

Graduate School of Development Studies

ESTIMATING ECONOMIC COSTS OF WATERBORNE DISEASES: A CASE STUDY OF PUNJAB PROVINCE, PAKISTAN

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DEDICATION

To

Muhammad Yaseen Chohan (Late)

And

Millions of people on this planet who don't have access to clean drinking water



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LIST OF ACRONYMS				
ABA	Averting Behavior Approach			
BOD	Biochemical Oxygen Demand			
CDC	Centre for Communicable Diseases Control			
COI	Cost of Illness			
CVA	Contingent Valuation Approach			
DALY	Disability Adjusted Life Year			
DHS	Demographic Household Survey			
DM	District Magistrate			
EPA	Environmental Protection Agency			
FATA	Federally Administered Tribal Areas			
FBS	Federal Bureau of Statistics			
HVA	Hedonic Valuation Approach			
LFT	Liver Functioning Test			
MoE	Ministry of Environment			
NWFP	North Western Frontier Province			
ORS	Diarrhea, Dysentery preventive salts			
PCRWR	Pakistan Council of Research in Water Resources			
PIHS	Pakistan Integrated Household Survey			
SCEA	Strategic Country Environmental Assessment			



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1- Introduction: As countries go on developing economically, the structure of economic and social organizations change. As a first step the industrial sector grows at the cost of agricultural sector and later the service sector increases as a share of the economy and, broadly speaking, every sector grows at the cost of environment. 'Can this cost be measured?' is still a big question before the researchers. Ever increasing health expenditures indicate that the costs of waterborne morbidity and illness are continuously on the rise in the developing countries, owing mainly to the rapidly increasing environmental degradation. One of the estimates of national health expenditures (of the US) indicates a 400 percent increase since 1965 (Freeland and Schendler, 1981). As a portion of the Gross National Product (GNP), the costs associated with illness and disease are projected to reach nearly 11 percent by the year 1990 (Freeland and Schendler et al, 1981) compared to 9.4 percent in 1980 and 6 percent in 1965 (Gibson and Waldo, 1981 and Hodgson, T.A., 1982). Waterborne diseases result directly from water contamination and environmental pollution and hence occupy a large space in the comity of these public health expenditures having negative repercussions for the human capital development, investments on education and the economic growth. Recent estimates by the World Health Organization suggest that children of developing countries have three-quarters of a billion episodes of diarrhea each year, causing nearly 5 million deaths (Synder and Merson, 1982). With the onset of the Theory of Human Capital, particularly the Augmented Solow Model and the Lucas Model, it is imperative to study the 'cost of illness' element of an economy and its economic impacts. Today most countries are facing an enormous increase in public health expenditures. Various factors adding tremendously towards these rising expenditures are widespread diseases in developing countries, high fees and salaries of doctors, very high profit margins of pharmaceutical industry, environmental pollution and ever increasing costs of treatment in technologically advanced medical sciences. These trends have caused a rapid increase in the volume of expenditures in public health services. Studies show that in the presence of these high health expenditures, the investments made in physical capital, education and other sectors of the economy do not yield desired results. For example Bloom and Canning (1999) see positive correlation between health and income per capita and there are plausible ways in which health improvements can lead to income growth.

Recent economic analysis indicates that health status (as measured by life expectancy) is a significant predictor of subsequent economic growth (Bloom and Canning, 1999). The very concept of human capital formation rests on the notions that people as productive agents are more productive with investments in health and education and definitely the outlays made yield a continuous return in future. Also the investment made in the health service is always instrumental in reaping the benefits of investments made in other sectors of economy. 'A lengthening of life expectancy through improved health reduces the rate of depreciation of investment in education and increases the return to it. An increase in productive efficiency through improved education, on the other hand, increases the return on a life saving investment in health' (Mushkin, 1962). Now with these economic benefits in mind it is quite imperative to look at the possibility of cutting down the unproductive health expenditures by merely adopting an 'averting behavior' or by just taking some precautionary measures. For example providing clean and safe drinking water in the areas where the cost-of-illness of waterborne diseases is high. This measure in itself is a big investment in the health service and education sector. As far as children in developing countries are concerned, it is quite logical that the nature and response of diseases are conditioned with environmental, social and economic milieu. For example in Bangladesh several specific types of diarrhea had higher incidences and longer durations in children from low income households (Black, 1984). Two main agents of environmental pollution are the air pollution and the water pollution. This paper attempts to estimate the economic costs of main waterborne diseases vis-à-vis the cost of provision of safe drinking water. The area selected for the purposes of this study is the Punjab Province of Pakistan. Punjab has 34 administrative divisions called districts. The local district governments, each headed by a District Nazim (administrator), were established after a military coup in 1999. These district governments have their own district assemblies of public representatives and their own district budget. Therefore the much time staking and laborious job of calculating the cost of illness associated with main waterborne diseases, in each district, has been done in this paper. An endeavor has been made to compare these costs at the district level with the costs incurred on averting expenditures. For the purposes of analysis the data was collected from the Centre for Communicable Diseases Control (CDC), Health Department, Government of the Punjab,

Lahore. This data covers 18 communicable diseases; however we have picked up five main waterborne diseases, namely, diarrhea, dysentery, poliomyelitis, goiter and suspected viral hepatitis. The data provides information about the number of incidences of these diseases with two broad categories, i.e. cases under the age of 5 and cases over 5. A set of data has also been obtained from Pakistan Council of Research in Water Resources (PCRWR). With the help of this data the chemical elements and compounds present in various samples from all over the province have been identified and categorized, thus reflecting the percentage of various pollutants causing the waterborne diseases incidences. Moreover the main waterborne diseases have also been identified in the Punjab Province. The correlation between the chemical compositions of various samples of water and the prevalence of waterborne diseases paves the way for further research on the subject. The baseline data for analysis was taken from the World Bank's report on Pakistan (August 2006) called Country Strategic Environmental Assessment (SCEA). The components available in this data were used in calculating the cost of illness of diarrhea, dysentery and typhoid at the district level. These calculations were made with the aid of software¹ available online. Separate costs for these diseases have been calculated for each of 34 districts of Punjab.

SCEA report suggests that good health is not only essential for one's well being rather it plays a pivotal role in economic growth as well. The main economic benefits of better health include higher productivity and educational returns. Better health makes people cut down the health care expenditures and spend them on other productive areas. Also economic growth is of paramount importance in curbing poverty; however environmental degradation lowers down the acceleration of economic growth. 'Air and water pollution, unsafe waste disposal, land degradation and exposure to agro-industrial chemicals are among the leading causes of illness and child mortality in developing countries (WB-SCEA, 2006). As per the estimates of WHO, the environmental health expenditures account for over 20% of the total health expenditures burden of the world. Most of these health expenditures are incurred in developing countries, where there exists a strong relationship between the level of poverty and the environmental cost of illness.

¹ Software available at: http://www.healthstrategy.com/coi/coientry01.htm

Pakistan is a country of about 160 million people with the Punjab Province constituting almost half of the total population. Although some economic reforms resulted in achieving, to some extent, a reasonable growth rate both in long term and short term perspectives in Pakistan, i.e. from 2.6% in 1960 onwards to 3.3% in 1997-2002 and over 6.5% during 2002-2005 (WB Report on Pakistan-2005), however the prevalence of waterborne diseases remain high. Due to present economic reforms Pakistan has achieved sizeable growth rates that can be compared with other countries in South Asia. This notable growth is challenged by ever increasing population, poverty and ever increasing environmental pollution. As a result, diseases are prevalent and multiplying day by day. Moreover, the natural resources are under great pressure and depleting which is a direct threat and risk to prosperity. Unfortunately, many priority areas such as conservation of natural resource and environmental management could not be handled properly. As a result, threatening environmental situation is hampering the growth prospects.

According to World Bank report "Pakistan's infant and child mortality rates are the highest in the South Asia Region, with the prevalence of childhood diarrhea and acute respiratory infections, both associated with poor environmental quality, the 2nd highest" (SCEA, 2006). Moreover Pakistan has emerged as the most populated and urbanized country in South Asia where more than one-third of the population is living in towns and cities. Resultantly environmental pollution is on the rise. However the present study has taken up the analysis of cost-of-illness associated with waterborne diseases only.

As stated, there are various agents of environmental pollution; however this study restricts its scope to water contamination only. Because of lack of data, only direct medical costs have been calculated which present an extremely low bound estimate of the total cost of illness. On the lines of World Bank's SCEA report, the health effects at the district level of Punjab have been presented in three forms, i.e. the effected population, cost components and the economic costs. These health effects have been translated into monetary metric by adopting the Cost-of-Illness Approach to measure the illness effects on the population. The costs incurred on averting expenses (like the costs incurred on boiling water for drinking purposes) have been estimated from SCEA report. The costs of provision of bottled water have also been calculated from the same report. The conclusions and recommendations have been framed on the basis of the analysis of the

costs incurred on waterborne illnesses and costs spent on the provision of clean and safe drinking water.

2- Theoretical Framework and Methodology:

'Domestic /residential water use has received a substantial amount of attention from economic researchers. This is evident by the large number of articles written on the topic and even the number of surveys of the field (Hanke and de Mare, 1984; Boland, Dziegielewski, Bauman and Optiz, 1984; Young, 1985; Gibbons, 1986; Espey, Espey and Shaw, 1997; Bauman, Boland and Hanemann, 1998; Dalhusien, de Groot and Nijkamp, 2000). The primary purpose of this set of estimation models is to characterize the specific nature of the relationship between the observed quantity of residential water use, allied diseases and other variables suggested by economic theory' (Renzetti, 2002).

2.1- The Economic Theory: Economic theory, as provided by Renzetti (2002), provides a useful framework within which the structure of residential water use may be examined. To begin, assume that a household has a set of preferences that may be represented by a utility function,

 $U = U(x_1, x_2, ..., x_n)$

Where x_i denote the quantities of goods and services consumed. Assume that market prices $(p_i, ..., p_N)$ are positive and constant. The household is further assumed to choose the quantities of goods and services to maximize its utility subject to the constraint that it may not spend more than it earns (Y),

 $\max_{\{x_i\}} U(x_1, x_2, \dots, x_N) \text{ Subject to } \sum_{i=1}^N p_i * x_i \le Y$

Solving this problem yields the optimal (uncompensated) quantities as functions of market prices and the level of income,

$$x_i^* = f_i(p_i, p_2, ..., p_N, Y), i=1,2,...,N$$

It is clear from the equation that the demand for any good such as portable water is, in the most general case, a function of all of the prices facing a consumer as well as her income. Straightforward differentiation of the uncompensated demand equation with respect to its arguments yields formulae for the own, cross and income elasticities of demand respectively.

$$\begin{split} \eta_{ii} &= \left(\partial x_i (p_1, p_2, ..., p_N, Y) / \partial p_i \right)^* \left(p_i / x_i^* (p_1, p_2, ..., p_N, Y) \right), \\ \eta_{ij} &= \left(\partial x_i^* (p_1, p_2, ..., p_N, Y) / \partial p_j \right)^* \left(p_j / x_i^* (p_1, p_2, ..., p_N, Y) \right), \\ \eta_{iY} &= \left(\partial x_i^* (p_1, p_2, ..., p_N, Y) / \partial Y \right)^* \left(Y / x_i^* \right) \end{split}$$

Substituting the optimal quantities into the utility function yields the indirect utility function. This provides an indication of the maximal utility that the household may achieve when facing the specified prices and income,

 $V(p_1, p_2, ..., p_N, Y) = U(x_1^*, x_2^*, ..., x_N^*)$

2.2- The Cost of Illness (COI): A Theoretical Perspective

"The cost of illness is an estimate of the incremental direct medical costs associated with medical diagnosis, treatment and follow-up care" [EPA (USA), 2005]. Various components of the cost of illness include hospitalization, physician visits and pharmaceuticals. The variation in these costs over a period of years is compensated by various discount rates. The cost of illness analysis is also a way to estimating direct medical costs resulting from illnesses which are associated with various environment polluting agents.





Illnesses are costly in many ways and often over longer periods of time. Many illnesses result in costs for years after onset; some illnesses result in a lifetime of costs. Some of these costs, such as hospitalization charges and physician fees, are obvious. Other costs, such as the value of lost time due to the illness, are less obvious but just as real. A complete accounting for total cost of an illness includes all the costs incurred as a result of the illness from the time of onset to the time of cure or the death of the individual—that is, the lifetime stream of costs associated with the illness.

The estimated costs can be used in policy, education, health & legal environmental

Table-A: COST OF ILLNESS VALUATION METHODS				
Valuation Method	Description			
Contingent Valuation Approach	The CV approach uses a survey to illicit estimates of			
	individual willingness-to-pay to avoid a given illness.			
	The CV technique, when properly designed, should			
	capture direct treatment costs, indirect costs and costs			
	associated with pain and suffering.			
Cost-of-Illness Approach	The cost of illness approach estimates the direct			
	medical costs associated with an illness and will			
	sometimes include the cost to society resulting from			
	lost earnings. Cost of illness studies do not account for			
	pain and suffering, the value of lost leisure time or the			
	costs and benefits of preventive measures.			
Hedonic Valuation Approach	HV studies use regression analysis to estimate the			
	relationship between environmental improvement or			
	reduced workers risk and other independent variables.			
*	For example, a hedonic wage study may attempt to			
	describe the relationship between wage rates and job			
DI	related risks (i.e. what is the premium required to			
	compensate the workers for the added risk they incur			
	from their occupation). The weakness of hedonic			
	approach is based upon the difficulty in separating			
	illness effects from other independent variables.			
Averting Behavior Approach	The AB method examines preventive measures			
	undertaken to avoid exposure or mitigate the effects of			
	illness. Investments made in the preventive measures			
	are then used as a proxy for individual willingness-to-			
1	pay to avoid a particular illness.			

issues, benefits assessments and other applications where either the costs are avoided

Source: Unsworth, Robert E and James E. Neuman, Industrial Economics, Incorporated, Memorandum to Jim DeMocker, Office of Policy Analysis and Review, Review of Existing Value of Morbidity Avoidance Estimates: Draft Valuation Document, September 30, 1993 (http://www.epa.gov/dfe/pubs/tools/ctsa/appends/app-j.pdf).

because of better environmental quality or costs are incurred due to environmental pollution. Several approaches are available to estimate the economic benefits of reduced morbidity effects associated with pollution releases, including: Contingent Valuation, Averting Behavior, Hedonic Valuation and Cost-of-Illness approaches. Table (A) provides a brief summary of each.

The selection of an appropriate method for COI calculation purposes depends upon the nature and type of data. CV approach requires survey based data which we don't have, so we didn't take up this method for our analysis. Similarly the HV approach requires data regarding independent variables and, as stated in Table A, it has its own drawbacks so this method was also not opted. In the present study we have attempted to estimate the cost-of-illness on the basis of 'Cost-of-Illness Approach' which is aimed at estimating direct medical costs associated with an illness and sometimes include the cost to society because of lost earnings. We have also made use of the AB approach in our analysis. Please be reminded that 'cost of illness approach' is one of the 'costs of illness methods'. Therefore these two notions should not be confused with each other.

A cost of illness study can be conducted from various different perspectives and each perspective provides different cost of a particular disease or a group of diseases. Table (B) as proposed by Luce (1997) presents the costs included in each perspective. Although the societal perspective is the most comprehensive one as it includes all costs, both direct and indirect, to all members of the society. However because of lack of all required data we will be following the 'health care perspective' to include only the medical costs. Proper estimating the total value of this lifetime stream of costs requires understanding

several key considerations, including:

- 1- Costs incurred at a later time should be discounted
- 2- there are several different kinds of costs, and
- 3- Costs of an illness are incremental costs.
- 4- The lifetime stream of costs associated with an illness will vary from one individual to another for a variety of reasons, including, for example, the age of onset of the illness.

TABLE: (B)	
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COSTS ACCOUNT AT THE COST-OF-INERESS							
Perspective	Medical Costs	Morbidity Costs	Mortality Costs	Transportation/ Non-Medical Costs	Transfer Payments		
Societal	All costs	All costs	All costs	All costs			
Health Care System	All costs						
Third Party Payer	Covered costs		Covered costs				
Businesses	Covered costs (Self-insured)	Lost Productivity (Presenteeism/ Absenteeism	Lost Productivity				
Government	Covered (Medicare, Medicaid)			Criminal Justice Costs	Attributable to illness		
Participants and families	Out-of-Pocket costs	Lost wages/ household production	Lost wages/ household production	Out-of-Pocket costs	Amount received		

2.3- An Overview of COI: Table (C) provides a theoretical overview for the calculation of the cost-of-illness. All costs are average per capita costs and are incremental (i.e., the costs of illness beyond those expected to be incurred by the same individual in the absence of the illness). However because of the involvement of a number of parameters, we will focus our studies only on the calculation of direct medical costs in case of Punjab Province, we would include other parameters as good estimates to calculate the total cost-of-illness as per the requirements of the Table (C).

Some goods and services are instrumental in improving health. Out of these services the most crucial are the one provided by the medical personnel like doctors, nurses, clinicians etc. It is also an admitted fact that another important source of such services is the household itself, e.g. the nursing services provided by parents to their siblings and vice versa. Jack (1999) argues that because of limited data it is often necessary to analyze the effects of medical care on health outcomes at highly aggregated levels, usually relying on gross medical expenditure per capita and a few other variables (such as number of clinics, hospital beds and physicians per capita) as explanators.

TABLE (C)

Estimation of the Expected Present Discounted Value of Per Capita Lifetime Incremental Costs of an illness					
	Parameter	Derivation			
J	Number of years of post-diagnosis(an index)				
$dc_j^{medical}$	Direct medical costs j years post diagnosis	5			
$dc_j^{nonmedical}$	Direct nonmedical costs j years post diagnosis				
ic _j vlihm	Indirect costs j years post diagnosis: value of lost time due to heightened morbidity, estimated as the number of units of productive time (e.g. hours or days) lost in the jth year post diagnosis due to the illness				
ic j ^{vilthm}	Indirect costs j years post-diagnosis: value of lost leisure time due to heightened morbidity, estimated as the number of units of leisure time (e.g. hours or days) lost in the jth year post-diagnosis due to the illness times the value per unit time.				
$\cos t_j^{hm}$	Total cost of heightened morbidity incurred j years post-diagnosis. $\cos t_j^{hm}$ is an average cost among all those with the illness who survive j years post-diagnosis. Any of the components of $\cos t_j^{hm}$ may vary from one individual to another because of factors such as sex or age.	$\cos t_j^{hm} = dc_j^{medical} + dc_j^{nonmedical} + ic_j^{vlthm} + ic_j^{vllthm}$			
The cost of p	premature mortality:				
R	Discount rate, reflecting individuals' positive rate of time preference.				
X	Age of the onset of the illness				
D	Age of death from the illness	If death from illness occurs j years post-diagnosis, d = x + j			
М	Expected age of death, in the absence of the illness				

Source: An Introduction to Cost-of-Illness handbook (EPA, USA)

It is also a fact that in most developing countries the data is quite thin on the ground; therefore estimations based on aggregate levels might ignore implications at the microeconomic level. According to the basic microeconomic theory models, the alternative production possibilities available to a production unit (like a firm) are defined by a production function y=f(x) which yields the output y produced as per the given combinations of inputs, $x = (x_1, x_2, ..., x_n)$ [which is a vector]. Now this gives rise to the derivation of a cost function, c(w, y), that provides the minimum cost of producing y units of the output when the vector of the prices is given as, $w = (w_1, w_2, ..., w_n)$.

