		13,705		85%	15%
Men. Antisera	1		33,644		95%	25%
Tryptone agar	15	1,500		15		10%
Another reagent	5	3,500		3		8%

the table shown below. Here, you will enter cost data relating to laboratory supplies (e.g., gloves, syringes, pipettes, tubes, needles, etc) and reagents (e.g., antisera, trans-isolate, Cary-Blair, etc) required for various diagnostic tests of IDSR priority diseases.

Note: Laboratory equipment (e.g., microscopes, refrigerators, cold-chains) are capital items and their maintenance and repairs are included in the Office data.

After you have organized the laboratory operating items into laboratory materials and reagents, you may enter the information for each item under the corresponding column heading: total quantity used, unit cost, total cost, and the actual amount as well as the proportion of the total quantity used for all disease surveillance activities and IDSR-only related activities.

If there is no information corresponding to a particular item such as the quantity and cost, then record a value “0” in the corresponding cell. If the product is imported, then add the shipping/customs cost to the value under . And, if these items are repackaged and transported within the country by means of non-project commercial transport, this information should be added as well under . If an item is donated, then the estimated current value (i.e., how much would it cost to buy the item in its current condition) is entered under .

For each laboratory supply and reagent, record the actual amount used for the diagnostic tests of all communicable and non-communicable diseases in the

; otherwise enter “0” amount. You will then estimate the relative proportion of the total quantity that was used for all disease diagnostic tests as well as the ratio of IDSR priority diseases tested relative to all diseases tested. These are recorded as

and , respectively. If you are unable to figure out the proportional allocation of an item, you can use the corresponding **Average personnel time** shown at the bottom of the sheet.

5.6 ENTERING DATA – Treatment data

1. Click on the **TREATMENT** button to open the Patient Treatment and Programmatic Response Data spreadsheet, similar to the table shown below.

2006 KAYES		Enter Patient Treatment and Programmatic Response Data				
Item	Total quantity	Unit cost	Total cost	Quantity used for all disease surveillance activities	Quantity used (%)	
					All disease surveillance activities	IDSR as proportion of all surveillance activities
Malaria drugs						
Chloroquine	110,039	5		10,893	5%	45%
X	3,000		13,765	1,500	5%	30%
Retroviro drugs						
X	1,280	172		128	5%	25%
XX	3,600		232,885	1,000	5%	45%
Diarrhea drugs						
OR salt	174	80		45	5%	30%
X	450		50,456	450	5%	0%
TB drugs						
Ethambutol	40	260		4	5%	5%
X	6,500		325,800	5,410	5%	25%
Antibiotics						
Amoxicilline	376,074	6		3,768	5%	2%
X			45,636		5%	3%
I.V. Fluids						
Ringer	106,612	14		1,662	5%	5%
X			11,674		5%	2%
Vaccines						
Meningo	40,000	8		15,000	25%	100%
Yellow Fever	1,000	266		1,000	25%	5%
Programmatic response						
Impregnated nets	50,000	78		50,000	15%	1%
X	8,000		137,650	7,856	15%	0%

(*Note:* You can rename sub-groups or leave their corresponding cells blank as necessary. The links to summary costs will remain functioning. Do not add or delete sub-groups; this will affect the embedded formulae in the cost sheets).

You will be entering data for the treatment and control of each disease case detected and outbreak at public health facilities, including private clinics and hospitals as necessary. This worksheet is divided into three categories of inputs:

2. **Drugs** - broken down into the following sub-groups: anti-malaria, anti-retrovirus, anti-diarrhea, anti-tuberculosis, antibiotics, and intra-venous (I.V.) fluids.
3. **Vaccines** - include only those used for preventive immunization and mass vaccination during an epidemic outbreak.

4. **Other programmatic response items** - required only for the treatment and control of IDSR priority disease cases and outbreaks, including items such as impregnated bed nets and water chlorination.

To enter drugs, vaccines, and programmatic response data, you should record the total quantity, unit cost, and total value of each type of product consumed at your site. If there is no information corresponding to a particular item, then enter a “0” value in the corresponding cell. If the item is imported, shipping/customs cost should be added to the

column Total cost. And, if the item is repackaged and transported within the country by means of non-project commercial transport, this information should be added as well. If an item is donated then the estimated current value (i.e., how much would it cost to buy the item in its current condition) is entered into the column Total cost.