Now as far as the production of medical care is concerned, we encounter a number of complications. The first complication is that hospitals, doctors, clinics and other medical facilities serve different purposes and therefore can be seen as producing different goods. Within each of these goods, multiple goods are produced like immunization, surgery etc. A second complication is that these units produce goods or services which are patient specific. This causes the same services rendered to different individuals to pay different costs depending upon individual's health, his willingness and respond to treatment etc. and the like. Hence, both theoretically and practically, it is extremely difficult to calculate the exact costs of a disease or group of diseases. The present study has, therefore, taken some economic costs at aggregate levels.





CENSUS

Source: Federal Bureau of Statistics, Islamabad.

administratively divided into four provinces, namely; Punjab, Sind, NWFP and Baluchistan.

The population of Pakistan is unevenly distributed. The Baluchistan Province is the largest province of the country with about 44% of the total area but contains only 5% of the total population. The Punjab Province is the most populous country and its population, as shown in the pie chart (Fig. 3.1), exceeds the total population of the other three provinces. As per the figures of the Federal Bureau of Statistics (FBS), Table 3.1 gives the distribution of area, population, annual growth rate and population density of the country as per the census of 1981 and 1998.

PROVINCE	Area	3		Population [In thousand]		Population Density [Per sq km]		Inter Censal Annual Growth Rate %	
	(Sq. Km)	%	1981	%	1998	%	1981	1998	1998
Pakistan	796095	100.0	84254	100.0	132352	100.0	106	166	2.69
Punjab	205344	25.8	47293	56.1	73621	55.6	230	359	2.64
Sindh	140914	17.7	19029	22.6	30440	23.0	135	216	2.80
NWFP	74521	9.4	11061	13.1	17744	13.4	148	238	2.82
Balochistan	347190	43.6	4332	5.2	6566	5.0	12	19	2.48
Islamabad	906	0.1	340	0.4	805	0.6	376	889	5.20
Fata	27220	3.4	2199	2.6	3176	2.4	81	117	2.19

 Table 3.1:Distribution by area, population by province and annual growth rate of Pakistan.

Source: Federal Bureau of Statistics, Islamabad

Since Islamabad is Federal Capital Territory so its population is presented separately. The figures of Federally Administered Tribal Areas (FATA) are also shown separately.

The Punjab Province is the land of five rivers (Beas, Ravi, Sutlej, Chanab, and Jhelum) and country's 2nd largest province at 205,344 square km and placed at the northwestern edge of the Indian Plate in South Asia. The word 'Punjab' has two parts, namely, Punj (means five) and aab (means water) .Nearly, 56 % of the population of Pakistan lives in Punjab which constitutes 34 districts (Fig.3.2) and its population is estimated at 86,084,000 in 2005. Punjab is a fertile plain region along the river valleys. The Indus River and its tributaries traverse the Punjab from north to south and heavily irrigate it with strong irrigation network. It is surrounded by Sind and Baluchistan Provinces in the Southwest, North Western Frontier Province (NWFP) to the West and Azad Kashmir, disputed Jammu & Kashmir and Islamabad to the North.

After a military coup in 1999, an agenda was set in which the government vowed and claimed to introduce new political system by the devolution of power at the grass root level. As a result local governments Elections were held in 2000 and 2005 in which District Governments were formed. The office of the powerful District Magistrate (DM), who used to be a career civil servant, was abolished. Now each district government has its own assembly comprising of Area Nazims who elect their District Nazim through internal polls. Each district government is headed by an elected politician called District Nazim.



Fig. 3.2:

34 Districts of the Punjab Province

The District Nazim, in contrast to the DM, is a politician elected by the people. Accordingly district governments were formed in all 34 districts of the Punjab Province as well. These new district assemblies were also entrusted with making their financial budget and collecting certain taxes. A number of powers of the federal and provincial governments were curtailed and given to the district governments. Keeping in view the new political set up at the district and provincial levels in Pakistan, much times taking, tiring and laborious job of calculating the cost of illness, associated with various waterborne diseases at the district level, has been done in this paper by making use of the software available at the website².

4- The Data and Description of Methodology: The data on water was collected during the field work in Pakistan. Two main data providing organizations include:

- a. The Centre for Communicable Diseases Control (CDC), Health Department, Government of the Punjab.
- b. Pakistan Council of Research in Water Resources (PCRWR).

4.1- The Data Set I: The first set of data obtained from Pakistan Council of Research in Water Resources has a weight of 470 KB and its soft copy has been attached with this paper as WQDATA1.doc. A few pages of Sheet 1 of the data have also been placed as Annexure 3. As per the details of the data, nearly 300 water samples from 22 cities of Pakistan have been collected regularly for a period of 5 years 'between' 2000-2005. Mainly the data is collected from various cities of Pakistan; however it includes the districts of Punjab as well like Bahawalpur, Faisalabad, Gujranwala, Gujrat, Kasur, Lahore, Multan, Rawalpindi, Sargodha, Sheikhupura and Sialkot. On the basis of these samples, 1725 analyses have been done. The concentration of the chemicals and trace elements has been quantified. As per the standards of WHO, the permissible limits of these chemicals and elements are given in row 3 of sheet 1 of the data set. After the analysis of the water samples, PCRWR has classified the physical and chemical properties of the water samples into 25 categories. These properties are given in the columns between I-AG of sheet 1. Complete data set, comprising of 1725 sample analyses, is given in the rows 'between' 4-1728 of the data sheet 1. The code book for columns E, F, G and I of sheet 1 has been given in the sheet 2. This code book covers 23 locations, 15 sources, 7 colors and 2 odor based categories.

4.2- Sample Analysis: Depending on the types of pollutants, the water samples have been analyzed for many parameters like 'Total Dissolved Solids (TDS)', Total Suspended

² www.healthstrategy.com

Solids (TSS)', Biochemical Oxygen Demand (BOD) and others³.

4.2.1- Identification of Industrial and Urban Pollution Sources: In various districts of the Punjab, many pollution causing point and non-point sources including tube well, well supply, tap, bore, reservoir, cistern, hand pump, injector pump, donkey pump, dam, karez, river, springs, and wells have been identified and recorded. The pollution sources data has been attached in Annexure-3. However, the number of samples has been determined after preparing the inventory of the pollution sources.

4.2.2- Classification of Pollutants: On the basis of data analysis, the pollutants so determined have been classified into the following categories and the polluters can be grouped accordingly.

- i. Oxygen-demanding wastes (organic materials)
- ii. Disease causing agents (Pathogens, viruses and parasites)
- iii. Plant nutrients (Phosphorous and Nitrogen).
- iv. Synthetic organic compounds (detergents and hydrocarbons)
- v. Oils (lubricants)

vi. Inorganic chemicals and mineral substances (inorganic salts, mineral acids, metals and metal compounds)

- vii. Emerging gases (Hydrogen Sulphide etc.)
- viii.Solid wastes

The identification of the presence of dangerous pollutants and chemical compounds from the PCRWR data can be helpful for the following purposes:

- 1- Encouraging point source pollution reduction.
- 2- Reducing the health risks in the catchments area.
- 3- Economic uplift of local people.

The analysis of water samples from all across the Punjab Province has provided us with various physical and chemical properties of the water samples. On the basis of this data,

³ Others include, Hydrogen Ion Concentration (PH), Electrical Conductivity (EC), Calcium, Magnesium, Sodium, Potassium, Boron, Phosphorous, Chloride, Carbonate, Bicarbonate, Sulphate, Nitrite, Nitrate, Arsenic, Cyanide, Cadmium, Arsenic, Barium, Manganese, Zinc, Chromium, Copper, Iron, Mercury, Nickel, Selenium, Sodium Absorption Ratio (SAR), Dissolved Oxygen (DO), Chemical Oxygen Demand (COD), Total Organic Carbon, Phenol compounds, Bacteria, Viruses, Protozoa, and Parasitic worms.

we have also identified the concentrations of various chemical elements in the water samples which are instrumental in causing the waterborne diseases in the area. This analysis would be helpful in identifying the correlation between various chemicals found in the water samples from all across the Punjab and the incidences of the waterborne diseases in the province. This perspective would, itself, be helpful in identifying various research prospects and questions on the subject and can promote further research on the topic. Any further investigation of the topic from this perspective has been kept out of the scope of this paper.

4.3- The Data Set II: Second set of data was collected from the Centre for Communicable Diseases Control (CDC), Government of the Punjab. This data provides us information regarding the number of patients, under different categories of age groups and diseases, who visited various hospitals and medical facilities in the province of Punjab. This data is maintained by the Health Management Information System for First Level Care Facilities, Government of the Punjab. It is titled as Priority Diseases Report with Code PG3. This data is collected and monitored throughout the year, i.e. between January and December every year. For the purposes of this study, data for twelve years 'between' 1995-2006 was collected. This data set provides information on the incidences of 18 different communicable diseases with three main categories, i.e. 'cases under the age of 5', 'cases over 5' and 'total'. Under the category of 'cases under 5', three further categories have been given which include, 'under 1', '1-4' and 'total<5'. Under each of these categories, the incidences of various diseases in the Punjab Province have been given. Out of the 18 diseases covered in this data set, we have selected only 5 diseases (which are waterborne) with the consultation of the CDC authorities. These diseases include diarrhea, dysentery, poliomyelitis, goiter and suspected viral hepatitis with Priority Diseases Codes 101, 102, 108, 113 and 114 respectively. This voluminous bulk of data⁴ was squeezed for these five main waterborne diseases only and was re-compiled

⁴ Although the data attached as Annex 2 is sufficient for the analysis done in this paper, however, the soft copy of the complete data set, regarding all 18 communicable diseases, carrying a weight of 1.8 MB has been attached with this paper as 20071107125912540.pdf as it can be used for further research. Since the data was maintained in the ACCESS computer formatting, therefore it could not be copied. Hence it is attached as a picture.

and placed in Annexure 2.

The data attached in Annexure 2 and 4 along with the baseline data provided by World Bank's SCEA 2006 Report has been used to calculate the cost-of-illness of waterborne diseases in 34 districts of the Punjab Province. This SCEA 2006 report provides baseline data on diarrhea and typhoid/paratyphoid only. On the other hand the CDC data, attached in Annexure 4, provides data for diarrhea, dysentery, goiter, poliomyelitis and suspected viral hepatitis. In this paper we have used the diarrhea baseline data for dysentery as well because of close resemblance of the two diseases. Moreover some cost components of typhoid/paratyphoid have been used for hepatitis; in consultation with CDC experts (see Table 5.1). Keeping in view lack of baseline data, the COI for goiter and poliomyelitis has not been calculated. Therefore the COI of poliomyelitis and goiter has been included as similar estimates as per the advice of CDC officials in Lahore.

The website, used for the purposes of COI calculations, provides about 29 softwares for various health economics purposes. We have used the software titled 'Cost of Illness— Calculator and Grapher' in our analysis. This software is very helpful in providing not only the COI of a particular disease but also many other parameters like 'percentage', 'average', 'use per patient' and 'cost per patient'. The software also provides with the break up of the total COI by including various factors in the graph contributing towards the COI. Only medical costs have been calculated in all districts⁵ of the Punjab Province separately through the software. Since the software does not recognize the Pakistan Rupee, therefore, '\$' sign appearing anywhere in the analysis may be read as 'Pakistan Rupee' unless/otherwise mentioned.

For the purposes of the COI calculations for diarrhea and dysentery, following ten parameters have been used:

- 1- Average cost of medicine
- 2- Average cost of preventive diet

⁵ Districts include: Attock, Bahawalpur, Bhakkar, Bahawalnagar, Chakwal, D.G. Khan, Faisalabad, Gujrat, Gujranwala, Hafizabad, Jhelum, Jhang, Kasur, Khanewal, Khushab, Lahore, Lodhran, Layyah, Multan, Mianwali, Muzafargarh, Mandi B. Din, Narowal, Okara, Pakpattan, Rawalpindi, Rahim Yar Khan, Rajanpur, Sialkot, Sahiwal, Sheikhupura, Sargodha, Toba Tek Singh, and Vehari.

- 3- Cost of medical facilities
- 4- Average cost of doctor visits
- 5- Average cost of ORS in children
- 6- Average cost of ORS in adults
- 7- Cost of hours lost in care giving
- 8- Cost of hours lost to illness
- 9- Hospitalization expenses for children
- 10-Hospitalization expenses for adults

For the purposes of the COI calculations of Hepatitis, following nine parameters have been taken into account:

- 1- Average cost of medicine
- 2- Average cost of preventive diet
- 3- Cost of medical facilities
- 4- Average cost of doctor visits
- 5- Cost of laboratory tests
- 6- Cost of hours of care giving (children)
- 7- Cost of hours of care giving (adults)
- 8- Hospitalization expenses for children
- 9- Hospitalization expenses for adults

For the purposes of data entry of the above mentioned parameters and subsequent COI calculations, following three sources were used:

- 1- CDC data
- 2- Technical Part of World Bank's SCEA (August 2006) Report for baseline data
- 3- Consultations with CDC experts

From the CDC data attached in Annexure 2, we calculated the percentages of the number of patients 'under the age of 5' (called children) and 'over the age of 5' (called adults) treated at various hospitals of the Punjab Province. This percentage comes out to be 47% for children and 53% for adults. Annexure 4 contains the data showing the number of patients of diarrhea, dysentery and hepatitis who visited various hospitals between years 2001-2005 in various districts of the Punjab Province. The average number of patients of these five years has been shown in the extreme right column of the data. This average has

been used as the 'number of patients' for our analysis and COI calculations. The SCEA report and baseline data for cost estimation is available at the World Bank website⁶. This baseline data is re-compiled in the Table 5.1 below:

Table 5.1

Baseline data for cost estimation of diarr	hea, dysentery and	hepatitis		
	Baseline	Source		
Average cost of medicine for treatment of diarrhea & dysentery	Rs.50 per patient	SCEA 2006 Report		
Average cost of preventive diet for diarrhea & dysentery	Rs.50 per patient	Per consultation with CDC and health authorities in Pakistan		
Patients treated at medical facilities for diarrhea (also assumed for dysentery and hepatitis)	70%	SCEA 2006, PIHS 2001/2002, DHS 1990/1991		
Average cost of treatment for hepatitis	Rs. 6000 per patient	per consultation with CDC and health authorities in Pakistan		
Average cost of preventive diet for hepatitis	Rs. 6000 per patient	-do-		
Average duration of diarrhea in days (children and adults)	3-7=Av. 5	PIHS 2001/2002, SCEA 2006		
Hospitalization of all diarrhea and dysentery cases for children 0.75% of total cases		Adjusted based on evidence from Egypt (Larsen, 2004) and SCEA 2006		
Hospitalization of all diarrhea and dysentery cases for adults	0.5% of total cases	-do-		
Average cost of medical facilities for diarrhea and dysentery	Rs.80 per patient	per consultation with CDC and health authorities		
Average cost of hospitalization for diarrhea and dysentery	Rs.500 per day per patient	SCEA 2006		
Value of time for adults	Rs.7.71=rounded at 8	based on rural and urban wages in Pakistan quoted by SCEA 2006		
Hours per day of care giving per case of diarrhea and dysentery in children	2	Assumption by SCEA 2006		
Hours per day lost to illness per case of diarrhea and dysentery	2	Assumption by SCEA 2006		
Average cost of doctor visits for diarrhea and dysentery Rs.50 per patie		SCEA 2006		
Average cost of ORS per diarrhea (and dysentery) case in children	Rs.30 per patient	SCEA 2006		
Average cost of ORS and other brackish drinks per diarrhea (and dysentery) case in adults	Rs.50 per patient	per consultation with CDC and health authorities in Pakistan		
Average cost of medical facilities for hepatitis per patient	Rs.800 (10 times of diarrhea and dysentery)	assumed in consultation with CDC		
Average cost of doctor (specialist) visits per patient	Rs.500 (10 times of diarrhea and dysentery)	SCEA 2006 and consultations with health authorities in Pakistan		
Average cost of laboratory tests (including LFT) for hepatitis	Rs.1000 per patient	CDC		

⁶ <u>www.worldbank.org</u> (Report No.36946-PK)

Hospitalization percentage of hepatitis patients (children)	80%	-do-
Hospitalization percentage of hepatitis patients (adults)	20%	-do-
Duration of hospitalization for hepatitis patients (children and adults)	14 days	-do-

Average cost of diarrhea (and dysentery) has been taken at Rs.50 per patient by SCEA 2006 report on the basis of World Bank's consultations with pharmacies, medical service providers and health authorities. The average cost of preventive diet has also been taken at Rs.50 per diarrhea patient in consultation with CDC authorities. SCEA 2006 report has estimated the percent of diarrheal cases treated at medical facilities over the age of 5 between 57-82% on the basis of data from Pakistan Demographic Household Survey (DHS) 1990/91 and priority disease statistics at www.pakistan.gov.pk. The average of these percentages comes out to be 70%. Therefore diarrhea patients treated at medical facilities have been taken at 70%. The same percentage has also been assumed for dysentery patients because of greater similarity of the two diseases. The average cost of treatment of hepatitis has been taken at Rs.6000 per patient after consulting the health authorities of the Punjab government and CDC experts. An equivalent amount has also been set under the head of preventive diet with the same source. On the basis of data available at the Pakistan Integrated Household Survey (PIHS) 2001/2002, SCEA 2006 report has set the duration of diarrhea at 3-7 days. For our analysis, we have taken its average which gives the duration of diarrhea as five days. Again we have assumed the same duration for dysentery patients on the basis of similar nature of diarrhea and dysentery. SCEA 2006 report has assumed the hospitalization rates of diarrhea cases as 0.75% and 0.5% for children and adults respectively. This assumption has been made on the basis of evidence from Egypt as a result of a study carried out by Larsen (2004). We have assumed same rates for dysentery as well. Average cost of medical facilities available to diarrhea and dysentery patients has been set at Rs.80 per patient after consulting the CDC and health authorities. As per World Bank's consultations with hospitals, SCEA 2006 report has fixed the hospitalization charges at Rs.500 per day per patient. We have used the same figure for diarrhea, dysentery and hepatitis patients. On the basis of rural and urban wages in Pakistan, World Bank has estimated the value of time for adults at Rs.7.71 per hour. We have rounded this value at Rs.8 per hour for our analysis. On the basis of assumptions made by SCEA 2006 report, we have taken 'hour

lost to care giving (for children)' and 'hour lost to illness (for adults)' at 2 hours per diarrhea patient per day. We have assumed the same for dysentery patients as well. As per consultations of World Bank with pharmacies, medical service providers and health authorities, SCEA 2006 report has taken the cost of ORS at Rs.30 per diarrheal case in children. We have assumed the same amount for dysentery as well. Moreover we have set the monetary value of anti-diarrheal brackish salts and soda drinks used by adults at Rs.50 per patient of diarrhea or dysentery. Average cost of medical facilities available to hepatitis patients have been set at 10 times that of diarrhea and dysentery patients after consultations with CDC experts, i.e. Rs.800 per patient. Average cost of doctor visits has also been taken 10 times that of diarrhea and dysentery patients on the basis of the assumption that greater complications are involved in hepatitis and a liver specialist is required for the treatment of this disease. This amount has been set at Rs.500 per patient. The average cost of laboratory tests have been set at Rs.1000 per hepatitis patient as per consultation with CDC because hepatitis patients require frequent laboratory tests (mostly LFT). Moreover the hospitalization rates of hepatitis have been taken as 80% and 30% for children and adults respectively again after consulting CDC experts. The average duration of hospitalization of hepatitis patients, as suggested by CDC, has been set at 14 days per patient. The baseline data along with the CDC data (Annexure 4) has been used in the software for calculating the direct medical costs of diarrhea, dysentery and hepatitis.

In order to understand the mechanics of the software and the methodology involved, we are going to discuss one case each for diarrhea, dysentery and hepatitis in any one of the districts of Punjab. Let us take the district Attock (see Annexure 1) as an example. As per the details provided in the case of district Attock, we have taken 10 components for the purposes of COI calculations. The number of patients has been taken as 37044 which represent average number of diarrhea patients who visited various hospitals in the district Attock (see Annexure 4). By making use of the baseline data available with SCEA 2006 Report, the average cost of medicine has been taken as Rs.50 per diarrhea patient. The SCEA 2006 Report, PIHS 2001/2002 and DHS 1990/1991 suggest that 70% of the total patients of diarrhea were given medical facilities in various hospitals and clinics. The CDC and health authorities in Lahore estimate the average cost of medical facilities for

each case of diarrhea and dysentery at Rs.80 per patient. The 'units consumed' column in the software refers to the number of patients who were brought to various hospitals in the district Attock. This number comes out to be 25931 which is 70% of the total patients (37044*70/100). The SCEA 2006 Report suggests that the average cost of doctor visits per patient of diarrhea is Rs.50. It is assumed that the number of patients is the same as the number of patients treated at medical facilities. The units consumed have, therefore, been taken as 25931. An estimation regarding the percentage of diarrhea, dysentery and hepatitis patients was made from the CDC data (see Annexure 2). This estimation has shown that 47% of the total patients are children under the age of 5 (called children) and 53% of the total patients are over the age of 5 (called adults). Therefore the total number of patients has been taken at 47% and 53% for children and adults respectively. The corresponding figures in this regard come out to be 17411 (47% of 37044) and 19633 (53% of 37044). The estimated cost of anti-diarrheal brackish salts (called ORS) has been taken from the baseline data and it is Rs.30 per patient for children and Rs.50 per patient for adults. The baseline data suggests that the monetary value of time for adults, based on urban and rural wages in Pakistan, is Rs.8 per hour. The baseline data also assumes that diarrhea causes two hours per day of care giving to children and also causes the loss of two hours per day for adult diarrheal cases. The data also assumes (on the basis of medical evidence) that diarrhea lasts for 5 days on the average. These figures suggest that:

Units consumed for children = Hours lost * Duration of illness * Number of patients

= 2 * 5 * 17411 = 174110

Similarly,

Units consumed for adults = 2 * 5 * 19633 = 196330 and so on.

These figures have been placed in the 'units consumed' column. The baseline data also suggests that the cost of hospitalization per day per patient is Rs.500. The total cost of hospitalization has, therefore, been taken as Rs.2500 for both children and adults in accordance with the assumption that diarrhea lasts for five days. The figures taken in the 'units consumed' column have been taken as 131 and 98 representing 0.75% of 17411 and 0.5% of 19633 respectively.

In case of the district Attock, the total direct medical costs come out to be Rs.12.11

million. The graph showing the division of these expenses suggests that 15.3% of the total cost was spent on purchasing diarrhea preventive medicine. Another 15.3% of the total cost was spent on the use of preventive diet for diarrhea. 17.1% of the total cost was spent on the provision of medical facilities and their maintenance (subsidies inclusive). 10.7% of the total cost of direct medical expenditure on diarrhea was paid to doctors and physicians for the visits and check up. The use of anti-diarrheal brackish salts (ORS) constitutes 4.3% and 8.1% of the total cost for children and adults respectively. The monetary value of the hours lost to care giving to children constitutes 11.5% of the total cost. Similarly the monetary value of the hours lost to illness (diarrhea) in adults represents 13% of the total cost. And finally the hospitalization expenses for diarrheal children and adults come out to be 2.7% and 2% of the total cost respectively.

Another set of useful information, obtained through this analysis and calculations, yields the cost per diarrhea patient under each head of expenses. In other words it provides a badly needed baseline data for further research on the subject. So to say, in addition to the average cost of medicine and preventive diet (as per the baseline data) Rs.56 per patient are spent on the provision of medical facilities in the district Attock. Similarly Rs.35 per patient of diarrhea are spent on the visits of doctors. The cost of ORS per diarrhea children and adult patients is estimated at Rs.14 and Rs.26 respectively. The monetary value of hours lost to care giving to children and hours lost to illness (diarrhea) has been estimated at Rs.38 and Rs.42 per patient respectively and so on.

Since diarrhea and dysentery are very similar in symptoms, nature, treatment and medicine, therefore, the baseline data used for diarrhea by SCEA 2006 Report has also been used for dysentery. In case of district Attock, the direct medical cost incurred on dysentery has been estimated at Rs.2.18 million in the present study. The expenditures graph of dysentery for district Attock reveals that 15.3% of the total cost was spent on the purchase of medicine. The cost of ORS for children and adults is 4.3% and 8.1% of the total costs respectively. Rest of the information is almost similar to the one we calculated in the case of diarrhea in district Attock.

However the interpretation of the results of hepatitis is very different than those of diarrhea and dysentery. Reason being that hepatitis is extremely a different disease in comparison to diarrhea and dysentery. Its treatment duration is longer as compared to

diarrhea and dysentery but incidences are comparatively less. Let us again take up any one case of the results attached in Annexure 1 and the mechanism involved in the calculations of direct medical costs. Let us again consider the case of district Attock for hepatitis. For hepatitis, we have used nine parameters in the 'component' column of the software. Since hepatitis is a waterborne disease that causes inflammation of liver so its treatment is comparatively longer and ranges from 2-10 months depending upon the gravity and type of the disease (note that hepatitis has many types). As per the consultations with CDC authorities in Pakistan, the average cost of medicine for hepatitis has been set as Rs.6000 per patient. An equivalent amount has been assumed under the head of 'preventive diet' for the purposes of the calculations of direct medical costs. The SCEA 2006 Report provides that 70% of diarrhea patients are treated at various medical facilities in Pakistan. The same figure (70%) has been assumed for hepatitis in our analysis. As per consultations with CDC, the average cost of medical facilities provided to hepatitis patients has been set at Rs.800 (80*10) per patient which is 10 times that of diarrhea and dysentery patients. Similarly under the head of 'average cost of doctor visits', Rs.500 per patient have been allocated assuming that a liver specialist is required for the treatment of hepatitis. The sources of this assumption have been given in Table 5.1. Since the diagnosis and treatment of hepatitis requires frequent clinical laboratory tests, therefore Rs.1000 per hepatitis patient have been fixed for COI calculation purposes in consultation with CDC authorities in Pakistan. Again the value of time for adults has been taken as Rs.8 per hour which is based on rural and urban wages in Pakistan. It has also been assumed in the analysis that 47% of all cases are children and 53% are adults. This assumption is based upon the percentage of 'cases under the age of 5' and 'cases over the age of 5' as presented in Annexure 2. The percentages for hospitalization for diarrhea and dysentery cases are negligible (0.75% for children and 0.5% for adults), however in case of hepatitis the percentage of hospitalization is much higher because of various medical complications of the disease. Therefore the hospitalization percentages for hepatitis patients have been set at 80% and 30% for children and adults respectively. The source of this assumption has also been given in the Table 5.1.

The data presented in Annexure 4 reveals that the hepatitis incidences in the district Attock are far less, i.e. only 34. So we have put the number of patients as 34 in the

software for calculations. The rest of the procedure is the same as explained above in the case of diarrhea. The total direct medical cost in the case of district Attock, as calculated by the software, comes out to be Rs.0.87 million which is a low bound estimate. The whole exercise of calculating direct medical costs of diarrhea, dysentery and hepatitis addresses the following concerns:

- It provides us a reasonable baseline data regarding the direct medical costs at the district level of the Punjab Province and can be helpful for district governments for policy making.
- 2- It helps tremendously in estimating the total cost of direct medical expenditures incurred on all three waterborne diseases and their subsequent economic implications.

From the theoretical part we observed that the cost of heightened morbidity incurred 'j' Years post diagnosis $Cost^{hm}{}_{j}$ is an average cost among all those with the illness who survive 'j' years post diagnosis. Any of the components of $Cost^{hm}{}_{j}$ may vary from one individual to another because of such factors as sex or age etc. For further investigation on the topic, Hedonic Valuation (HV) Approach can be applied. As stated in the theoretical part of this paper, HV studies use regression analysis to estimate the relationship between environmental improvement or reduced workers risk and other independent variables. For example a hedonic wage study may attempt to describe a relationship between wage rate and job related risks (i.e. what is the premium required to compensate the workers for the added risk they incur from their occupation). However the weakness of hedonic approach is based upon the difficulty in separating illness effects from other independent variables. Therefore this approach has not been employed in the present study. Another reason for not using the HV approach is the non-availability of data at the district level of the Punjab Province. Hence the present study has followed the 'COI' and 'averting behavior' approaches in determining the conclusions.

This paper has attempted to estimate the direct medical costs of waterborne diseases like diarrhea, dysentery and hepatitis in each district of the Punjab Province separately. Those estimated costs have been calculated as low bound estimates as it does not include some other waterborne diseases. Also the estimation does not include the value of productive and leisure time lost to the illness. These undone aspects of the present study provide

sufficient vacuum for further research on the topic. Now let us again look at the equation from Table (C):

 $Cost^{hm} = dc^{medical} + dc^{non-medical} + ic^{vllhm} + ic^{vllhm}$ (1)

Although this perspective is more relevant from the view point of 'Incremental Costs', however, we can apply the same equation for the calculations of the COI. The first step towards calculating the COI is to add up the direct medical costs calculated in this paper, good estimates of the costs of diseases which have not been included in this study due to lack of data, the indirect medical costs like the loss of time and any other factor that we come across during the course of research.

5- Empirical Findings:

As far as the empirical findings are concerned, we can just add up all the medical costs incurred on diarrhea, dysentery and hepatitis separately (Annexure 1) to get the following results.

Direct medical costs of diarrhea = Rs.555.26 million Direct medical costs of dysentery = Rs.312.55 million Direct medical costs of hepatitis = Rs.613.84 million Total =Rs.1.48 billion

Therefore the volume of direct medical costs in lieu of three main waterborne diseases comes out to be Rs.1.48 billion.

Now the second issue that we confront is to estimate the cost of other widespread waterborne diseases in the Punjab Province. There are two main categories in this regard: First category comprises of the diseases which are direct result of contaminated water. These diseases include diarrhea, dysentery, hepatitis, poliomyelitis, goiter, typhoid, and paratyphoid. Second category comprises of diseases which are not caused due to immediate direct impact of polluted water but take place due to the use of contaminated water over longer periods of time. These diseases include the following:

- 1- Fluorosis OR bone deformation
- 2- Anaemia OR iron deficiency

It is noteworthy here that fluorosis or born deformation is a very common waterborne disease in some parts (like tehsils of Mangamandi and Chung) of the district Kasur. The main reason for the prevalence of this disease in the area is the presence of water logging,
salinity, tanneries and other allied industry. Therefore the COI in district Kasur is expected to be much higher as compared to the one calculated in this paper (i.e. Rs.20.74 million only).

The direct medical costs of typhoid and paratyphoid have been estimated by the SCEA 2006 Report and this cost converges at Rs.1.9 billion as a low bound estimate. For the rest of diseases like goiter, poliomyelitis, fluorosis and anaemia, we had several meetings with the CDC experts and specialists who suggested that an addition of an equal amount, already calculated under the head of diarrhea, dysentery and hepatitis, can be a good estimate in this regard. Accordingly we have added another 1.48 billion under the head of goiter, poliomyelitis, fluorosis and anaemia. Hence we have come up with the following costs break up:

Direct medical costs of diarrhea, dysentery and hepatitis = Rs.1.48 billion (Calculated) Direct medical costs of typhoid and paratyphoid (for Punjab) = Rs.0.95 billion (1.90/2) [SCEA 2006]

Direct medical costs of goiter, poliomyelitis, fluorosis

and anaemia

Total direct medical cost

= Rs.3.91 billion

= Rs. 1.48 billion (assumed)

Therefore the total cost of direct medical expenditures incurred on all waterborne diseases comes out to be Rs.3.91 billion. Let us again have a look on the model presented in equation (1); we can observe that we have just been able to calculate the direct medical cost component of the model till this time. The direct non-medical costs (like transportation) and other indirect medical costs like the value of time lost due to heightened morbidity and the value of leisure time lost due to heightened morbidity have not been included in the total COI till this time. These costs draw our attention to the mortality costs caused by various waterborne diseases. Many social scientists, even some economists, disagree with the concept of giving a monetary value to the lost human life. However it seems to be a practice in economics to give a material value to every good and probably human life is no exception. In our studies, moreover, we have taken into account only small part of time lost to illness, i.e. two hours per day per patient at the rate of Rs.8 per hour to calculate direct medical costs. As far as non-medical costs and indirect medical costs, as suggested by SCEA 2006 Report, are concerned, the value of

time lost is much higher. After noticing all the above mentioned factors contributing towards the total COI, we can conclude our discussion and the calculations of almost all waterborne diseases in the Punjab Province as follows:

5.1- Direct costs:

1- Direct medical costs for diarrhea, dysentery and hepatitis	= Rs.1.48	billion
(calculated)		
2- Direct medical costs of typhoid and paratyphoid	= Rs.0.95	billion
(estimated from SCEA 2006 Report)		
3- Direct medical costs of goiter, poliomyelitis, fluorosis		
and anaemia	= Rs. 1.48	billion
(assumed in consultation with CDC)		
5.2- Indirect costs:		
4- Cost of diarrheal mortality in children	= Rs.29.25	billion
(estimated from SCEA 2006 Report)		
5- Cost of time lost to diarrheal illness	= Rs. 2.75	billion
(estimated from SCEA 2006 Report)		
6- Cost of mortality of hepatitis	= Rs.29.25	billion
(assumed the same as that of diarrhea and dysentery)		

Total Cost of Illness of waterborne diseases in the Punjab Province = Rs.101.36 billion per annum

The 'direct costs' component includes three costs. Out of these three 'direct medical costs for diarrhea, dysentery and hepatitis have been calculated through the present study and it is figured out at Rs.1.48 billion. The direct medical costs for typhoid and paratyphoid have been estimated form SCEA 2006 report. The SCEA 2006 report has estimated the annual costs of typhoid/paratyphoid as Rs.0.2 billion, Rs.0.7 billion and Rs.1.0 billion under the heads 'costs of hospitalization and doctor visits', 'cost of medication' and 'cost of time losses' respectively. The total figure in this regard comes out to be Rs.1.90 billion for whole of Pakistan. We have assumed half of this amount for the province of Punjab, i.e. Rs.0.95 billion, keeping in view that the Punjab Province constitutes almost half of the total population of Pakistan. The amount under the head 'direct medical costs of goiter, poliomyelitis, fluorosis and anaemia' has been assumed as the same as that of

'direct medical of diarrhea, dysentery and hepatitis', i.e. Rs.1.48 billion.

The 'indirect costs' component also includes three costs. SCEA 2006 report provides two estimates for the diarrheal mortality costs in children. One is 'low bound' and the other is 'high bound' thus amounting to Rs.45 billion and Rs.72 billion respectively. The average of these two figures comes out to be Rs.58.5 billion [45+72/2] for whole of Pakistan. We have assumed half of this amount to be the cost of diarrheal mortality in children in the Punjab Province, i.e. Rs.29.25 billion, again following the same principle that Punjab constitutes almost half of the total population of Pakistan. Similarly for the 'cost of time lost to diarrheal illness', SCEA 206 report provides two values as 'low bound' and 'high bound' at Rs.5 billion and Rs.6 billion respectively, thus giving an average of Rs.5.5 billion [5+6/2] for whole of Pakistan. We have taken half of this amount as the 'cost of time lost to diarrheal illness', i.e. Rs.2.75 billion.

Please note that we have yet not included the costs of mortality and lost time for the diseases of goiter, poliomyelitis, fluorosis and anaemia. Therefore the above calculated figure presents a low bound estimate of the cost of illness of all waterborne diseases in the Punjab Province. Scgcl (2006) suggests that a 3 percent discount rate is most common, although multiple rates are recommended to observe the effect of changing the discount rate.

5.3- Averting expenditures:

The Theory of Averting Behavior suggests that in the presence of perceived health risks, the individuals take certain averting expenditures to avoid these risks. For economists, these measures are referred to as a cost of health risks. *"If consumers perceive there is a risk of illness from the municipal water supply, or from other sources of water supply they rely, some consumers are likely to purchase bottled water for drinking purposes, or boil their water, or install water purification filters"*(SCEA 2006 Report). The report has quoted Rosmann (2003) presenting an estimate that about 70 million liters of bottled water are sold annually in Pakistan and the total annual cost of bottled water consumption is estimated at Rs.1-1.5 (average=1.25) billion. Average retail price has been taken at Rs.15 per liter. According to Luby (2001), 40% of households in Karachi use boiled water. The SCAE 2006 Report presents 'low bound' and 'high bound' values for the total annual household cost of averting expenditures. SCEA 2006 report has divided the

'estimated total annual household cost of averting expenditures' into two heads. One head is 'cost of bottled water consumption' and the other is 'cost of household boiling drinking water'. Under each of these heads the report has estimated 'low bound' and 'high bound' costs. For bottled water consumption, these 'low bound' and 'high bound' values are Rs.1.0 billion and Rs.1.5 billion respectively with an average of Rs.1.25 billion [1+1.5/2] for whole of Pakistan. Half of this amount has been assumed for the province of Punjab, i.e. Rs.0.625 billion. Similarly the 'low bound' and 'high bound' values for the cost of household boiling drinking water have been estimated at Rs.2.0 billion and Rs.5.1 billion respectively by the SCEA 2006 report. Again these figures converge at an average of Rs.3.55 billion [2+5.1/2] for whole of Pakistan. Half of Pakistan. Half of this amount has been assumed for the province of Rs.3.55 billion [2+5.1/2] for whole of Pakistan. Half of Pakistan. Half of this amount has been assumed for the province of Rs.3.55 billion [2+5.1/2] for whole of Pakistan. Half of this amount has been assumed for the province of Rs.3.55 billion [2+5.1/2] for whole of Pakistan. Half of this amount has been assumed for the province of Punjab, i.e. Rs.1.775 billion.