Then, give the actual amount used to manage cases of all communicable and non-

communicable diseases under surveillance in the column Quantity used for all disease surveillance activities, if available; otherwise, enter “0” amount. Also determine and record the percentage of the total quantity allocated for the management of these disease cases in the

column All disease surveillance activities. Then, in column IDSR as proportion of all surveillance activities, give the ratio of IDSR diseases relative to all diseases under surveillance. If you are unable to figure out the percentage used on surveillance and the proportion of surveillance on IDSR, you can use the corresponding **Average personnel time** shown at the bottom of the PERSONNEL sheet.

5.7 ENTERING DATA – Media data

Click MEDIA to open the Mass Media Campaign Data spreadsheet, similar to the table below. Here, you will enter information related to social mobilization and public campaigns to create awareness of and demand for IDSR activities.

2006 KAYES		Enter Media Campaign Data				
TYPE of MEDIA	Number of units (airtime, page, days, etc.)	Unit charge	Total charge	Other expenses	Media use-time (%)	
					All disease surveillance activities	IDSR as proportion of all surveillance activities
Radio	750	450		2850	90%	80%
TV	225	675		3750	85%	70%
Newspapers	75	175			50%	95%
Wall posters	200	52		1255	75%	5%
T-shirts	100		3500		75%	3%
Mobilization	7		5700	870	100%	100%

This spreadsheet is set up to gather information involving activities such as motivation of public through production and telecast/broadcast of TV/Radio spots, publication of advertisement in newspapers, and printing of educational pamphlets, leaflets, brochures and manuals on IDSR targeted diseases and health conditions.

For each type of media, you should give the total number of units (e.g., airtime, pages, days, etc), unit charge or cost, total cost as well as any other related expenses. If there is no data corresponding to a particular item, enter a “0” value in the appropriate cell. You need also to give the proportion of media-time spent on all communicable and

non-communicable disease surveillance All disease surveillance activities activities and the percentage of

these activities that are only IDSR-related activities IDSR as proportion of all surveillance activities. If you are unable

to figure out the percentage of total media-time on all disease surveillance and the proportion of surveillance on IDSR, you can use the corresponding **Average personnel time** shown at the bottom of the PERSONNEL sheet.

5.8 ENTERING DATA – Capital data

Click on CAPITAL to open the Capital Investment Data spreadsheet, similar to the table below. In this spreadsheet, you will record capital items that have a life over one year. These one-time investment resources are divided into four groups:

1. **Building infrastructure** - involves all new construction and renovation of existing structures or extension of facilities.

2. **Program vehicles** - includes all new or used transportation vehicles, such as cars, trucks, motorcycles, bicycles, etc, bought or received as a gift for the program.
3. **Office equipment** - furniture, photocopier, computer/printer, typewriter, etc.
4. **Laboratory equipment** - includes microscope, centrifuge, refrigerator, cold-chain, etc) are all new or used items bought or received as a gift for the program.

2006 KAYES Enter Capital Investment Data					
Building infrastructure	Acquisition year	Purchase price	Expected useful life year	Facility and equipment use (%)	
				All disease surveillance activities	IDSR as proportion of all surveillance activities
B1	1996	2,589,340	50	10%	15%
B2	1977	2,678,300	50	10%	15%
B3	2000	5,578,634	50	10%	15%
Program Vehicles					
Vehicle A	2002	2,817,480	10	85%	50%
Vehicle B	2004	3,567,520	10	90%	45%
Vehicle C	2003	356,845	7	75%	45%
Office Equipment					
Typewriter	1998	7,586	15	5%	15%
Computer/printer	2001	54,638	15	35%	15%
Photocopy machine	2002	80,763	15	45%	15%
Laboratory Equipment					
Microscopes	2003	26,016	12	20%	10%
Media Refrigerator	2002	61,680	20	20%	10%
Incubators	2004	43,360	20	20%	10%

5% You can enter your own estimate of the capital depreciation rate.

Note: Do not insert a range of **copied cells**. This will affect the embedded formulae. You may add or delete **entire rows** as needed to keep the links to summary costs functioning.

When entering each capital item, you should provide the acquisition year, the purchase price or the amount paid for the item, the useful life-year (i.e., the number of years you expect a capital item to last), and the item use-time for all communicable and non-communicable disease surveillance activities as well as the ratio of IDSR-only activities relative to all surveillance activities.

Purchase price does not include building, equipment and vehicle maintenance and repairs. These costs are included in the facility, equipment and vehicle operating costs

If an item is donated, estimate its current value (i.e., how much would it cost to buy the item in its current condition) and record that value as the Purchase price. If the purchase price is difficult to trace or an item is used only few times a year for IDSR activities, you can include it as a rent item in the OFFICE or TRANSPORT section.