Therefore the total annual cost of averting expenditures in the Punjab Province is as follows:

- 1- Average cost of bottled water consumption in Pakistan=1+1.5/2=Rs.1.25 billion
- 2- Average cost of bottled water consumption in Punjab=half of 1.25=Rs.0.625 billion
- 3- Average cost of household boiling drinking water in Pakistan=2+5.1/2=Rs.3.55 billion
- 4- Average cost of household boiling drinking water in Punjab=half of 3.55=Rs.1.775 billion
- 5- Total annual cost of 'averting expenditures' in Punjab=0.625+1.775=Rs.2.4 billion

6- Conclusions and Recommendations:

The culmination of this study converges at the conclusions that ultimate environmental degradation has caused various waterborne diseases in all districts of the Punjab Province. Low bound estimates of direct medical costs due to these diseases have been calculated separately for each district of the Punjab Province. These results can be helpful in providing badly needed baseline data at the district level which will be very helpful for policy making and policy implementation at the district level. The local governments of the districts can use the COI, obtained through this study, in allocating resources under various heads. A low bound COI estimate of almost all waterborne diseases has been

calculated through this paper. These calculations suggest a huge amount of Rs.101.36 billion is being spent because of either direct or indirect implications of waterborne diseases in the Punjab Province. Moreover the annual cost under the head of averting expenditures, in lieu of bottled water and boiled water, has been estimated at Rs.2.4 billion. In general, the Averting Behavior Approach will be helpful in not only cutting the health expenditures but also achieving long term economic growth. Moreover the households in low income countries differ from the high income countries households in their income, education and stock of their water using appliances. They are also likely to face a different set of circumstances regarding their supply of potable water and, therefore, all but the poorest of the poor are willing to pay (a small amount) for clean water. The Augmented Solow Model and Lucas Model stress the importance of economic valuation of human capital. Since all the economic policies are directed, basically, towards human capital formation, therefore any factor that effects human capital formation is a direct threat to economic growth.

As far as the concept of human capital formation through education and health services is concerned, we know that the people as productive agents are improved by investment in these services. Therefore the health services like education become part of an individual and his effectiveness in field and factory. Consequently the future increase in labor productivity, resulting from the provision of health and education services, is quantifiable. The investment in health sector plays a vital role in the person of an individual. An individual is more effective in a society as a consumer or as a producer, mainly because of investment in health and education and the results of investment in health services reinforce the productivity of investments made in other sectors of the economy. A lengthening in the expectancy of life by improving health services simply reduces the rate of depreciation of investment in other sectors of the economy and increases the return on it. Similarly an increase in production efficiency improving other sectors of an economy increases the return on lifesaying investment in health. However it is a much more difficult problem to assess the loss to the country from the early death or incapacity of a future inventor, scientist or political leader. As a consumer good, health is extraordinary. It is not simply sought to satisfy human wants but is an essential ingredient of human welfare. Many researchers agree today that the provision of health services

benefits a country as a whole. For example, Mushkin (1962) argues that the purchase of health services for the prevention of contagious and infectious diseases, such as small pox, poliomyelitis and whooping cough, benefits the community as whole. Please note that poliomyelitis is a waterborne disease.

The provision of safe and clean drinking water should be the government's core area of concentration. Moreover there is a need to bring about a change in the peoples' behavior with regards to the use of bottled or boiled water. Being a part of over all health service, the provision of safe drinking water to the common people will contribute directly to human capital formation. Even measuring the human capital formation through health care is feasible merely by applying various econometric techniques. For example the economic resources (labor and commodities) allocated to health services represent in some part investment in health. However, in some parts, the health outlays improve the labor product and continue to yield a return over a period of years.

Mushkin et al. suggests the concept of measuring the stock of human capital which can be seen as very similar to measuring the stock of physical capital. This human capital formation by providing health services for a group of population can be counted, for example at cost—the cost of environmental and curative health services embodied over their life spans in age of the age cohorts in the present labor force. The cost for this purpose may be set at the cost of acquiring the health services in the years they were acquired; they can be determined on a replacement cost basis, or at a constant prices prevailing in a base year.

On the basis of the results of this study, we come to the following conclusions and recommendations:

- 1- The COI of main waterborne diseases in the Punjab Province has been estimated at Rs.101.36 billion per annum.
- 2- The annual cost of averting expenditures for safe drinking water has been estimated at Rs.2.4 billion.
- 3- An increase in averting expenditures with regards to safe drinking water can be helpful in cutting down the over all COI of waterborne diseases.
- 4- This study will be helpful for further research in the area at the district level, i.e. the micro level.

- 5- The results achieved through this study can be helpful in the local government budget formation at the district level.
- 6- Calculating the cost of provision of safe drinking water at the district level in Punjab is still a research question in this regard.
- 7- And finally the results also contribute towards creating awareness about the environmental degradation and water pollution in Pakistan in general and in each district of the Punjab Province in particular.

To address environmental issues and to overcome the health problems, at least on satisfactory level, such policies and institutional reforms are strongly recommended which could provide incentives for administrators to successfully implement policies and force polluters to observe rules and regulations. As a result, lower pollution will ensure health benefits and conservation of the rangelands into productive pasture lands which will enhance the earning capacity of Pakistan. This situation demands for strong implementation of regulations and active structures that could bring compatibility of benefits with costs and take full advantage of the sustainability and growth prospects of the economy.

For achieving a satisfactory level, environmental governance must be target oriented and integrated into economic decision making policies at macro to the micro levels, i.e. provincial and sectoral levels. For the better results again data and information on critical issues are required. Therefore strengthening the data base should be a priority policy area. But there are constraints such as lack of data on environment, therefore, institutions remain meager and scattered that construct qualitative picture of most of the research done on the topic in the country. Moreover specific environmental issues of Pakistan, like water pollution, are chronic in nature and require prompt action and immediate solutions.

ANNEX 1

The software does not recognize Pak Rupees. Therefore the '\$' sign appearing anywhere in this analysis may be read as Pak Rupees.

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Number of Patient – 37044		Title –	COI of diarrhea in District Attock				
Component	Cost/Unit	Units	Total Cost	Percent	Average	Average	
		Consumed		Total Cost	Use/Patient	Cost/Patien	
Average cost of medicine	50	37044	51,852	15.3%	1.00	\$50	
Average cost of preventive diet	60	37044	\$1,852	15.3%	1.00	\$50	
Patients treated at medical facilities(70%)	60	25931	\$2,074	17.1%	0.70	\$56	
Average cost of doctor visits	50	25931	\$1,296	10.7%	0.70	\$35	
Av cost of ORS in children(47%)	30	17411	\$522,3	4.3%	0.47	514	
Av cost of ORS in adults(53%)	50	19633	\$981,6	8.1%	0.53	\$26	
Hours lost in care giving(children)	8	174110	\$1,392	11.5%	4.70	\$36	
Hours lost to illness(adults)	B	196330	\$1,570	13.0%	5.30	\$42	
Hospitalization of children(0.75%)	2,500	131	\$327,6	2.7%	0.00	\$5	
Hospitalization of adults(0:50%)	2,500	98	\$245,0	2.0%	0.00	\$7	
		TOTAL	\$12,11	100%		\$327	

Total: Rs.12, 115,430



Number of Patient - 57308]	Title -	COI of diarrhea in District Bahawalpur			
Component	Cost/Unit	Units	Total Cost	Percent	Average Unit	Average
		Consumed		Total Cost	Use/Patient	Cost/Patien
Average cost of medicine	50	67308	\$3,365	14.9%	1.00	\$50
Average cost of preventive dist	50	67308	\$3,365	14.9%	1.00	\$50
Patients treated at medical facilities(70%)	80	51154	\$4,092	18.2%	0.76	\$61
Average cost of doctor visits	60	51154	\$2,557	11.3%	0.76	\$38
Av cost of ORS in children(47%)	30	31636	\$949,0	4.2%	0.47	\$14
Av cost of ORS in adults(53%)	50	35673	\$1,783	7.9%	0.53	\$26
Hours lost in care giving(children)	8	316350	\$2,530	11.2%	4.70	\$38
Hours lost to illness(adults)	8	356730	\$2,853	12.7%	5.30	\$42
Hospitalization of children(0.75%)	2,500	237	\$592,5	2.6%	0.00	\$9
Hospitalization of adults(0.50%)	2,500	178	\$445.0	2.0%	0.00	\$7
		TOTAL	\$22,53	100%		\$335

Total: Rs.22,535,660



Number of Patient = 29576	Title -		COI of diarrhes in District Bhakkar			
Component	Cost/Unit	Units	Total Cost	Percent	Average Unit Use/Patient	Average Cost/Patient
	÷	Consumed		Total Cost		
Average cost of medicine	50	29576	\$1,478	15.3%	1.00	\$50
Avarage cost of preventive dist	50	29576	\$1,478	15.3%	1.00	\$50
Patients treated at medical facilities(70%)	80	20703	\$1,656	17.1%	0.70	\$56
Average cost of doctor visits	50	20703	\$1,035	10.7%	0.70	\$35
Av cost of ORS in children(47%)	30	13901	\$417,0	4.3%	0.47	\$14
Av cost of ORS in adults(53%)	60	16676	\$783,7	8.1%	0.53	\$26
Hours lost in care giving(children)	8	139010	\$1,112	11.5%	4.70	\$38
Hours lost to illness(adults)	8	156750	\$1,254	13.0%	5.30	\$42
Hospitalization of children(0.75%)	2,500	104	\$260,0	2.7%	0.00	\$9
Hospitalization of adults(0.50%)	2,500	78	\$195,0	2.0%	0.00	\$7
		TOTAL	\$9,670	100%		\$327

Total: Rs. 9,670,850



Number of Patient - 50646	Title =		COI of diarrhea in District Bahawalnagar				
Component	Cost/Unit	Units	Total Cost	Percent	Average Unit	Average	
		Consumed		Total Cost	Use/Patient	Cost/Patient	
Average cost of medicine	50	60646	\$3,032	15.3%	1.00	\$50	
Average cost of preventive diet	50	60646	\$3,032	15.3%	1.00	\$50	
Patients treated at medical facilities(70%)	80	42452	\$3,396	17.1%	0.70	\$56	
Average cost of doctor visits	50	42452	\$2,122	10.7%	0.70	\$35	
Av cost of ORS in children(47%)	30	28504	\$855,1	4.3%	0.47	\$14	
Av cost of ORS in adults(53%)	50	32142	\$1,607	B.1%	0.53	\$26	
Hours lost in care giving(children)	8	285040	\$2,280	11.5%	4.70	\$38	
Hours lost to illness(adults)	B	321420	\$2,571	13.0%	5.30	\$42	
Hospitalization of children(0.75%)	2,600	214	\$535,0	2.7%	0.00	\$9	
Hospitalization of adults(0.50%)	2,500	161	\$402,5	2.0%	0.00	\$7	
		TOTAL	\$19,83	100%		\$327	

Total: Rs. 19,834,760



Number of Patlent = 49239		Title ≕	COI of diarrhee in District Chakwal				
Component	Cost/Unit	Units	Total Cost	Percent	Average Unit	Average	
		Consumed		Total Cost	Use/Patient	Cost/Patient	
Average cost of medicine	60	49239	\$2,461	15.7%	1.00	\$60	
Average cost of preventive diet	50	49239	\$2,461	15.7%	1.00	\$50	
Patients treated at medical facilities(70%)	80	34467	\$2,757	17.6%	0.70	\$56	
Average cost of doctor visits	50	26931	\$1,296	8.3%	0.53	\$26	
Av cost of ORS in children(47%)	30	23142	\$694,2	4.4%	0.47	\$14	
Av cost of ORS in adults(53%)	60	26097	\$1,304	8.3%	0.53	\$27	
Hours lost in care giving(children)	8	231420	\$1,851	11.8%	4.70	\$38	
Hours lost to illness(adults)	8	260970	\$2,087	13.3%	5.30	\$42	
Hospitalization of children(0.76%)	2,600	174	\$435,0	2.8%	0.00	\$9	
Hospitalization of adults(0.50%)	2,500	130	\$325,0	2.1%	0.00	\$7	
		TOTAL	\$15,67	100%		\$318	

Total: Rs. 15,676,040



Number of Patient = 50600]	Title =	COI of	COI of diarrhea in District D.G.Khan				
Component	Cost/Unit	Units	Total Cost	l Percent	Average Unit	Average		
		Consumed		Total Cost	Use/Patient	Cost/Patient		
Average cost of medicine	50	50600	\$2,530	15.3%	1.00	\$50		
Average cost of preventive diet	50	50600	\$2,530	15.3%	1.00	\$50		
Patients treated at medical facilities(70%)	80	35420	\$2,833	17.1%	0.70	\$56		
Average cost of doctor visits	50	35420	\$1,771	10.7%	0.70	\$35		
Av cost of ORS in children(47%)	30	23782	\$713,4	4.3%	0.47	514		
Av cost of ORS in adults(53%)	50	26818	\$1,340	8.1%	0.63	527		
Hours lost in care giving(children)	8	237820	\$1,902	11.5%	4.70	\$38		
Hours lost to illness(adults)	8	268180	\$2,145	13.0%	5.30	\$42		
Hospitalization of children(0.75%)	2,500	178	\$445,0	2.7%	0.00	\$9		
Hospitalization of adults(0.50%)	2,500	134	\$335,0	2.0%	0.00	\$7		
		TOTAL	\$16,54	100%		\$327		

Total: Rs. 16,546,960



Number of Patient - 93412		Title =	COI of diarrhea in District Faisalabad				
Component	Cost/Unit	Units	Total Cost	Percent	Average Unit	Average Cost/Patient	
		Consumed		Total Cost	Use/Patient		
Average cost of medicine	60	93412	\$4,670	15.3%	1.00	\$50	
Average cost of preventive diet	50	93412	\$4,670	15.3%	1.00	\$50	
Patients treated at medical facilities(70%)	60	65308	\$5,231	17.1%	0.70	\$56	
Average cost of doctor visits	50	65388	\$3,269	10.7%	0.70	\$35	
Av cost of ORS in children(47%)	30	43904	\$1,317	4.3%	0.47	\$14	
Av cost of ORS in adults(53%)	60	49508	\$2,475	8.1%	0.53	\$26	
Hours lost in care giving(children)	0	439040	\$3,512	11.5%	4.70	\$38	
Hours lost to illness(adults)	8	495080	\$3,960	13.0%	5.30	\$42	
Hospitalization of children(0.75%)	2,500	329	\$822,5	2.7%	0.00	\$9	
Hospitalization of adults(0.50%)	2,500	246	\$615,0	2.0%	0.00	57	
		TOTAL	\$30,54	100%		\$327	

Total: Rs. 30,544,620



Number of Patient = 59755		Title =	COI of diarrhea in District Gujrat				
Component	Cost/Unit	Units	Total Cost	Percent	Average Unit	Average	
		Consumed		Total Cost	Use/Patient	Cost/Patien	
Average cost of medicine	50	59766	\$2,987	15.3%	1.00	\$50	
Average cost of preventive diet	50	59755	\$2,987	15.3%	1.00	\$50	
Patients treated at medical facilities(70%)	60	41829	\$3,346	17.1%	0.70	\$56	
Average cost of doctor visits	50	41829	\$2,091	10.7%	0.70	\$35	
Av cast of ORS in children(47%)	30	28085	\$842,5	4.3%	0.47	\$14	
Av cost of ORS in adults(53%)	60	31670	\$1,583	B.1%	0.53	\$26	
Hours lost in care giving(children)	8	280850	\$2,245	11.5%	4.70	\$38	
Hours lost to illness(adults)	8	316700	\$2,533	13.0%	5.30	\$42	
Hospitalization of children(0.76%)	2.500	211	\$527,5	2.7%	0.00	\$9	
Hospitalization of adults(0.50%)	2,600	158	\$395,0	2.0%	0.00	57	
		TOTAL	\$19,54	100%		\$327	

Total: Rs. 19,542,220



Number of Patient = 72806	Title -		COI of diamhea in District Gujranwala				
Component	Cost/Unit	Units	Total Cost	Percent	Average Unit	Average	
		Consumed		Total Cost	Use/Patient	Cost/Patien	
Average cost of medicine	50	72806	\$3,640	15.3%	1.00	\$50	
Average cost of preventive dist	60	72806	\$3,640	15.3%	1.00	\$50	
Patients treated at medical facilities(70%)	80	50964	\$4,077	17.1%	0.70	\$56	
Average cost of doctor visits	50	60964	\$2,548	10.7%	0.70	\$35	
Av cost of ORS in children(47%)	30	34219	\$1,026	4.3%	0.47	\$14	
Av cost of ORS in adults(53%)	50	38587	\$1,929	B.1%	0.53	\$26	
Hours lost in care giving(children)	8	342190	\$2,737	11.5%	4.70	\$38	
Hours lost to illness(adults)	8	386870	\$3,086	13.0%	5.30	\$42	
Hospitalization of children(0.75%)	2,500	257	\$642,5	2.7%	0.00	\$9	
Hospitalization of adults(0,50%)	2,600	193	\$482,5	2.0%	0.00	\$7	
		TOTAL	\$23,81	100%		\$327	

Total: Rs. 23,811,320



Number of Patient = 29581]	Title -	COI of diamhea in District Hafizabad 🐘 🔤				
Component	Cost/Unit	Units	Total Cost	Percent	Average Unit	Average	
		Consumed		Total Cost	Use/Patient	Cost/Patient	
Average cost of medicine	50	29581	\$1,479	15.3%	1.00	\$50	
Average cost of preventive diet	50	29581	\$1,479	15.3%	1.00	\$50	
Patients treated at medical facilities(70%)	80	20707	\$1,656	17.1%	0.70	\$56	
Average cost of doctor visits	50	20707	\$1,035	10.7%	0.70	\$35	
Av cost of ORS in children(47%)	30	13903	\$417,0	4.3%	0.47	\$14	
Av cost of ORS in adults(53%)	50	15678	\$783,9	8.1%	0.53	\$27	
Hours lost (n care giving(children)	8	139030	\$1,112	11.5%	4.70	\$38	
Hours lost to Illness(adults)	8	156780	\$1,254	13.0%	5.30	\$42	
Hospitalization of children(0.75%)	2,500	104	\$260,0	2.7%	0.00	\$9	
Hospitalization of adults(0.50%)	2,500	78	\$195,0	2.0%	0.00	\$7	
		TOTAL	\$9,672	100%		\$327	