We assume for simplicity the following useful life-year: 50 for buildings, 10-20 for major equipment, 5-10 for motor vehicles, and 1-5 for small equipment. However, you could choose your own number of years you expect the item will remain in good working condition. We also assume a depreciation rate of 5% for each capital item (that is, how much is ‘used up’ in a given year of the useful-life period of the item). This number is shown at the bottom of the Capital spreadsheet. Again, you can make your own assumption of the annual depreciation rate in your local community.

Building spaces used by the disease surveillance programs are reported in terms of the total surface area allocated to that program, i.e., if the space used by the program is shared with other activities, the share of the space used for the program is estimated and the value is entered as All disease surveillance activities and IDSR as proportion of all surveillance activities. If you cannot estimate the space used for the program, use the proportion of the staff workload devoted to surveillance activities in the building facility. Alternatively, you could record the

Average personnel time shown at the bottom of the PERSONNEL sheet.

For equipment used by the program, appropriate allocation is made using the same allocation factors used for building space. For purchase vehicles, the estimated share of their use by the program is entered; otherwise, use the same **Average Personnel Time** from PERSONNEL sheet.

6 CALCULATING COSTS - RESULTS

The result section is organized into three parts. The first part provides the cost by category of resources used for disease surveillance in your local setting: personnel, office, transportation, laboratory, treatment, media, and capital costs. The second and third parts

aggregate these costs into recurrent costs and total program cost, including the distribution by resource category.

Each data collection spreadsheet has a button labeled **COST** that you can click to view the cost of that category of resource based on the information you entered.

6.1 Viewing Results - Personnel costs

If you click on the  button, you will see a table, similar to the one below, showing personnel cost by the different service units or personnel categories: administration, surveillance, laboratory, medical care, pharmacy, support staff, and other personnel.

Year	2006	Personnel Costs - Health structure level			
Country	MALI				
Structure	KAYES				
Personnel category	Total health activities cost	All disease surveillance activities cost	IDSR activities cost	IDSR as % of all disease surveillance	
Administration	4,200,625	203,914	86,810	43%	
Surveillance	1,545,096	1,212,183	719,972	59%	
Laboratory	487,034	73,055	25,569	35%	
Medical	1,862,165	77,429	19,357	25%	
Pharmacy	1,389,606	104,220	5,211	5%	
Support staff	337,503	78,573	38,571	49%	
Others	39,750	39,750	35,125	88%	
Total personnel					
Local currency	9,861,778	1,789,124	930,616	52%	
US dollar	19,724	3,578	1,861	52%	

For each category of personnel at the health structure level, costs are given for three scenarios of ministry's activities: total health activities (i.e., the cost associated with all ministry's activities), all disease surveillance activities cost (i.e., the cost for delivering all communicable and non-communicable disease surveillance activities), and IDSR activities cost (i.e., the cost of delivering only IDSR activities), which is also expressed as percentage of all disease surveillance cost (i.e., IDSR cost divided by all disease surveillance cost). These categorical personnel costs are summed to get the total personnel cost (in local currency and US dollar equivalent).

The cost of each category of personnel cost is calculated based on the information you provided in the **PERSONNEL** data sheet: number of workers, their duration of work and monthly income, and the number of full time equivalents needed for administration or delivering of all disease surveillance and IDSR-only activities. For example, the cost for all communicable and non-communicable disease surveillance is calculated based on the adjusted proportion of work load of each staff member while the IDRS is based on the ratio of IDSR activities to all disease surveillance activities.

6.2 Viewing Results - Office operating costs

When you click **OFFICE COST**, you will see a table, similar to the one below, showing the costs of office supplies, utilities, facilities and equipment maintenance and repairs, and rent for building spaces and equipment for specific IDSR activities.

Year	2006	Office Operating Costs: Health structure level				
Country	MALI	Category of office items	Total health activities cost	All disease surveillance activities cost	IDSR activities cost	IDSR as % of all disease surveillance
Structure	KAYES					
		Supplies	2,171,806	960,576	287,025	30%
		Utilities	361,177	54,177	18,962	35%
		Maintenance	134,686	34,231	24,580	72%
		Rent	286,865	100,709	66,580	66%
		Total office				
		Local currency	2,954,534	1,149,692	397,146	35%
		US dollar	5,909	2,299	794	35%

Here, for example, IDSR-related costs, as a percentage of total surveillance costs, were calculated based upon the frequency of that IDSR activity (as measured by total personnel time or actual amount of resources used). *SurvCost* estimated that nearly 35% of the cost of all office consumables used for disease surveillance was due to IDSR activities.

6.3 Viewing Results - Transportation costs

You can click [TRANSPORT COST](#) to see a table, similar to the one below, illustrating the costs of operating the program vehicles, non-program vehicles, including public transportation fares, and other travel related expenses.

Year	2006	Transportation Costs: Health structure level			
Country	MALI				
Structure	KAYES				
Category of items	Total health activities cost	All disease surveillance activities cost	IDSR activities cost	IDSR as % of all disease surveillance	
Program vehicles	695,505	557,610	262,133	47%	
Rent vehicles	273,826	199,975	149,160	75%	
Travel	1,086,236	869,523	165,411	19%	
Total transport					
Local currency	2,055,567	1,627,108	576,704	35%	
US dollar	4,111	3,254	1,153	35%	

Here, prices of vehicles purchased for the IDSR program are treated as capital costs (see below) and are not included in transportation cost, which includes fuel consumed, vehicle maintenance and insurance, rent, and other travel related expenses such as per diem, conference fees, public transportation tickets. The transportation cost of the disease surveillance program, including IDSR, is estimated based on each vehicle use-time per surveillance activity.

6.4 Viewing Results - Laboratory operating cost

Click on [LABORATORY COST](#) to show the laboratory operating costs, similar to the table below, which are disaggregated into cost for laboratory supplies and reagents.

Year	2006	Laboratory Operating Costs: Health structure level			
Country	MALI				
Structure	KAYES				
Category of items	Total health activities cost	All disease surveillance activities cost	IDSR activities cost	IDSR as % of all disease surveillance	
Lab materials	643,971	344,885	186,507	54%	
Lab reagents	87,409	74,912	12,652	17%	
Total laboratory					
Local currency	731,380	419,797	199,159	47%	
US dollar	1,463	840	398	47%	

Here, the costs are calculated based on the procurement cost and the quantity of each specific product required for the various diagnostic test of diseases under surveillance. Then, IDSR-related costs are estimated using the actual amount of resource and personnel use-time on IDSR activities at the laboratory facility.

6.5 Viewing Results – Treatment and response costs

When you click [TREATMENT COST](#), you will find a table, similar to the one below, showing the disease treatment costs.

Year	2006	Treatment and Response Costs: Health structure level			
Country	MALI				
Structure	KAYES				
Category of items	Total health activities cost	All disease surveillance activities cost	IDSR activities cost	IDSR as % of all disease surveillance	
Anti-malarial drugs	563,960	55,153	24,716	45%	
Anti-retroviral drugs	453,045	33,660	10,744	32%	
Anti-diarrheal drugs	64,376	6,123	1,080	18%	
Anti-TB drugs	336,200	17,330	4,125	24%	
Antibiotics	2,302,080	24,890	521	2%	
IV fluids	1,504,242	23,852	1,175	5%	
Vaccines	18,130	386,000	133,300	35%	
Programmatic items	4,037,650	3,920,648	39,000	1%	
Total treatment					
Local currency	9,279,683	4,467,655	214,660	5%	
US dollar	18,559	8,935	429	5%	

Treatment and response costs include all medications (drugs and vaccines) including all programmatic measures and preventive intervention items (e.g., treated bed nets and water chlorination) used in the line of controlling and preventing only IDSR

priority diseases. These costs are calculated based on the procurement cost and the quantity required of each specific product for the treatment of diseases under surveillance. Again, IDSR-related costs are estimated using the actual amount of resource and personnel use-time on IDSR activities.

6.6 Viewing Results - Media campaign costs

You can click [MEDIA COST](#) to see the costs for media campaigns, including advertising, broadcasting, and targeted social mobilization, which are organized like the table below.

Year	2006	Mass Media Campaign Costs: Health structure level			
Country	MALI				
Structure	KAYES				
Category of items	Total health activities cost	All disease surveillance activities cost	IDSR activities cost	IDSR as % of all disease surveillance	
Radio	340,350	306,315	245,052	80%	
TV	155,625	132,281	92,597	70%	
Newspapers	13,125	6,563	6,234	95%	
Wall posters	11,655	8,741	437	5%	
T-shirts	3,500	2,625	66	3%	
Mobilization	6,570	6,570	6,570	100%	
Total media					
Local currency	530,825	463,095	350,956	76%	
US dollar	1,062	926	702	76%	

IDSR-related costs are separated from all surveillance activities based on the proportion of surveillance activities on IDSR at the health facility.