Total: Rs. 9,672,480



Number of Patient - 38422]	Title –	COI of diamea in District Jhelum				
Component	Cost/Unit	Units	Total Cost	Percent	Average Unit	Average	
		Consumed		Total Cost	Use/Patient	Cost/Patient	
Average cost of medicine	60	38422	\$1,921	15.3%	1.00	\$50	
Average cost of preventive diet	50	38422	\$1,921	15.3%	1.00	\$50	
Patients treated at medical facilities(70%)	80	26895	\$2,151	17.1%	0.70	\$56	
Average cost of doctor visits	50	26895	\$1,344	10.7%	0.70	\$36	
Av cost of ORS in children(47%)	30	18058	\$541,7	4.3%	0.47	\$14	
Av cost of ORS in adults(53%)	60	20364	\$1,018	B.1%	0.53	\$27	
Hours lost in care giving(children)	8	180580	\$1,444	11.5%	4.70	\$38	
Hours last to illness(adults)	8	203640	\$1,629	13.0%	6.30	\$42	
Hospitalization of children(0.75%)	2,500	135	\$337,5	2.7%	0.00	\$9	
Hospitalization of adults(0.50%)	2,500	102	\$255,0	2.0%	0.00	57	
		TOTAL	\$12 56	100%		\$327	

Total: Rs. 12,564,750



Number of Patient =	Title =		COI of diamhea in District Jhang				
Component	Cost/Unit	Units	Total Cost	Percent Total Cost	Average Unit Use/Patient	Average Cost/Patient	
		Consumed					
Average cost of medicine	50	117497	\$5,874	15.3%	1.00	\$50	
Average cost of preventive diet	60	117497	\$5,874	15.3%	1.00	\$50	
Patients treated at medical facilities(70%)	80	82248	\$6,579	17.1%	0.70	\$56	
Average cost of doctor visits	50	82248	\$4,112	10.7%	0.70	\$35	
Av cost of ORS in children(47%)	30	65224	\$1,656	4.3%	0.47	514	
Av cost of ORS in adults(53%)	50	62273	\$3,113	B.1%	0.53	\$26	
Hours lost in care giving(children)	8	552240	\$4,417	11.5%	4.70	\$38	
Hours lost to illness(adults)	8	622730	\$4,981	13.0%	5.30	\$42	
Hospitalization of children(0.75%)	2,500	414	\$1,035	2.7%	0.00	\$9	
Hospitalization of adults(0.50%)	2,500	311	\$777,5	2.0%	0.00	\$7	
		TOTAL	\$38,42	100%		\$327	

Total: Rs.38,424,570



Number of Patient – 47424]	Title –	COI of diarrhea in District Kesur				
Component	Cost/Unit	Units	Total Cost	Percent	Average Unit	Average	
		Consumed		Total Cost	Use/Patient	Cost/Patient	
Average cost of medicine	50	47424	\$2,371	15.3%	1.00	\$50	
Average cost of preventive diet	60	47424	\$2,371	15.3%	1.00	\$50	
Patients treated at medical facilities(70%)	90	33197	\$2,655	17.1%	0.70	\$56	
Average cost of doctor visits	50	33197	\$1,659	10.7%	0.70	\$35	
Av cost of ORS in children(47%)]. ЭО	22289	\$668,6	4.3%	0.47	\$14	
Av cost of ORS in adults(53%)	60	26136	\$1,256	B.1%	0.53	\$27	
Hours lost in care giving(children)	8	222890	\$1,783	11.5%	4.70	\$38	
Hours lost to illness(adults)	8	251350	\$2,010	13.0%	5.30	\$42	
Hospitalization of children(0.75%)	2,500	167	\$417,5	2.7%	0.00	\$9	
Hospitalization of adults(0.50%)	2,600	126	\$315,0	2.0%	0.00	\$7	
		TOTAL	\$15,50	100%		\$327	

Total: Rs.15,509,850



Number of Patient = 16290	Title =		COI of diamhea in District Khanewal				
Component	Cost/Unit	Units	Total Cost	Percent	Average Unit	Average	
-		Consumed		Total Cost	Use/Patient	Cost/Patient	
Average cost of medicine	50	16290	\$814,5	15.3%	1.00	\$50	
Average cost of preventive diet	50	16290	\$814,5	15.3%	1.00	\$50	
Patients treated at medical facilities(70%)	80	11403	\$912,2	17.1%	0.70	\$56	
Average cost of doctor visits	50	11403	\$570,1	10.7%	0.70	\$35	
Av cost of ORS in children(47%)	30	7656	\$229,6	4.3%	0.47	\$14	
Av cost of ORS in adults(53%)	50	8634	\$431,7	B.1%	0.53	\$27	
Hours lost in care giving(children)	8	76560	\$612,4	11.5%	4.70	\$38	
Hours lost to illness(adults)	8	86340	\$690,7	13.0%	5.30	\$42	
Hospitalization of children(0.75%)	2,600	57	\$142,5	2.7%	0.00	\$9	
Hospitalization of adults(0.50%)	2,500	43	\$107,5	2.0%	0.00	\$7	
		TOTAL	\$5,325	100%		\$327	

Total: Rs. 5,325,970



Number of Patient - 20598]	Title =	COI of diarrhea in District Khushab				
Component	Cost/Unit	Units	Total Cost	Percent	Average Unit	Average	
		Consumed		Total Cost	Use/Patient	Cost/Patient	
Average cost of medicine	50	20598	\$1,029	15.3%	1.00	\$50	
Average cost of preventive diet	60	20598	\$1,029	15.3%	1.00	\$50	
Patients treated at medical facilities(70%)	80	14419	\$1,153	17.1%	0.70	\$56	
Average cost of doctor visits	50	14419	\$720,9	10.7%	0.70	\$35	
Av cost of ORS in children(47%)	30	9681	\$290,4	4.3%	0.47	\$14	
Av cost of ORS in adults(53%)	50	10917	\$545,8	8.1%	0.53	\$27	
Hours lost in care giving(children)	0	96810	\$774,4	11.5%	4.70	\$38	
Hours lost to illness(adults)	B	109170	\$873,3	13.0%	5.30	\$42	
Hospitalization of children(0.75%)	2,500	73	\$182,5	2.7%	0.00	\$9	
Hospitalization of adults(0.50%)	2,500	65	\$137,5	2.0%	0.00	\$7	
		TOTAL	\$6,738	100%		\$327	

Total: Rs. 6,738,390



and the second								
Number of Patient - 38587]	Title -	COL of	COL of diarrhea in District Labore				
Component	Cost/Unit	Units	Total Cost	Percent	Average Unit	Average		
		Consumed		Total Cost	Use/Patient	Cost/Patient		
Average cost of medicine	50	38587	\$1,929	15.3%	1.00	\$50		
Average cost of preventive diet	50	38687	\$1,929	15.3%	1.00	\$50		
Patients treated at medical facilities(70%)	60	27011	\$2,160	17.1%	0.70	\$56		
Average cost of doctor visits	50	27011	\$1,350	10.7%	0.70	\$35		
Av cost of ORS in children(47%)	30	18136	\$544,0	4.3%	0.47	\$14		
Av cost of ORS in adults(53%)	50	20451	\$1,022	8.1%	0.53	\$26		
Hours lost in care giving(children)	8	181360	\$1,450	11.5%	4.70	\$38		
Hours lost to illness(adults)	8	204510	\$1,636	13.0%	5.30	\$42		
Hospitalization of children(0.75%)	2,500	136	\$340,0	2.7%	0.00	\$9		
Hospitalization of adults(0,50%)	2,500	102	\$255,0	2.0%	0.00	\$7		
	-	TOTAL	\$12,61	100%		\$327		

Total: Rs. 12,618,720



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Number of Patient9997		Title -	CO) of diarrhes in District Lodhran				
Component	Cost/Unit	Units	Total Cost	Percent	Average Unit	Average	
		Consumed		Total Cost	Use/Patient	Cost/Patient	
Average cost of medicine	60	9997	\$499,8	15.3%	1.00	\$50	
Average cost of preventive diet	.50	9997	\$499,8	15.3%	1.00	\$60	
Patients treated at medical facilities(70%)	80	6998	\$559,8	17.1%	0.70	\$56	
Average cost of doctor visits	50	6998	\$349,9	10.7%	D.70	\$35	
Av cost of ORS in children(47%)	90	4699	\$140,9	4.3%	0.47	\$14	
Av cost of ORS in adults(63%)	50	6298	\$264,9	8.1%	0.53	\$26	
Hours lost in care giving(children)	8	46990	\$375,9	11.5%	4.70	\$38	
Hours lost to illness(adults)	8	62980	\$423,8	13.0%	5.30	\$42	
Hospitalization of children(0.75%)	2,600	35	\$87,50	2.7%	0.00	\$9	
Hospitalization of adults(0.50%)	2,600	26	\$65,00	2.0%	0.00	\$7	
		TOTAL	\$3,267	100%		\$327	

Total: Rs. 3,267,570



Number of Patient = 10542	Title =		COI of diarrhea in District Layyah				
Component	Cost/Unit	Units	Total Cost	Percent	Average Unit	Average	
		Consumed		Total Cost	Use/Patient	Cost/Patient	
Average cost of medicine	50	10542	\$527,1	15.3%	1.00	\$50	
Average cost of preventive diet	50	10542	\$527,1	15.3%	1.00	\$50	
Patients treated at medical facilities(70%)	80	7379	\$590,3	17.1%	0.70	\$56	
Average cost of doctor visits	50	7379	\$368,9	10.7%	0.70	\$35	
Av cost of ORS in children(47%)	30	4955	\$148,6	4.3%	0.47	\$14	
Av cost of ORS in adults(53%)	50	6587	\$279,3	8.1%	0.53	\$26	
Hours lost in care giving(children)	8	49550	\$396,4	11.5%	4.70	\$38	
Hours lost to illness(adults)	0	55870	\$446,9	13.0%	5.30	\$42	
Hospitalization of children(0.75%)	2,500	37	\$92,50	2.7%	0.00	\$9	
Hospitalization of adults(0.50%)	2,500	20	\$70,00	2.0%	0.00	\$7	
1		TOTAL	\$3,447	100%		\$327	



Number of Patient = 32005]	Title -	COI of diarrhea in District Multan				
Component	Cost/Unit	Units	Total Cost	Percent	Average Unit	Average	
		Consumed		Total Cost	Use/Patient	Cost/Patient	
Average cost of medicine	50	32885	\$1,644	15.3%	1.00	\$50	
Average cost of preventive diet	60	32886	\$1,644	15.3%	1.00	\$50	
Patients treated at medical facilities(70%)	60	23020	\$1,841	17.1%	0.70	\$56	
Average cost of doctor visits	50	23020	\$1,151	10.7%	0.70	\$36	
Av cast of ORS in children(47%)	30	15456	\$463,6	4.3%	0.47	514	
Av cost of ORS in adults(53%)	50	17429	\$871,4	B.1%	0.63	\$26	
Hours lost in care giving(children)	8	154560	\$1,236	11.5%	4.70	\$38	
Hours lost to illness(adults)	Ð	174290	\$1,394	13.0%	6.30	\$42	
Hospitalization of children(0.75%)	2,600	116	\$290,0	2.7%	0.00	\$9	
Hospitalization of adults(0.50%)	2,500	87	\$217,5	2.0%	0.00	\$7	
		TOTAL	\$10 75	100%	-	\$327	

Total: Rs. 10,754,530



Number of Patient 9997	Title -		COI of diarrhea in District Mianwali				
Component	Cost/Unit	Unita	Total	Porcent	Average Unit	Average	
		Consumed	r	Total Cost	Use/Patient	Cost/Patient	
Average cost of medicine	60	9997	\$499,8	15.3%	1.00	\$50	
Average cost of preventive diet	60	9997	\$499,8	15.3%	1.00	\$50	
Patients treated at medical facilities(70%)	80	6998	\$559,8	17.1%	0.70	\$56	
Average cost of doctor visits	60	6990	\$349,9	10.7%	0.70	\$35	
Av cost of ORS in children(47%)	30	4699	\$140,9	4.3%	0.47	\$14	
Av cost of ORS in adults(53%)	50	5298	\$264,9	8.1%	0.53	\$26	
Hours lost in care giving(children)	8	46990	\$375,9	11.5%	4.70	\$38	
Hours lost to illness(adults)	1. B	52980	\$423,8	13.0%	5.30	\$42	
Hospitalization of children(0.75%)	2,500	35	\$87,50	2.7%	0.00	\$9	
Hospitalization of adults(0.50%)	2,600	26	\$65,00	2.0%	0.00	\$7	
		TOTAL	\$3,267	100%		\$327	

Total: Rs.3,267,570



Number of Patient = 56345]	Title =	COI of diarrhea in District Muzafargarh				
Component	Cost/Unit	Units	Total Cost	Percent	Average Unit	Average	
-		Consumed		Total Cost	Use/Patient	Cost/Patient	
Average cost of medicine	50	56345	\$2,817	15.3%	1.00	\$50	
Average cost of preventive diet	50	56345	\$2,817	15.3%	1.00	\$50	
Patients treated at medical facilities(70%)	00	39442	\$3,155	17.1%	0.70	\$56	
Average cost of doctor visits	50	39442	\$1,972	10.7%	0.70	\$35	
Av cost of ORS In children(47%)	30	26482	\$794,4	4.3%	0.47	\$14	
Av cost of ORS in adults(53%)	50	29862	\$1,493	B.1%	0.53	\$26	
Hours lost in care giving(children)	8	264820	\$2,118	11.5%	4.70	\$38	
Hours lost to illness(adults)	8	298620	\$2,388	13.0%	5.30	\$42	
Hospitalization of children(0.75%)	2,500	199	\$497,5	2.7%	0.00	\$9	
Hospitalization of adults(0.50%)	2,600	149	\$372,5	2.0%	0.00	\$7	
		TOTAL '	\$18,42	100%		\$327	

Total:Rs.18,427,040



Component	Cost/Unit	Units	Total Cost	Percent	Average Unit	Average
		Consumed		Total Cost	Use/Patient	Cost/Patien
Average cost of medicine	50	9997	\$499,8	15.3%	1.00	\$50
Average cost of preventive dist	50	9997	\$499,8	15.3%	1.00	\$50
Patients treated at medical facilities(70%)	60	6998	\$559,8	17.1%	0.70	\$56
Average cost of doctor visits	50	6998	\$349,9	10.7%	0.70	\$35
Av cost of ORS in children(47%)	90	4699	\$140,9	4.3%	0.47	514
Av cost of ORS in adults(53%)	50	6298	\$264,9	8.1%	0,53	\$26
Hours lost in care giving(children)	8	46990	\$375,9	11.5%	4,70	\$38
Hours lost to illness(adults)	8	62980	\$423,8	13.0%	5,30	\$42
Hospitalization of children(0.75%)	2,500	36	\$87,50	2.7%	0.00	. 59
Hospitalization of adults(0.50%)	2,500	26	\$65,00	2.0%	0.00	\$57

Total:Rs.3,267,570



Number of Patient = 30375		Title =	COI of diarchea in District Narowal				
Component	Cost/Unit	Units	Total Cost	Percent	Average Unit	Average	
		Consumed		Total Cost	Use/Patient	Cost/Patient	
Average cost of medicine	50	30375	\$1,518	15.3%	1.00	\$50	
Average cost of preventive diet	50	30375	\$1,518	15.3%	1.00	\$50	
Patients treated at medical facilities(70%)	00	21262	\$1,700	17.1%	0.70	\$56	
Average cost of doctor visits	60	21262	\$1,063	10.7%	0.70	\$35	
Av cost of ORS in children(47%)	30	1.4276	\$428,2	4.3%	0.47	\$14	
Av cost of ORS in adults(53%)	60	16099	\$804,9	B.1%	0.53	\$27	
Hours lost in care giving(children)	8	142760	\$1,142	11.5%	4.70	\$38	
Hours lost to illness(adults)	8	160990	\$1,287	13.0%	6.30	\$42	
Hospitalization of children(0.75%)	2,500	107	\$267,5	2.7%	0.00	59	
Hospitalization of adults(0.50%)	2,500	80	\$200,0	2.0%	0.00	- \$7	
		TOTAL	\$9,932	100%		\$327	

Total:Rs.9,932,290



Number of Patient = 25273	1	Títle =	COI of diamhea in District Okara			
Component	Cost/Unit	Units	Total Cost	Percent	Average Unit	Average
		Consumed		Total Cost	Use/Patient	Cost/Patien
Average cost of medicine	50	25273	\$1,263	15.3%	1.00	\$50
Average cost of preventive dist	50	25273	\$1,263	15.3%	1.00	\$50
Patients treated at medical facilities(70%)	60	17691	\$1,415	17.1%	0.70	\$56
Average cost of doctor visits	50	17691	\$884,5	10.7%	0.70	\$35
Av cost of ORS in children(47%)	30	11878	\$356,3	4.3%	0.47	\$14
Av cost of ORS in adults(53%)	50	13395	\$669,7	8.1%	0.53	\$27
Hours lost in care giving(children)	8	118780	\$950,2	11.5%	4.70	\$38
Hours lost to Illness(adults)	Ð	133960	\$1,071	13.0%	5.30	\$42
Hospitalization of children(0.75%)	2,600	69	\$222,6	2.7%	0.00	59
Hospitalization of adults(0.50%)	2,500	67	\$167,5	2.0%	0.00	\$7
		TOTAL	\$8,265	100%		\$327

Total:Rs.8,265,060



50 50 50	Units Consumed 28708 28708 20096	Total Cost \$1,435 \$1,435 \$1,607	Percent Total Cost 15.3% 15.3%	Average Unit Use/Patient 1.00 1.00	Average Cost/Patient \$50 \$50
50 50	Consumed 28708 28708 20096	\$1,435 \$1,435 \$1,607	Total Cost 15.3% 15.3% 17.1%	Use/Patient 1.00 1.00	Cost/Patient \$50 \$50
50 50 80	28708 28708 20096	\$1,435 \$1,435 \$1,607	15.3% 15.3% 17.1%	1.00	\$50
50 80	28708	\$1,435 \$1,607	15.3% 17.1%	1.00	\$50
80 50	20096	\$1,607	17.1%	0.70	T.C.C.
50	1				\$55
distant.	20096	\$1,004	10.7%	0.70	\$35
30	13493	\$404,7	4.3%	0.47	514
50	15215	\$760,7	8.1%	0,53	\$26
B	134930	\$1,079	11.5%	4.70	\$38
8	152150	\$1,217	13.0%	5.30	\$42
00	101	\$252,5	2.7%	0.00	\$9
00	76	\$190,0	2.0%	0.00	\$7
5 5	8 8 500 500	8 134930 8 152150 500 101 500 76	8 134930 \$1,079 8 152150 \$1,217 500 101 \$252,5 600 76 \$190,0	6 134930 \$1,079 11.5% 6 152150 \$1,217 13.0% 500 101 \$252,5 2.7% 500 76 \$190,0 2.0%	6 134930 \$1,079 11.5% 4.70 8 152150 \$1,217 13.0% 5.30 500 101 \$252,5 2.7% 0.00 500 76 \$190,0 2.0% 0.00