6.7 Viewing Results - Capital costs

Click [CAPITAL COST](#) to see a table, similar to the one below, showing the capital costs.

Year	2006	Capital Costs: Health structure level			
Country	MALI				
Structure	KAYES				
Category of capital items	Total health activities cost	All disease surveillance activities cost	IDSR activities cost	IDSR as % of all disease surveillance	
Building	594,123	59,412	8,912	15%	
Program vehicles	888,557	772,207	363,000	47%	
Office equipment	13,776	5,380	807	15%	
Lab equipment	11,364	2,273	227	10%	
Total capital					
Local currency	1,507,820	839,272	372,946	44%	
US dollar	3,016	1,679	746	44%	

The costs of buildings, laboratory and office equipment and vehicles are depreciated at 3% annually over a 50-, 10- and 5-year useful-life time horizon, respectively. We then assume that the annual IDSR-associated costs are equal to the proportion of all surveillance activities that is due to IDSR activities. We then apportion out annualized capital costs using the equipment and vehicle use-time and total personnel time allocated to all surveillance and each IDSR activity at the health facility.

7. SUMMARIZING COST RESULTS

Each resource cost sheet has buttons you may select to view the summarized costs by category of resources.

7.1 Summary Results – Recurrent Costs

Click  to go to the summary of recurrent costs (i.e., summary of all of the costs per line items by category of resources excluding capital items), similar to the table below.

Year	2006	Recurrent Costs (in local currency) by Category of Resources: Health structure level					
Country	MALI						
Structure	KAYES						
	Total health activities cost		All disease surveillance cost		IDSR cost		
	Local currency	US dollar	Local currency	US dollar	Local currency	US dollar	
A. Personnel							
Administration	4,200,625		203,914		86,810		
Surveillance	1,545,096		1,212,183		719,972		
Laboratory	487,034		73,055		25,569		
Medical	1,862,165		77,429		19,357		
Pharmacy	1,389,606		104,220		5,211		
Support staff	337,503		77,215		38,571		
Others	39,750		39,750		35,125		
Personnel cost	9,861,778		1,787,766		930,616		
B. Office							
Office supplies	2,171,806		960,576		287,025		
Utilities	361,177		54,177		18,962		
Maintenance	134,686		34,231		24,580		
Rent	266,865		100,709		66,580		
Office cost	2,954,534		1,149,692		397,146		
C. Transportation							
Program vehicles	695,505		557,610		262,133		
Rent vehicles	273,826		199,975		149,160		
Travel	1,086,236		869,523		165,411		
Transport cost	2,055,567		1,627,108		576,704		
D. Laboratory							
Lab materials	643,971		344,885		186,507		
Lab reagents	87,409		74,912		12,652		
Laboratory cost	731,380		419,797		199,159		
E. Treatment							
Anti-malarial	563,960		55,153		24,716		
Anti-retroviral	453,045		33,880		10,744		
Anti-diarrheal	84,376		6,123		1,080		
Anti-TB	336,200		17,330		4,125		
Antibiotics	2,302,080		24,890		521		
IV fluids	1,504,242		23,852		1,175		
Vaccines	586,000		386,000		133,300		
Programmatic	4,037,650		3,920,648		39,000		
Treatment cost	9,847,663		4,467,655		214,660		
F. Media							
Radio	340,350		306,315		245,052		
TV	155,625		132,281		92,597		
Newspapers	13,125		6,563		6,234		
Wall posters	11,655		8,741		437		
T-shirts	3,500		2,625		66		
Mobilization	6,570		6,570		6,570		
Media cost	630,825		463,095		350,956		

Recurrent items or consumable goods are those items used only once to operate the program, or maintained in stock with a lifespan of < 1 year, and include personnel costs, office operating costs, transportation costs, public campaign costs, treatment costs, and laboratory operating costs.

7.2 Summary Results – Total Costs

**SUMMARY
COST**

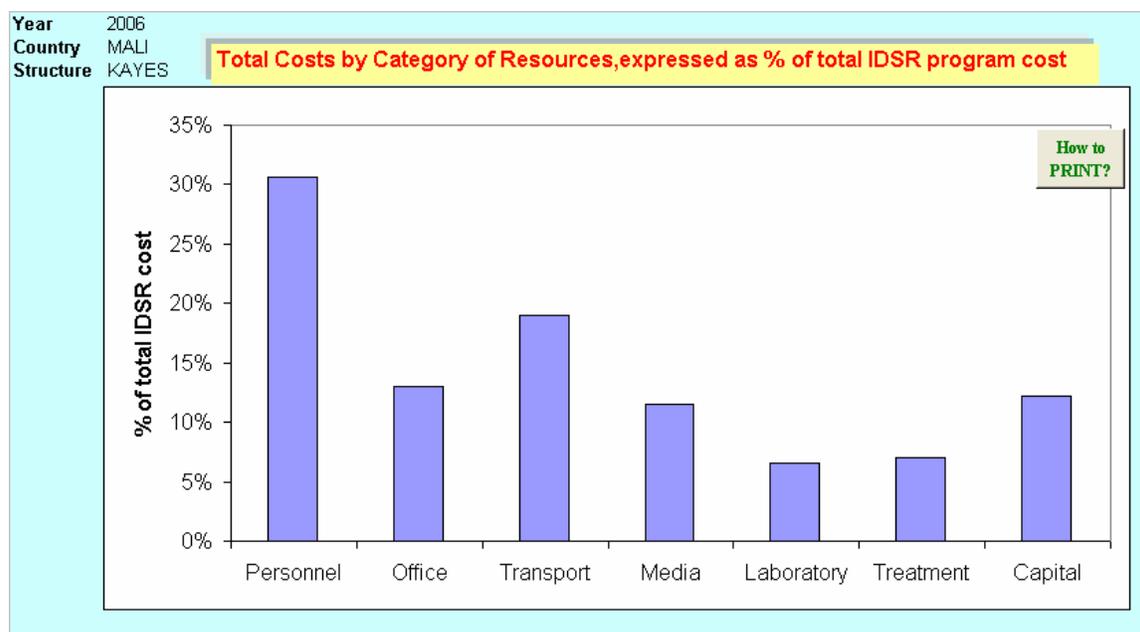
Click [SUMMARY COST](#) to view a table, similar to the one below, summarizing the total cost by category of resources.

Year	2006	Total Costs by Category of Resources: Health structure level						
Country	MALI							
Structure	KAYES							
Resources	Total health activities cost		All disease surveillance cost		IDSR cost		Resource as % of total IDSR	
	Local currency	US dollar	Local currency	US dollar	Local currency	US dollar		
Recurrent items								
Personnel	9,861,778	19,724	1,789,124	3,578	930,616	1,861	30.6%	
Office	2,954,534	5,909	1,149,692	2,299	397,146	794	13.1%	
Transport	2,055,567	4,111	1,627,108	3,254	576,704	1,153	19.0%	
Media	630,825	1,062	463,095	926	350,956	702	11.5%	
Laboratory	731,380	1,463	419,797	840	199,159	398	6.5%	
Treatment	9,279,683	18,559	4,467,655	8,935	214,660	429	7.1%	
Recurrent cost	25413768	50828	9916471	19833	2669241	5338	87.7%	
Capital items								
Building	594,123	1,188	59,412	119	8,912	18	0.3%	
Vehicles	888,557	1,777	772,207	1,544	363,000	726	11.9%	
Equipment	25,140	50	7,653	15	1,034	2	0.0%	
Capital cost	1,507,820	3,016	839,272	1,679	372,946	746	12.3%	
All resources	26,921,587	53,843	10,755,743	21,511	3,042,187	6,084		
<i>Cost per person</i>	<i>31.67</i>	<i>0.06</i>	<i>12.65</i>	<i>0.03</i>	<i>3.58</i>	<i>0.01</i>		

For each category, the costs are given for all activities at the health structure level, all communicable and non-communicable disease surveillance (i.e., surveillance activities for all diseases, including infectious diseases as well as all other diseases and conditions, such as cancers and fatal injuries), and for IDSR-only activities (i.e., surveillance activities related to only IDSR priority diseases and conditions). The Table also shows the aggregated costs of all disease surveillance and IDSR activities across all resource categories as well as the cost per capita based on these aggregated costs and the number of population living in the area (see Information sheet).

Here, for example, the cost of running the IDSR program varies significantly by resource-type. The cost of all resources spent per person living in the study area is approximately 0.03 \$ US for all disease surveillance activities and approximately 0.01 \$ US for IDSR-related activities.

If you click on the [GRAPH](#) button, you will see a graph depicting the cost profile, similar to the one below, expressed as the percentage of the total IDSR cost.



In the example shown here, personnel costs constitute the largest component (31% of the total IDSR cost) of all IDSR-related activities cost at the health facility, followed by transportation (19%) and then office consumables (13%).