Total:Rs.9,387,960



Number of Patient = 204202]	Title =	COI of diarrhea in District Rawalpindi			
Component	Cost/Unit	Units	Total Cost	Percent	Average Unit	Average
		Consumed		Total Cost	Use/Patient	Cost/Patient
Average cost of medicine	50	204202	\$10,21	15.3%	1.00	\$50
Average cost of preventive diet	60	204202	\$10,21	15.3%	1.00	\$50
Patients treated at medical facilities(70%)	80	142941	\$11,43	17.1%	0.70	\$56
Average cost of doctor visits	50	142941	\$7,147	10.7%	0.70	\$35
Av cost of ORS in children(47%)	90	95976	\$2,879	4.3%	0.47	514
Av cost of ORS in adults(53%)	50	108227	\$5,411	8.1%	0.63	\$26
Hours lost in care giving(children)	B	959750	\$7,678	11.5%	4.70	\$38
Hours lost to illness(adults)	9	1092270	\$8,658	13.0%	5,30	\$42
Hospitalization of children(0.75%)	2,600	720	\$1,800	2.7%	0.00	\$9
Hospitalization of adults(0.50%)	2,500	541	\$1,352	2.0%	0.00	\$7
a superior de la contraction d		TOTAL	\$66,78	100%		\$327

Total:Rs.66,781,790



Number of Patient = 151458		Title =	COI of diarrhea in District Rahim Yar Khan				
Component	Cost/Unit	Units	Total Cost	Percent	Average Unit	Average	
		Consumed		Total Cost	Use/Patient	Cost/Patient	
Average cost of medicine	50	151458	\$7,572	15.3%	1.00	\$50	
Average cost of preventive diet	50	151458	\$7,572	15.3%	1.00	\$50	
Patients treated at medical facilities(70%)	80	106021	\$8,481	17.1%	0.70	\$56	
Average cost of doctor visits	50	106021	\$5,301	10.7%	0.70	\$35	
Av cost of ORS in children(47%)	30	71185	\$2,135	4.3%	0.47	\$14	
Av cost of ORS in adults(53%)	50	80273	\$4,013	8.1%	0.53	\$27	
Hours lost in care giving(children)	B	711850	\$5,694	11.5%	4.70	\$38	
Hours lost to illness(adults)	8	802730	\$6,421	13.0%	5.30	\$42	
Hospitalization of children(0.75%)	2,500	534	\$1,335	2.7%	0.00	59	
Hospitalization of adults(0.50%)	2,500	401	\$1,002	2.0%	0.00	\$7	
		TOTAL	\$49.53	100%		5927	

Total:Rs.49,531,870



Number of Patient	2	Title -	COI of diatrhea in District Rajanpur				
Component	Cost/Unit	Units	Total Cost	Percent	Average Unit	Average	
		Consumed		Total Cost	Use/Patient	Cost/Patient	
Average cost of medicine	50	9997	\$499,8	15.3%	1.00	\$50	
Average cost of preventive diet	50	9997	\$499,8	15.3%	1.00	\$50	
Patients treated at medical facilities(70%)	80	6998	\$559,8	17.1%	0.70	\$56	
Average cost of doctor visits	50	6998	\$349,9	10.7%	0,70	\$35	
Av cost of ORS in children(47%)	30	4699	\$140,9	4.3%	0.47	\$14	
Av cost of ORS in adults(53%)	50	5298	\$264,9	8.1%	0,53	\$26	
Hours lost in care giving(children)	8	46990	\$375,9	11.5%	4.70	\$38	
Hours lost to Illness(adults)	8	62980	\$423,8	13.0%	5,30	\$42	
Hospitalization of children(0.75%)	2,500	36	\$87,60	2.7%	0.00	\$9	
Hospitalization of adults(0.50%)	2,600	26	\$65,00	2.0%	0.00	57	
		TOTAL	\$3,267	100%		\$327	

Total:Rs.3,267,570



Number of Patient - 57713]	Title -	COI of diarrhea in District Sialkot				
Component	Cost/Unit	Units	Total Cost	Percent	Average Unit	Average	
		Consumed		Total Cost	Use/Patient	Cost/Patient	
Average cost of medicine	50	57713	\$2,885	15.3%	1.00	\$50	
Average cost of preventive diet	50	57713	\$2,886	15.3%	1.00	\$50	
Patients treated at medical facilities(70%)	80	40399	\$3,231	17.1%	0.70	\$56	
Average cost of doctor visits	50	40399	\$2,019	10.7%	0.70	\$35	
Av cost of ORS in children(47%)	30	27125	\$813,7	4.3%	0.47	\$14	
Av cost of ORS in adults(53%)	50	30588	\$1,529	8.1%	0.63	\$27	
Hours lost in care giving(children)	B	271250	\$2,170	11.5%	4.70	\$38	
Hours lost to illness(adults)	8	305880	\$2,447	13.0%	5.30	\$42	
Hospitalization of children(0.75%)	2,500	203	\$507,5	2.7%	0.00	\$9	
Hospitalization of adults(0.50%)	2,500	153	\$382,5	2.0%	0.00	\$7	
		TOTAL	\$18,87:	100%		\$327	

Total:Rs.18,873,360



Number of Patient - 49469]	Title -	COL of diarchea in District Sahiwal				
Component	Cost/Unit	Units	Total Cost	Percent	Average Unit	Average	
		Consumed		Total Cost	Use/Patlent	Cost/Patien	
Average cost of medicine	50	49469	\$2,473	15.3%	1.00	\$50	
Average cost of preventive diet	50	49469	\$2,473	15.3%	1.00	\$50	
Patients treated at medical facilities(70%)	80	34628	\$2,770	17.1%	0.70	\$56	
Average cost of doctor visits	50	34628	\$1,731	10.7%	0.70	\$35	
Av cost of ORS in children(47%)	30	23250	\$697,5	4.3%	0.47	514	
Av cost of ORS in adults(53%)	50	26219	\$1,310	8.1%	0.53	\$27	
Hours lost in cars giving(children)	8	232500	\$1,860	11.5%	4.70	\$38	
Hours lost to illness(adults)	8	262190	\$2,097	13.0%	5.30	\$42	
Hospitalization of children(0.75%)	2,500	174	\$435,0	2.7%	0.00	\$9	
Hospitalization of adults(0.50%)	2,500	131	\$327,5	2.0%	0.00	\$7	
	18	TOTAL	\$16,17	100%		\$327	

Total:Rs.16,177,010



Number of Patient = 24792]	Title 🖮	COI of diarrhea in District Sheikhupura				
Component	Cost/Unit	Units	Total Cost	Percent Total Cost	Average Unit Use/Patient	Average Cost/Patient	
		Consumed					
Average cost of medicine	60	24792	\$1,239	17.3%	1.00	\$60	
Average cost of preventive diet	50	24792	\$1,239	17.3%	1.00	\$50	
Patients treated at medical facilities(70%)	80	17364	\$1,388	19.4%	0.70	\$56	
Average cost of doctor visits	60	17354	5867,7	12.1%	0.70	\$35	
Av cost of ORS in children(47%)	30	11652	\$349,5	4.9%	D.47	514	
Av cost of ORS in adults(53%)	60	13140	\$657,0	9.2%	0.53	\$27	
Hours lost in care giving(children)	8	116520	\$932,1	13.0%	4.70	\$38	
Hours lost to illness(adulta)	8	13140	\$105,1	1.5%	0.53	\$4	
Hospitalization of children(0,75%)	2,500	87	\$217,5	3.0%	0.00	\$9	
Hospitalization of adults(0.50%)	2,500	66	\$165,0	2.3%	0.00	\$7	
		TOTAL	\$7,161	100%		\$289	

Total:Rs.7,161,560



Number of Patient - 51092		Title -	COI of diardhea in District Sargodha				
Component	Cost/Unit	Units	Total Cost	Percent Total Cost	Average Unit Use/Patient	Average Cost/Patient	
	I.	Consumed					
Average cost of medicine	50	51092	\$2,554	15.3%	1.00	\$50	
Average cost of preventive diet	50	51092	\$2,554	15.3%	1.00	\$50	
Patients treated at medical facilities(70%)	80	35764	\$2,861	17.1%	D.70	\$56	
Average cost of doctor visits	60	36764	\$1,788	10.7%	0.70	\$35	
Av cost of ORS in children(47%)	30	24013	\$720,3	4.3%	0.47	514	
Av cost of ORS in adults(53%)	50	27079	\$1,353	8.1%	0.63	\$27	
Hours lost in care giving(children)	θ	240130	\$1,921	11.5%	·4.7D	\$38	
Hours lost to illness(adults)	- B	270790	\$2,166	13.0%	5.30	\$42	
Hospitalization of children(0.75%)	2,500	180	\$450,0	2.7%	0.00	\$9	
Hospitalization of adults(0.50%)	2,500	135	\$337,5	2.0%	0.00	\$7	
		TOTAL	\$16.70	100%		\$327	

Total:Rs.16,707,720



Component	Cost/Unit	Units	Total Cost	Percent	Average Unit	Average
		Consumed		Total Cost	Use/Patient	Cost/Patient
Average cost of medicine	50	27156	\$1,357	15.3%	1.00	\$50
Average cost of preventive diet	50	27156	\$1,357	15.3%	1.00	\$50
Patients treated at medical facilities(70%)	80	19009	\$1,520	17.1%	0.70	\$56
Average cost of doctor visits	50	19009	\$950,4	10.7%	0.70	\$35
Av cost of ORS in children(47%)	30	12763	\$382,8	4.3%	0.47	\$14
Av cost of ORS in adults(53%)	50	14393	\$719,6	8.1%	0.53	\$27
Hours lost in care giving(children)	8	127630	\$1,021	11.5%	4.70	\$38
Hours lost to illness(adults)	8	143930	\$1,151	13.0%	5.30	\$42
Hospitalization of children(0.75%)	2,500	96	\$240,0	2.7%	0.00	\$9
Hospitalization of adults(0.50%)	2,500	72	\$180,0	2.0%	0.00	\$7
	2 / 1	TOTAL	\$8,881	100%		\$32

Total:Rs.8,881,790



Component	Cost/Unit	Units	Total Cost	Percent	Average Unit	Average
		Consumed		Total Cost	Use/Patient	Cost/Patient
Average cost of medicine	50	25480	\$1,274	15.3%	1.00	\$50
Average cost of preventive diet	50	25480	\$1,274	15.3%	1.00	\$50
Patients treated at medical facilities(70%)	80	17836	\$1,426	17.1%	0.70	\$56
Average cost of doctor visits	50	17836	\$891,8	10.7%	0.70	\$35
Av cost of ORS in children(47%)	30	11976	\$359,2	4.3%	D.47	\$14
Av cost of ORS in adults(53%)	50	13504	\$675,2	8.1%	0.63	\$26
Hours lost in care giving(children)	.8	119760	\$958,0	11:5%	4.70	\$38
Hours lost to illness(adults)	8	135040	\$1,080	13.0%	5.30	\$42
Hospitalization of children(0.75%)	2,500	90	\$225,0	2.7%	. 0.00	\$9
Hospitalization of adults(0.50%)	2,500	68	\$170,0	2.0%	Ó.DO	\$7

Total:Rs.8,334,560



Number of Patient = 1697850]	Title =	COI of diarrhea in the Punjab Province				
Component	Cost/Unit	Units	Total Cost	Percent	Average Unit	Average	
		Consumed		Total Cost	Use/Patient	Cost/Patien	
Average cost of medicine	50	1697850	\$84,89	15.3%	1.00	\$50	
Average cost of preventive diet	50	1697850	\$84,89	15.3%	1.00	\$50	
Patients treated at medical facilities(70%)	80	1108495	\$95,07	17.1%	0.70	\$56	
Average cost of doctor visits	50	1188495	\$59,42	10.7%	0.70	\$35	
Av cost of ORS in children(47%)	30	797990	\$23,93	4.3%	· D.47	\$14	
Av cost of ORS in adults(53%)	50] 899860	\$44,99	8.1%	0.63	\$26	
Hours lost in care giving(children)	8	7979900	\$63,83	11.5%	4.70	\$38	
Hours lost to illness(adults)	8	6998600	\$71,98	13.0%	5.30	\$42	
Hospitalization of children(0.75%)	2,500	5985	\$14,96	2.7%	0.00	\$9	
Hospitalization of adults(0.60%)	2,500	4499	\$11,24	2.0%	0.00	\$7	
		TOTAL	\$555 2	100%		\$327	

Total:Rs.555,260,050



Number of Patient 6671	l	Title =	COI of dysentery in District Attock				
Component	Cost/Unit	Units	Total Cost	Percent Total Cost	Average Unit Use/Patient	Average Cost/Patient	
		Consumed					
Average cost of medicine	50	6671	\$333,6	15.3%	1.00	\$50	
Average cost of preventive diet	50	6671	\$333,6	15.3%	1.00	\$50	
Patients treated at medical facilities(70%)	80	4670	\$373,6	17.1%	0.70	\$56	
Average cost of doctor visits	50	4670	\$233,5	10.7%	0.70	\$35	
Av cost of ORS in children(47%)	30	3135	\$94,05	4.3%	0.47	\$14	
Av cost of ORS in adults(53%)	50	3636	\$176,8	8.1%	0.63	\$27	
Hours lost in care giving(children)	B	31350	\$250,8	11.5%	. 4.70	\$36	
Hours lost to illness(adults)	B	35360	\$282,8	13.0%	5.30	542	
Hospitalization of children(0,75%)	2,600	• 24	\$60,00	2.7%	0.00	\$9	
Hospitalization of adults(0.50%)	2,500	18	\$45,00	2.1%	··· 0.00	\$7	
		TOTAL	\$2,183	100%		\$327	

Total: Rs. 2,183,730



Number of Patient = 62511		Title =	COI of dysentery in District Bahawalpur				
Component	Cost/Unit	Units	Total Cost	Percent	Average Unit Use/Patient	Average Cost/Patient	
		Consumed		Total Cost			
Average cost of medicine	50	52511	\$2,625	15.3%	1.00	\$50	
Average cost of preventive diet	50	62511	\$2,625	15.3%	1.00	\$50	
Patients treated at medical facilities(70%)	80	36758	\$2,940	17.1%	0.70	\$56	
Average cost of doctor visits	50	36758	\$1,837	10.7%	0.70	\$35	
Av cost of ORS in children(47%)	30	24680	\$740,4	4.3%	0.47	514	
Av cost of ORS in adults(53%)	50	27831	\$1,391	8.1%	0.53	\$27	
Hours lost in care giving(children)		246800	\$1,974	11.5%	4.70	\$38	
Hours lost to illness(adults)	8	278310	\$2,226	13.0%	5,30	\$42	
Hospitalization of children(0.75%)	2,500	185	\$462,5	2.7%	0.00	\$9	
Hospitalization of adults(0.50%)	2,500	139	\$347,5	2.0%	0.00	\$7	
		TOTAL	\$17,17:	100%		\$327	

Total:Rs. 17,172,470

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Number of Patient – 89625]	Title =	COI of dysentary in District Bhakkar				
Component	Cost/Unit	Units	Total Cost	Percent	Average Unit	Average	
		Consumed		Total Cost	Use/Patient	Cost/Patient	
Average cost of medicine	50	88625	\$4,431	15.3%	1.00	\$50	
Average cost of preventive dist	50	88625	\$4,431	15.3%	1.00	\$50	
Patients treated at medical facilities(70%)	80	62038	\$4,963	17.1%	0.70	\$56	
Average cost of doctor visits	50	62038	\$3,101	10.7%	0.70	\$35	
Av cost of ORS in children(47%)	90	41654	\$1,249	4.3%	0.47	\$14	
Av cost of ORS in adults(53%)	50	46971	\$2,348	B.1%	0.53	\$26	
Hours lost in care giving(children)	0	416540	\$3,332	11.5%	4.70	\$38	
Hours lost to illness(adults)	8	469710	\$3,757	13.0%	5.30	\$42	
Hospitalization of children(0.75%)	2,500	312	\$780,0	2.7%	· 0.00	\$9	
Hospitalization of adults(0.50%)	2,500	235	\$587,5	2.0%	0.00	\$7	
		TOTAL	\$28 98	100%		5927	

Total:Rs. 28,983,110



Number of Patient =28670] Title ⊨		COI of dysentery in District Bahawalpur				
Component .	Cost/Unit	Units	Total Cost	Percent Total Cost	Average Unit Use/Patient	Average Cost/Patient	
		Consumed					
Average cost of medicine	60	28670	\$1,433	15.3%	1.00	\$50	
Average cost of preventive diet	50	28670	\$1,433	15.3%	1.00	\$50	
Patients treated at medical facilities(70%)	80	20069	\$1,605	17.1%	0.70	\$56	
Average cost of doctor visits		20069	\$1,003	10.7%	0.70	\$35	
Av cost of ORS in children(47%)	30	13475	\$404,2	4.3%	0.47	514	
Av cost of ORS in adults(53%)	50	15195	\$759,7	8.1%	0.53	\$26	
Hours lost in care giving(children)	B	134750	\$1,078	11.5%	4.70	\$36	
Hours lost to illness(adults)	8	151950	\$1,215	13.0%	5.30	\$42	
Hospitalization of children(0.75%)	2,500	101	\$252,5	2.7%	0.00	\$9	
Hospitalization of adults(0.50%)	2,500	76	\$190,0	2.0%	0.00	\$7	
		TOTAL	\$9.376	100%		\$927	

Total:9,376,070



Number of Patient 8559	Title		COI of dysentery in District Chakwal				
Component	Cost/Unit	Units	Total Cost	Percent	Average Unit	Average	
		Consumed		Total Cost	Use/Patient	Cost/Patient	
Average cost of medicine	50	8659	\$427,9	15.3%	1.00	\$50	
Average cost of preventive diet	50	8659	\$427,9	15.3%	1.00	\$50	
Patients treated at medical facilities(70%)	80	6991	\$479,2	17.1%	0.70	\$56	
Average cost of doctor visits	50	5991	\$299,5	10.7%	0.70	\$35	
Av cost of ORS in children(47%)	90	4023	\$120,6	4.3%	0.47	\$14	
Av cost of ORS in adults(53%)	60	4636	\$226,8	8.1%	0.53	\$26	
Hours lost in care giving(children)	B	40230	\$321,8	11.5%	4.70	\$36	
Hours lost to illness(adults)	8	46360	\$362,8	13.0%	5.30	\$42	
Hospitalization of children(0.75%)	2,500	30	\$75,00	2.7%	0.00	59	
Hospitalization of adults(0.50%)	2,500	23	\$57,50	· 2.1%	0.00	57	
	5	TOTAL	\$2,799	100%		\$327	