8 **PRINTING, RESTARTING, AND EXITING SurCost**

8.1 **Printing**

Changing the Page Set-up of each spreadsheet to “*landscape*” format will allow the entire result to be printed on a single page. To change the page format, you should do the following:

1. Click **File** and then choose Page Setup;
2. in the **Orientation** box, select **Landscape**; and then
3. Click **OK**.

8.2 **Restarting**

Clicking on the  button located on each data collection, synthesis and summary spreadsheet will take you back to the Information sheet if you want to change any data you entered, or to select different disease syndromes, surveillance activities, and/or resource category. There is also a  button on each data synthesis spreadsheet you can click on to go back to the data collection sheet of that category of resource. If you want to save the input data and results, you should click  button. It should be noted that saving may take some time due to the size of the program.

8.3 **Exiting**

On each spreadsheet, you may click the  button to go back to the Start Page where you can select  to close all programs and exit the *SurvCost* without saving the changes. If you want to save the input data and results, you should click  before you click on the  button. It should be noted that saving may take some time due to the size of the program.

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APPENDIX

Appendix 1: Tool for Planning for Collection of Data for Economic Analysis

In this assessment, we will look at the costs associated with implementing IDSR in an African country. To conduct the assessment, we will need to collect and analyze data on costs for specific categories: IDSR personnel, offices, advocacy, medicines and vaccines; laboratory supplies and reagents; and transportation.

Since the sources of data may be located in different Ministry offices and levels of the health system, we would like your help in identifying the appropriate sources of data (and contact persons, if possible) at your local health system level that will be able to provide the requested data for this area. We recognize that the persons who are responsible for the data sources may need some advance notice about the need to provide cost data for specific sources, and we hope this tool will be useful to you in locating the relevant contact person and advising them as to what kind of data will be requested and when the assessment team will be visiting them.

The table below is organized into five sections: 1) personnel, 2) office space, furniture, equipment, materials, and supplies, 3) advertising, media and broadcasting, 4) medications and vaccines, and 5) transportation. For each major section, we have provided general guidance about the type of information that will be needed to complete the costing tool. You will see there is also a space for noting the most relevant data source. There is also another space for making note of who needs to be contacted in advance of the evaluation exercise so they will be able to access and provide the data for data entry into the tool when the team begins the evaluation.

Personnel			
	Information needed	Data source(s)	Contact person(s)
Full-time employees	Characteristics of employees (e.g. position title, educational level, training; role in IDSR)		
	Salary and benefits		
	Length of employment (months, years)		
	Funding source for personnel		
	Time spent on IDSR activities		
Contractors, consultants, and volunteers	Type of work performed		
	Educational level (e.g. MD, PhD, MPH)		
	Length of work		
	Travel allowance and per diem		
	Funding sources for positions		
Office space, furniture, equipment, materials, and supplies			
	Information needed	Data source(s)	Contact person(s)
Equipment and Facilities	Total administrative office space, furniture, equipment, materials and supplies used		
	Total lab space, furniture, equipment, materials, reagents, and supplies used		
	Total training space, equipment, materials, and supplies		
	Total health facility space, furniture, equipment, materials, and supplies		
Utilities and supplies	Cost of office space, furniture, equipment, materials and supplies used, <i>or</i> value, if donated		
	Funding sources for office space, equipment, materials and supplies used, <i>or</i> value, if donated		
	Proportion of office space, equipment, materials and supplies used for IDSR		
Advocacy or social mobilization	Information needed	Data source(s)	Contacts
	Airtime on radio and television		

costs	Number, length, and cost of articles or advertisements in newspapers		
	Funding sources		
	Proportion time or space allotted for IDSR activities		
Transportation			
	Information needed	Data source(s)	Contact(s)
Vehicles, motor bikes, and other means of transportation	Characteristics of owned vehicles, motor bikes, and other means of transportation (e.g. model, make, year)		
	Characteristics of rental vehicles (e.g. model, make, year)		
	Purchase price of vehicle, motor bikes or other means of transportation <i>or</i> value, if donated		
	Rental costs		
	Insurance and taxes		
	Source of funding to pay for vehicles		
Operation	Cost of maintenance and repairs		
	Cost of gasoline/oil used, <i>or</i> value, if donated		
	Distance traveled per year		
Laboratory Supplies and Reagents; Vaccines and Medications			
	Information needed	Data source(s)	Contact(s)
Vaccines and Medications	Number and type of medications administered; Number and types of vaccines administered		
	Sources of funding for medicines and vaccines (purchased; donated; etc.)		
	Information about adverse reactions and their costs		
Laboratory Supplies and reagents for confirming IDSR diseases	Number of units of lab supplies and reagents (e.g., 1 vial); quantities purchased during the year, quantities used, purchasing price		

Appendix 2: Description of Resources Used to Operate the Surveillance and Response System

The methods cover resources required to operate the IDSR system. These resources include the personnel and financial resources expended in operating the system. The following checklist is given to guide the documentation of these resources.

INVESTMENT COSTS	OPERATIONAL COSTS	INDIRECT COSTS
Facilities	Facilities	Volunteers
Equipment	Equipment	Consultants
Transport	Transport	Donated item
Training	Personnel	Others
Others	Supplies	
	Training	
	Media	
	Medical	
	Utilities	
	Others	

Selection criteria for specific categories of costs will be based on their appropriateness for IDSR activities, their relevance to economic analysis, and the feasibility for data collection. The cost items ultimately selected will be grouped by health structure level and organized into a review checklist.

In describing these resources the following will be considered:

- *Funding source(s)*: Specify the source of funding for the surveillance system
- *Personnel requirements*: Estimate the time it takes to operate the program, including the collection, analysis, and dissemination of data (e.g., person-time expended per month of operation). These measures will be converted to dollar estimates by multiplying the person-time by appropriate salary and benefit costs.
- *Other resources*: Determine the costs of other resources, including travel, training, supplies, computer and other equipment, and related services (e.g.,

mail, telephone, computer support, Internet connections, laboratory support, and hardware and software maintenance.

When appropriate, the description of the program's resources should consider all levels of the public health system, from the local health-facility to district, province/region, and central levels, including the following categories:

- *Buildings and Civil Works:* New construction under the IDSR program, renovation and repair of existing structures or extension of facilities
- *Goods:* Procurement of goods (laboratory equipment, office equipment, computer hardware, application and system software, furniture/fixtures and materials & supplies)
 - *Laboratory equipment:* binocular microscopes, table top centrifuge, refrigerator, deep freezer, incubator, autoclave, ELISA reader, etc. Quantity of each item by various laboratories will be worked out by the program authorities and by undertaking facility survey
 - *Office equipment:* To implement the program all surveillance units (peripheral/district/province/central) are to be equipped with office equipment such as photocopier, fax machine, overhead projector, air conditioner and telephone, etc.
 - *Computer hardware and operating system:* Connecting peripheral, district, province, and central surveillance units is the major activity of the IDSR program. Computer server, router, modem, printer, UPS, etc. are required for networking. Operating system for Server, RDBMS, Website Tool and GIS Software is required for carrying out various functions (data entry, data analysis, transmission of information and reporting).
 - *Furniture and fixtures:* Furniture and Fixtures which includes tables, chairs, laboratory platforms, washbasins, etc. are required for laboratories and surveillance units.
 - *Materials and Supplies:* Laboratory consumable goods and supplies are required continuously for the purpose of various diagnostic tests. These include slides, gloves, test tubes, cotton wool swabs, blood culture bottles,

aluminum foil, typhoid rapid diagnostic kit, faecal contamination rapid test kits, HIV diagnostic kit ELISA, etc.

- *Services:* Procurement of services including the following
 - *Information, Education and Communication (IEC):* IEC activities includes organization of sensitization workshops, review meetings, publication of advertisement in newspapers to make public aware about the preventive action to be taken, printing of pamphlets/leaflets/brochures/manuals/formats for reporting, street plays, puppet shows, counseling and motivation of public through inter-personal communication, IEC activities at the national level like development and publication of advertisements in national newspapers for public awareness, printing of manuals, guidelines, training modules, production and telecast/broadcast of TV/Radio spot
 - *Studies:* Quality Assurance of laboratory services, survey on risk factors, evaluation of training activities, effectiveness of information
 - *Training:* The raining at various levels in the laboratories and surveillance units includes:
 - training of multi-purpose health workers and laboratory assistants undertaken in-house at selected community health centers
 - training of medical officers of primary and community health centers undertaken in-house at district surveillance units
 - training of laboratory technicians, data mangers, district and province surveillance teams organized in professional institutions
 - *Consultancy services:*
- *Miscellaneous (Incremental Operating Cost):* This involves operational expenses for all the components of the program and would include office expenses, office stationary, travel costs, hiring and maintenance of vehicles, maintenance of equipment/computers, salary of incremental staff and consumable, and individual consultants hired for specialized services to serve in the district and province surveillance units.