Total:Rs. 2,799,440



Number of Patient =25060	Title –		COI of dysentery in District D.G.Khan				
Component	Cost/Unit	Units	Total Cost	tal est Percent Total Cost	Average Unit Use/Patient	Average Cost/Patient	
		Consumed					
Average cost of medicine	50	25060	\$1,253	15.3%	1.00	\$50	
Average cost of preventive diet	50	25060	\$1,253	15.3%	1.00	\$50	
Patients treated at medical facilities(70%)	80	17542	\$1,403	17.1%	0.70	\$56	
Average cost of doctor visits	60	17542	\$877,1	10.7%	0.70	\$35	
Av cost of ORS in children(47%)	30	11778	\$353,3	4.3%	0.47	514	
Av cost of ORS in adults(53%)	60	13282	\$664,1	B.1%	0.53	\$27	
Hours lost in care giving(children)	8	117780	\$942,2	11.5%	4.70	\$38	
Hours lost to illness(adults)	8	132820	\$1,062	13.0%	5,30	\$42	
Hospitalization of children(0.75%)	2,500	88	\$220,0	2.7%	0,00	\$9	
Hospitalization of adults(0.50%)	2,500	66	\$165,0	2.0%	0.00	\$7	
		TOTAL	\$8,193	100%		\$327	

Total:Rs.8,193,700



Number of Patient = 42950	Title =		COI of dysentery in District Feiselabed				
Component	Cost/Unit	Units	Total Cost	Percent	Average Unit	Average	
		Consumed	1	Total Cost	Use/Patient	Cost/Patient	
Average cost of medicine	50	42958	\$2,147	15.3%	1.00	\$50	
Average cost of preventive diet	60	42958	\$2,147	15.3%	1.00	\$50	
Patients treated at medical facilities(70%)	80	30071	\$2,405	17.1%	0.70	\$56	
Average cost of doctor visits	60	30071	\$1,503	10.7%	0.70	\$35	
Av cost of ORS in children(47%)	30	20190	\$605,7	4.3%	0.47	514	
Av cost of ORS in adults(53%)	60	22768	\$1,138	B.1%	0.53	\$27	
Hours lost in bare giving(children)	0	201900	\$1,615	11.5%	4.70	\$38	
Hours lost to Illness(adults)	B	227680	\$1,821	13.0%	5.30	\$42	
Hospitalization of children(0,75%)	2.600	151	\$377,5	2.7%	0.00	\$9	
Hospitalization of adults(0.50%)	2,500	114	\$285,0	2.0%	0.00	\$7	
		TOTAL	\$14.04	100%		\$327	

Total:Rs.14,048,270



Number of Patient - 31222] Title –		COI of dysentery in District Gujrat				
Component	Cost/Unit	Units	Total Cost	Percent	Äverage Unit	Average	
		Consumed		Total Cost	Use/Patient	Cost/Patient	
Average cost of medicine	50	31222	\$1,561	15.3%	1.00	\$50	
Average cost of preventive diet	60	31222	\$1,561	15.3%	1.00	\$50	
Patients treated at medical facilitias(70%)	80	21855	\$1,748	17.1%	0.70	\$56	
Average cost of doctor visits	50	21865	\$1,092	10.7%	0.70	\$35	
Av cost of ORS in children(47%)	30	14674	\$440,2	4.3%	0.47	\$14	
Av cost of ORS in adults(53%)	50	16548	\$827,4	8.1%	0.63	\$27	
Hours lost in care giving(children)	8	146740	\$1,173	11.5%	4.70	\$38	
Hours lost to illness(adults)	8	165480	\$1,323	13.0%	5.30	\$42	
Hospitalization of children(0.75%)	2,500	110	\$275,0	2.7%	0.00	\$9	
Hospitalization of adults(0.50%)	2,500	83	\$207,5	2.0%	0.00	\$7	
		TOTAL	11,230	100%		. \$327	

Total:Rs.10,211,230



Component	Contillate	Inde	Total	Bassant	Average	
	Lostonia	Consumed	Cost	Total Cost	Use/Patient	Cost/Patient
Average cost of medicine	60	44252	\$2,212	15.3%	1.00	\$50
Average cost of preventive diet	50	44252	\$2,212	15.3%	1.00	\$50
Patients treated at medical facilities(70%)	80	30976	\$2,478	17.1%	0.70	\$56
Average cost of doctor visits	50	30976	\$1,548	10.7%	0.70	\$35
Av cost of ORS in children(47%)	90	20798	\$623,9	4.3%	0.47	\$14
Av cost of ORS in adults(53%)	50	23454	\$1,172	8.1%	0.53	\$27
Hours lost in care giving(children)	8	207980	\$1,663	11.5%	4.70	\$38
Hours lost to illness(adults)	8	234540	\$1,876	13.0%	5.30	\$42
Hospitalization of children(0.75%)	2,500	158	\$390,0	2.7%	0.00	\$9
Hospitalization of adults(0.50%)	2,500	117	\$292,5	2.0%	0.00	\$7

Total:Rs.14,471,380



Number of Patient = 14605	Title -		COI of	COI of dysentery in District Hafizabad				
Component	Cost/Unit	Units	Total Cost	Percent	Average Unit	Average		
		Consumed	1	Total Cost	Use/Patient	Cost/Patient		
Average cost of medicine	60	14605	\$730,2	15.3%	1.00	\$50		
Average cost of preventive diet	50	14605	\$730,2	15.3%	1.00	\$50		
Patients treated at medical facilities(70%)	60	10224	\$817,9	17.1%	0.70	\$56		
Average cost of doctor visits	50	10224	\$511,2	10.7%	0.70	\$35		
Av cost of ORS in children(47%)	30	6864	\$205,9	4.3%	0.47	\$14		
Av cost of ORS in adults(53%)	50	7741	\$387,0	8.1%	0.53	\$27		
Hours lost in care giving(children)	B	68640	\$549,1	11.5%	4.70	\$38		
Hours lost to illness(adults)	6	77410	\$619,2	13.0%	5.30	\$42		
Hospitalization of children(0.75%)	2,500	51	\$127,5	2.7%	0.00	\$9		
Hospitalization of adults(0.50%)	2,500	39	\$97,50	2.0%	0.00	\$7		
		TOTAL	\$4,775	100%		\$327		

Total:Rs.4,775,990

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Number of Patient 7090]	Title =	COL of dysentery in District Jhelum				
Component	Cost/Unit	Units	Total Cost	Percent Total Cost	Average Unit Use/Patient	Average Cost/Patient	
		Consumed					
Average cost of medicine	50	7090	\$354,5	15.3%	1.DO	\$50	
Average cost of preventive diet	50	7090	\$354,5	15.3%	1.00	\$50	
Patients treated at medical facilities(70%)	80	4963	\$397,0	17.1%	0.70	\$56	
Average cost of doctor visits	60	4963	\$248,1	10.7%	0.70	\$35	
Av cost of ORS in children(47%)	30	3332	\$99,96	4.3%	0.47	\$14	
Av cost of ORS in adults(63%)	60	3758	\$187,9	8.1%	0.53	\$27	
Hours lost in care giving(children)	8	33320	\$266,5	11.5%	4.70	\$38	
Hours lost to illness(adults)	8	37580	\$300,6	13.0%	5.30	\$42	
Hospitalization of children(0.75%)	2,500	25	\$62,50	2.7%	0.00	\$9	
Hospitalization of adults(D.50%)	2,500	19	\$47,50	2.0%	0.00	\$7	
	of the state of th	TOTAL	\$2.319	100%		\$327	

Total:Rs.2,319,250



Number of Patient - 89244		Title –	COI of dysentery in District Jhang				
Component	Cost/Unit	Units	Total Cost	Percent	Average Unit	Average	
		Consumed		Total Cost	Use/Patient	Cost/Patient	
Average cost of medicine	50	69244	\$4,462	15.3%	1.00	\$50	
Average cost of preventive diet	50	89244	\$4,462	15.3%	1.00	\$50	
Patients treated at medical facilities(70%)	80	62471	\$4,997	17.1%	0.70	\$56	
Average cost of doctor visits	50	62471	\$3,123	10.7%	0.70	\$35	
Av cost of ORS in children(47%)	30	41945	\$1,258	4.3%	0.47	\$14	
Av cost of ORS in adults(53%)	50	47299	\$2,364	B.1%	0.53	\$26	
Hours lost in care giving(children)	. 8	419450	\$3,365	11.5%	4.70	\$38	
Hours lost to illness(adults)	8	472990	\$3,783	13.0%	5.30	\$42	
Hospitalization of children(0.75%)	2,500	315	\$787,5	2.7%	0.00	\$9	
Hospitalization of adults(0.50%)	2,600	236	\$590,0	2.0%	0.00	\$7	
		TOTAL	\$29,18	100%		\$327	

Total:Rs.29,185,950



Number of Patient - 13240	1	Title =	COI of dysentery in District Kasur				
Component	Cost/Unit	Units	Total Cost	Percent	Average Unit	Average	
		Consumed		Total Cost	Use/Patient	Cost/Patient	
Average cost of medicine	50	13240	\$662,0	15.3%	1.00	\$50	
Average cost of preventive diet	50	13240	\$662,0	15.3%	1.00	\$50	
Patients treated at medical facilities(70%)	80	9268	\$741,4	17.1%	0.70	\$56	
Average cost of doctor visits	60	9268	\$463,4	10.7%	0.70	\$35	
Av cost of ORS in children(47%)	30	6223	\$186,6	4.3%	0.47	\$14	
Av cost of ORS in adults(53%)	60	7017	\$350,8	B.1%	0.53	\$26	
Hours lost in care giving(children)	8	62230	\$497,8	11.5%	4.70	\$38	
Hours lost to illness(adults)	8	70170	\$561,3	13.0%	6.30	\$42	
Hospitalization of children(0.75%)	2,500	47	\$117,5	2.7%	0.00	\$9	
Hospitalization of adults(0,50%)	2,500	35	\$87,50	2.0%	0.00	\$7	
		TOTAL	54 330	100%		\$327	

Total:Rs.4,330,580



Number of Patient 3794]	Title –	COI of	COI of dysentery in District Khanawal				
Component	Cost/Unit	Units	Total Cost	Percent	Average Unit	Average		
		Consumed		Total Cest	Use/Patient	Cost/Patient		
Average cost of medicine	60	3794	\$189,7	15.3%	1.00	\$50		
Average cost of preventive diet	50	3794	\$189,7	15.3%	1.00	\$50		
Patients treated at medical facilities(70%)	80	2656	\$212,4	17.1%	0.70	\$56		
Average cost of doctor visits	50	2656	\$132,8	10.7%	0.70	\$36		
Av cost of ORS in children(47%)	30	1783	\$53,49	4.3%	0.47	\$14		
Av cost of ORS in adults(53%)	60	2011	\$100,5	8.1%	0.53	\$27		
Hours lost in care giving(children)	8	17830	\$142,6	11.5%	4.70	\$38		
Hours lost to illness(adults)	8	20110	\$160,8	13.0%	5.30	\$42		
Hospitalization of children(0.75%)	2,500	13	\$32,50	2.6%	0.00	\$9		
Hospitalization of adults(0.50%)	2,500	10	\$25,00	2.0%	0.00	\$7		
		TOTAL	\$1,239	100%		\$327		

Total:Rs.1,239,740



Number of Patient 4851		Title - COI of dysentery in District Khu						
Component	Cost/Unit	Units	Total Cost	Percent	Average Unit	Average		
		Consumed		Total Cost	Use/Patient	Cost/Patient		
Average cost of medicine	60	4861	\$242,5	15.3%	1.00	\$50		
Average cost of preventive diet	50	4851	\$242,5	15.3%	1.00	\$50		
Patients treated at medical facilities(70%)	80	3396	\$271,6	17.1%	0.70	\$56		
Average cost of doctor visits	50	3396	\$169,8	10.7%	0.70	\$35		
Av cost of ORS in children(47%)	30	2280	\$68,40	4.3%	0.47	\$14		
Av cost of ORS in adults(53%)	60	2571	\$128,5	8.1%	0.63	\$26		
Hours lost in care giving(children)	B	22800	\$182,4	11.5%	4.70	\$38		
Hours lost to illness(adults)	8	26710	\$205,6	12.9%	5.30	\$42		
Hospitalization of children(0,75%)	2,500	17	\$42,50	2.7%	0.00	\$9		
Hospitalization of adults(0.50%)	2,500	14	\$35,00	2.2%	0.00	\$7		
		TOTAL	\$1.589	100%	0	\$328		

Total:Rs.1,589,110



Number of Patient	2	Title -	COI of dyseritery in District Lahore				
Component	Cost/Unit	Units	Total Cost	Percent	Average Unit	Average	
		Consumed		Total Cost	Use/Patient	Cost/Patiem	
Average cost of medicine	50	8259	\$412,9	15.3%	1.00	\$50	
Average cost of preventive diet	50	8259	\$412,9	15.3%	1.00	\$50	
Patients treated at medical facilities(70%)	60	6781	\$462,4	17.1%	0.70	\$56	
Average cost of doctor visits	50	5781	\$289,0	10.7%	0.70	\$35	
Av cost of ORS in children(47%)	30	3882	\$116,4	4.3%	0.47	\$14	
Av cost of ORS in adults(53%)	50	4377	\$218,8	8.1%	0.53	\$26	
Hours lost in care giving(children)	8	38820	\$310,5	11.5%	4.70	\$36	
Hours lost to illness(adults)	8	43770	\$350,1	13.0%	5.30	\$42	
Hospitalization of children(0.75%)	2,500	29	\$72,50	2.7%	0.00	\$9	
Hospitalization of adults(0.50%)	2,500	22	\$55,00	2.0%	0.00	\$7	
		TOTAL	\$2,700	100%		\$327	

Total:Rs.2,700,960



Number of Patient	(Title -	COL AT	GOL of dynamicry in District Layyah				
Component	Cost/Unit	Units	Total Cost	Percent	Average Unit	Average		
		Consumed	1	Total Cost	Use/Patient	Cost/Patient		
Average cost of medicine	50	3411	\$170,5	15.3%	1.00	\$50		
Average cost of preventive diet	50	3411	\$170,5	15.3%	1.00	\$50		
Patients treated at medical facilities(70%)	80	2388	5191,0	17.1%	0.70	\$56		
Average cost of doctor visits	50	2386	\$119,4	10.7%	0.70	\$35		
Av cost of ORS in children(47%)	30	1603	\$48,09	4.3%	D.47	\$14		
Av cost of ORS in adults(53%)	50	1808	\$90,40	8.1%	0.53	527		
Hours lost in care giving(children)	8	16030	\$128,2	11.5%	4.70	\$38		
Hours lost to illness(adults)	8	10080	\$144,6	13.0%	5.30	\$42		
Hospitalization of children(0.75%)	2,500	12	\$30,00	2.7%	D.00	\$9		
Hospitalization of adults(0.50%)	2,500	9	\$22,50	2.0%	0.00	\$7		
		TOTAL	\$1 115	100%		\$327		

Total:Rs.1,115,410



Number of Patient = 133362]	Title =	COI of	dysenter	y in District N	Aultan
Component	Cost/Unit	Units	Total Cost	Percent	Average Unit	Average
		Consumed		Total Cost	Use/Patient	Cost/Patien
Average cost of medicine	60	133352	\$6,667	15.3%	1.00	\$50
Average cost of preventive diet	50	133352	\$6,667	15.3%	1.00	\$50
Patients treated at medical facilities(70%)	80	93346	\$7,467	17.1%	0.70	\$56
Average cost of doctor visits	50	93346	\$4,667	10.7%	0.70	\$35
Av cost of ORS in children(47%)	30	62675	\$1,880	4.3%	0.47	514
Av cost of ORS in adults(53%)	50	70677	\$3,633	8.1%	0.53	\$27
Hours lost in care giving(children)	8	626750	\$5,014	11.5%	4.70	538
Hours lost to illness(adults)	8	706770	\$5,654	13.0%	5.30	\$42
Hospitalization of children(0.75%)	2,500	470	\$1,175	2.7%	0.00	\$9
Hospitalization of adults(0.50%)	2,500	953	\$882,5	2.0%	0.00	\$7
	And the streng water and	TOTAL	\$43.60	100%		\$327

Total:Rs.43,609,940



Number of Patient =28540		Title - COL of dysentery in District Mu						
Component	Cost/Unit	Units	Total Cost	Percent	Average Unit	Average		
		Consumed		Total Cost	Use/Patient	Cost/Patien		
Average cost of medicine	50	28540	\$1,427	15.3%	1.00	\$50		
Average cost of preventive diet	50	28540	\$1,427	15.3%	1.00	\$50		
Patients treated at medical facilities(70%)	80	19978	\$1,598	17.1%	0.70	\$56		
Average cost of doctor visits	50	19978	\$998,9	10.7%	0.70	\$35		
Av cost of ORS in children(47%)	30	13414	\$402,4	4.3%	0.47	\$14		
Av cost of ORS in adults(53%)	50	15126	\$756,3	8.1%	0.53	\$26		
Hours lost in care giving(children)	Ð	134140	\$1,073	11.5%	4.70	\$38		
Hours lost to Illness(adults)	8	151260	\$1,210	13.0%	5.30	\$42		
Hospitalization of children(0.75%)	2,500	101	\$252,5	2.7%	0.00	59		
Hospitalization of adults(0.50%)	2,500	76	\$190,0	2.0%	0.00	\$7		
		TOTAL	\$9,335	100%		\$327		

Total:Rs.9,335,560



Number of Patient – 15419]	Title =	COI of	dysenter	y in District N	Aandi B Din
Component	Cost/Unit	Units	Total Cost	Percent	Average Unit	Average
		Consumed		Total Cost	Use/Patient	Cost/Patient
Average cost of medicine	50	16419	\$770,9	15.3%	1.00	\$50
Average cost of preventive dist	50	15419	\$770,9	15.3%	1.00	\$50
Patients treated at medical facilities(70%)	80	10743	\$859,4	17.1%	0.70	\$56
Average cost of doctor visits	50	10743	\$537,1	10.7%	0.70	\$35
Av cost of ORS in children(47%)	30	7247	\$217,4	4.3%	0.47	514
Av cost of ORS in adults(53%)	50	8172	\$408,6	8.1%	0.53	\$26
Hours lost in care giving(children)	8	72470	\$579,7	11.5%	4.70	\$38
Hours lost to illness(adults)	В	81720	\$663,7	13.0%	5.30	\$42
Hospitalization of children(0.75%)	2,500	54	\$135,0	2.7%	0.00	59
Hospitalization of adults(0,50%)	2,500	41	\$102,5	2.0%	0,00	57
		TOTAL	45 035	1000/		\$337

Total:Rs.5,035,520



Number of Patient - 15286		Title –	COI of dysentery in District Narowal			
Component	Cost/Unit	Units	Total	Percent	Average Unit	Average
		Consumed		Total Cost	Use/Patient	Cost/Patient
Average cost of medicine	50	15286	\$764,3	15.3%	1.00	\$50
Average cost of preventive diet	50	15286	\$764,3	15.3%	1.00	\$50
Patients treated at medical facilities(70%)	80	10700	\$856,0	17.1%	0.70	\$56
Average cost of doctor visits	60	10700	\$536,0	10.7%	0.70	\$35
Av cost of ORS in children(47%)	30	7184	\$215,5	4.3%	0.47	\$14
Av cost of ORS in adults(53%)	50	8102	\$405,1	B.1%	0.53	\$27
Hours lost in care giving(children)	8	71840	\$574,7	11.5%	4.70	\$38
Hours lost to illness(adults)	8	81020	\$648,1	13.0%	5,30	\$42
Hospitalization of children(0,75%)	2,600	54	\$135,0	2.7%	0.00	\$9
Hospitalization of adults(0.50%)	2,600	41	\$102,5	2.0%	0.00	\$7
		TOTAL.	\$5,000	100%		\$327

Total:Rs.5,000,600



Number of Patient 5202		Title =	COI of	COI of dysentery in District Okara				
Component	Cost/Unit	Units	Total Cost	Percent	Average Unit	Average		
		Consumed		Total Cost	Use/Patient	Cost/Patient		
Average cost of medicine	60	6202	\$260,1	15.3%	1.00	\$50		
Average cost of preventive dist	50	5202	\$260,1	15.3%	1.00	\$50		
Patients treated at medical facilities(70%)	80	3641	\$291,2	17.1%	0.70	\$56		
Average cost of doctor visits	60	3641	\$182,0	10.7%	0.70	\$35		
Av cost of ORS in children(47%)	30	2445	\$73,35	4.3%	0.47	514		
Av cost of ORS in adults(53%)	50	2757	\$137,8	B.1%	0.53	\$26		
Hours lost in care giving(children)	8	24450	\$195,6	11.5%	4.70	\$38		
Hours lost to illness(adults)	B	27570	\$220,5	13.0%	5,30	\$42		
Hospitalization of children(0.75%)	2,500	18	\$45,00	2.6%	0.00	\$9		
Hospitalization of adults(0.58%)	2,500	14	\$35,00	2.1%	0.00	\$7		
		TOTAL	\$1,700	100%	14	\$327		

Total:Rs.1,700,890



Number of Patient = 10037]	Title =	COI of dysentery in District Pakpattan				
Component	Cost/Unit	Units	Total Cost	Percent	Average Unit	Average	
		Consumed		Total Cost	Use/Patient	Cost/Patient	
Average cost of medicine	50	10037	\$501,8	15.3%	1.00	\$50	
Average cost of preventive diet	50	10037	\$501,8	15.3%	1.00	\$50	
Patients treated at medical facilities(70%)	80	7026	\$562,0	17.1%	0.70	\$56	
Average cost of doctor visits	50	7026	\$351,3	10.7%	0.70	\$35	
Av cost of ORS in children(47%)	30	4717	\$141,5	4.3%	0.47	\$14	
Av cost of ORS in adults(53%)	50	6320	\$266,0	8.1%	0.63	\$27	
Hours lost in care giving(children)	8	47170	\$377,3	11.5%	4.70	\$38	
Hours lost to illness(adults)	0	53200	\$425,6	13.0%	5,30	\$42	
Hospitalization of children(0.75%)	2,500	35	\$87,50	2.7%	0.00	\$9	
Hospitalization of adults(0.50%)	2,500	27	\$67,50	2.1%	0.00	\$7	
		TOTAL	\$3,282	100%		\$327	

Total:Rs.3,282,550


Number of Patient - 77219		Title =	COI of dysentery in District Rawalpindi				
Component	Cost/Unit	Units	Total Cost	Percent	Average Unit	Average	
		Consumed		Total Cost	Use/Patient	Cost/Patient	
Average cost of medicine	50	77219	\$3,860	15.3%	1.00	\$50	
Average cost of preventive diet	50	77219	\$3,860	15.3%	1.00	\$50	
Patients treated at medical facilities(70%)	80	54053	\$4,324	17.1%	0.70	\$56	
Average cost of doctor visits	60	54053	\$2,702	10.7%	0.70	\$35	
Av cost of ORS in children(47%)	J 30	36293	\$1,088	4.3%	0.47	\$14	
Av cost of ORS in adults(53%)	50	40926	\$2,046	8.1%	0.53	\$26	
Hours lost in care giving(children)	0	362930	\$2,903	11.5%	4.70	\$38	
Hours lost to illness(adults)	0	409260	\$3,274	13.0%	5.30	\$42	
Hospitalization of children(0.75%)	2,500	272	\$680,0	2.7%	0.00	59	
Hospitalization of adults(0.50%)	2,500	205	\$512,5	2.0%	0.00	\$7	
		TOTAL	\$25 25	1009/		#307	

Total:Rs.25,253,900



Number of Patient - 102126	Title –		COI of dysentery in District Rajanpur				
Component	Cost/Unit	Units	Total Cost	Percent	Average Unit	Average	
	1	Consumed		Total Cost	Use/Patient	Cost/Patient	
Average cost of medicine	50	102126	\$5,106	15.3%	1.00	\$50	
Average cost of preventive diet	50	102126	\$5,106	15.3%	1.00	\$50	
Patients treated at medical facilities(70%)	80	71468	\$5,719	17.1%	0.70	556	
Average cost of doctor visits	60	71488	\$3,574	10.7%	0.70	\$35	
Av cost of ORS in children(47%)	30	47999	\$1,439	4.3%	0.47	514	
Av cost of ORS in adults(53%)	60	64127	\$2,706	8.1%	0.53	\$27	
Hours lost in care giving(children)	8"	479990	\$3,839	11.5%	4.70	536	
Hours lost to illness(adults)	J B	541270	\$4,330	13.0%	6.30	\$42	
Hospitalization of children(0.75%)	2,500	360	\$900,0	2.7%	0.00	\$9	
Hospitalization of adults(0.50%)	2,600	271	\$677.5	2.0%	0.00	\$7	
		TOTAL	\$33,39	100%		\$327	





Number of Patient - 29877		Title -	COI of dysentery in District Sialkat				
Component	Cost/Unit	Units	Total Cost	Percent Total Cost	Average Unit Use/Patient	Average Cost/Patient	
		Consumed	4				
Average cost of medicine	50	29877	\$1,493	15.3%	1.00	\$50	
Average cost of preventive diet	50	29877	\$1,493	15.3%	1.00	\$50	
Patients treated at medical facilities(70%)	80	20914	\$1,673	17.1%	0.70	\$56	
Average cost of doctor visits	50	20914	\$1,045	10.7%	0.70	\$35	
Av cast of ORS in children(47%)) <u> </u>	14042	\$421,2	4.3%	0.47	\$14	
Av cost of ORS in adults(53%)	50	15835	\$791,7	8.1%	0.53	\$27	
Hours lost in care giving(children)	8	140420	\$1,123	11.5%	4.70	\$38	
Hours lost to illness(adults)	8	150350	\$1,266	13.0%	5.30	\$42	
Hospitalization of children(0.75%)	2,500	105	\$262,5	2.7%	0.00	\$9	
Hospitalization of adults(0.50%)	2,500	79	\$197,5	2.0%	0.00	\$7	
		TOTAL	\$9 769	100%		5327	

Total:Rs.9,769,690



Number of Potient - 21718		Title –	COI of dysentery in District Sahiwal				
Component	Cost/Unit	Units	Total Cost	Percent	Average Unit	Average	
	*	Consumed		Total Cost	Use/Patient	Cost/Patient	
Average cost of medicine	50	21718	\$1,085	15.3%	1.00	\$50	
Average cost of preventive diet	50	21718	\$1,085	15.3%	1.00	\$50	
Patients treated at medical facilities(70%)	80	16203	\$1,216	17.1%	0.70	\$66	
Average cost of doctor visits	60	15203	\$760,1	10.7%	0.70	\$35	
Av cost of ORS in children(47%)	30	10207	\$306,2	4.3%	D.47	\$14	
Av cost of ORS in adults(53%)	50	11511	\$575,5	8.1%	0.53	\$27	
Hours lost in care giving(children)	·	102070	\$816,5	11.5%	4.70	\$38	
Hours lost to illness(adults)	8	115110	\$920,8	13.0%	5.30	\$42	
Hospitalization of children(0.75%)	2,500	77	\$192,5	2.7%	0.00	\$9	
Hospitalization of adults(0.50%)	- 2,500	j 60	\$145,0	-2.0%	· 0.00	\$7	
		TOTAL	\$7,104	100%		\$327	

Total:Rs.7,104,890



Number of Patient	Tide -		COI of dysentary in District Sheikhupura				
Component	Cost/Unix	Units	Total Cost	Percent	Average Unit	Average	
		Consumed		Total Cost	Use/Patient	Cost/Patient	
Average cost of medicine	50	6369	\$318,4	15.3%	1.00	\$50	
Average cost of preventive diet	50	6369	\$318,4	15.3%	1.00	\$60	
Patients treated at medical facilities(70%)	80	4458	\$356,6	17.1%	0.70	\$56	
Average cost of doctor visits	50	4458	\$222,9	10.7%	0.70	\$35	
Av cost of ORS in children(47%)	30	2993	\$89,79	4.3%	0.47	\$14	
Av cost of ORS in adults(53%)	50	3376	\$160,0	8.1%	0.53	\$27	
Hours lost in care giving(children)	8	29930	\$239,4	11.5%	4.70	\$38	
Hours lost to illness(adults)	B	33760	\$270,0	13.0%	5.30	\$42	
Hospitalization of children(0.75%)	2,500	22	\$55,00	2.6%	0.00	\$9	
Hospitalization of adults(0,50%)	2,500	17	\$42,50	2.0%	0.00	\$7	
		TOTAL	\$2 082	100%		\$927	







Number of Patient - 21186] Title -		COI of dysentery in District Sargodha				
Component	Cost/Unit	Units	Total Cost	al Percent	Average Unit	Average	
		Consumed		Total Cost	Use/Patient	Cost/Patient	
Average cost of medicine	50	21186	\$1,059	15.3%	1.00	\$50	
Average cost of preventive diet	60	21186	\$1,059	15.3%	1.00	\$50	
Patients treated at medical facilities(70%)	80	14830	\$1,186	17.1%	0.70	\$56	
Average cost of doctor visits	50	14830	\$741,5	10.7%	0.70	\$35	
Av cost of ORS in children(47%)	30	9957	\$298,7	4.3%	0.47	514	
Av cost of ORS in adults(53%)	50	11229	\$561,4	8.1%	0.53	\$27	
Hours lost in care giving(children)	8	99570	\$796,5	11.5%	4.70	\$38	
Hours lost to illness(adults)	a	112290	\$898,3	13.0%	5.30	\$42	
Hospitalization of children(0.75%)	2,500	75	\$187,5	2.7%	D.00	\$9	
Hospitalization of adults(0.50%)	2,500	56	\$140,0	2.0%	0.00	\$7	
	7	TOTAL	\$6,929	100%		\$327	

Total:Rs.6,929,040



Component	Cost/Unit	Inte =	Total	Reveent	Average	auguara da
		Consumed		Total Cost	Use/Patient	Cost/Patlen
Average cost of medicine	50	6751	\$337.55	15.3%	1.00	\$50
Average cost of preventive diet	50	6751	\$337,55	15.3%	1.00	\$50
Patients treated at medical facilities(70%)	80	4726	\$378,08	17.1%	0.70	\$56
Average cost of doctor visits	50	4726	\$236,30	10.7%	0.70	\$35
Av cost of ORS in children(47%)	30	3173	\$95,190	4.3%	0.47	\$1.4
Ay cost of ORS in adults(53%)	60	3578	\$178,90	8.1%	0.53	\$26
Hours lost in care giving(children)	6	31730	\$253,84	11.5%	4.70	\$38
Hours lost to illness(adults)	8	35780	\$286,24	13.0%	5.30	\$42
Hospitalization of children(0.75%)	2,500	24	\$60,000	2.7%	0.00	\$9
Hospitalization of adults(0.50%)	2,500	18	\$45,000	2.0%	0.00	\$7
		TOTAL	\$2,208.E	100%		\$327

Total:Rs.2,208,650



Number of Patient9603	Title =		COI of dysentery in District ∨ehari				
Component	Cost/Unit	Units	Total Cost	Percent	Average Unit	Average	
		Consumed		Total Cost	Use/Patient	Cost/Patient	
Average cost of medicine	50	9603	\$480,1	.15.3%	1.00	\$50	
Average cost of preventive diet	50	9603	\$480,1	15.3%	1.00	\$50	
Patients treated at medical facilities(70%)	60	6722	\$537,7	17.1%	0.70	\$56	
Average cost of doctor visits	50	6722	\$336,1	10.7%	0.70	\$35	
Av cost of ORS in children(47%)	30	4513	\$135,3	4.3%	0.47	514	
Av cost of ORS in adults(53%)	50	6090	\$254,5	8.1%	0.53	\$27	
Hours lost in care giving(children)	8	45130	\$361,0	11.5%	4.70	\$38	
Hours lost to illness(adults)	8	60900	\$407,2	13.0%	5.30	542	
Hospitalization of children(0.75%)	2,500	34	\$85,00	2.7%	0.00	59	
Hospitalization of adults(0,50%)	2,500	25	\$62,50	2.0%	0.00	57	
		TOTAL	\$3,139	100%		\$327	

Total:Rs.3,139,790



Number of Patient - 955710	Title -		COI of dysentery in the Punjab Province				
Component	Cost/Unit	Units	Total Cost	Percent	Average Unit	Average	
		Consumed		Total Cost	Use/Patient	Cost/Patient	
Average cost of medicine	60	955710	\$47,78	15.3%	1.00	\$50	
Average cost of preventive diet	50	966710	\$47,78	15.3%	1.00	\$60	
Patients treated at medical facilities(7D%)	60	668997	\$53,61	17.1%	0.70	\$56	
Average cost of doctor visits	50	668997	\$33,44	10.7%	0.70	\$35	
Av cost of ORS in children(47%)	30	449184	\$13,47	4.3%	0.47	\$14	
Av cost of ORS in adults(53%)	50	506526	\$25,32	8.1%	0.53	\$26	
Hours lost in care giving(children)	8	4491840	\$35,93	11.5%	4.70	\$38	
Hours lost to illness(adults)	0	6065260	\$40,52	13.0%	5.30	\$42	
Hospitalization of children(0.75%)	2,500	9369	\$8,422	2.7%	0.00	\$9	
Hospitalization of adults(0.50%)	2,500	2533	\$6,332	2.0%	0.00	\$7	
		TOTAL	5317 5	100.9/		\$327	

Total:Rs.312,554,230



Number of Patient] Title –		COI of Hepatitis in District Attock				
Component	Cost/Unit	Units	Total Cost	Percent	Average Unit	Average	
4	_	Consumed		Total Cost	Use/Patient	CostPatient	
Average cost of medicine	6,000	34	\$204,0	23.3%	1.00	\$6,000	
Average cost of preventive diet	6,000	34	\$204,0	23.3%	1.00	\$6,000	
Patients treated at medical facilities(70%)	800	24	\$19,20	2.2%	0.71	\$565	
Average cost of ductor visits	600	24	\$12,00	1.4%	0.71	\$353	
Cost of laboratory tests	1,000	24	\$24,00	2.7%	0.71	\$706	
Cost of hours of care givingchildren47%	8	17280	\$138,2	15.8%	508.24	\$4,066	
Cost of hours of care givingadults53%	8	19440	\$155,5	17.8%	571.76	\$4,574	
Hospitalization of children 80%	7,000	13	\$91,00	10.4%	0.38	\$2,676	
Hospitalization of adults 30%	7,000	A	\$28,00	3.2%	0.12	\$824	
	0	0	\$0	0.0%	0.00	\$0	
		TOTAL	\$876,9	100%		\$25,764	

Total:Rs.875,960



Number of Patient 243		Title –	COt of Hepatitis in District Bahawalpur				
Component	Cost/Unit	Units	Total Cost	Percent Total Cost	Average Unit Use/Patient	Average Cost/Patient	
		Consumed					
Average cost of medicine	6,000	243	\$1,458	22.5%	1.00	\$6,000	
Average cost of preventive diet	000,3	243	\$1,458	22.5%	1.00	\$6,000	
Patients treated at medical facilities(70%)	800	170	\$136,0	2.1%	0.70	\$560	
Average cost of doctor visits	500	170	\$85,00	1.3%	0.70	\$350	
Cost of laboratory tests	1,000	170	\$170,0	2.6%	0.70	\$700	
Cost of hours of care givingchildren47%	8	123120	\$984,9	15.2%	506.67	\$4,053	
Cost of hours of care givingadults53%	9	139320	\$1,114	17.2%	673.33	\$4,587	
Hospitalization of children 80%	7,000	114	\$798,0	12.3%	0.47	\$3,284	
Hospitalization of adults 30%	7,000	39	\$273,0	4.2%	0.16	\$1,123	
	0	0	\$0	0.0%	0.00	\$0	
		TOTAL	\$6,477	100%		\$26,656	

Total:Rs.6,477,520



Number of Patient			COI of Hepatitis in District Bhakkar				
- 153	J	Title =					
Component	Cost/Unit	Units	Total Cost	Percent	Average Unit	Average	
		Consumed		Total Cost	Use/Patient	Cost/Patient	
Avarage cost of medicine	6,000	163	\$918,0	23.1%	1.00	\$6,000	
Average cost of preventive diet	6,000	163	\$918,0	23.1%	1.00	\$6,000	
Patients treated at medical facilities(70%)	800	107	\$85,60	2.2%	0.70	\$559	
Average cost of doctor visits	500	107	\$53,50	1.3%	0.70	\$350	
Cost of laboratory tests	1,000	107	\$107,0	2.7%	0.70	\$699	
Cost of hours of care giving-children47%	8	77760	\$622,0	15.6%	508.24	\$4,066	
Cost of hours of care giving-adults53%	B	87480	\$699,8	17.6%	671.76	\$4,574	
Hospitalization of children 60%	7,000	68	\$406,0	10.2%	0.38	\$2,654	
Hospitalization of adults 30%	7,000	24	\$168,0	4.2%	D.16	\$1,098	
	0) 0	\$0	0.0%	0.00	\$0	
		TOTAL	\$3,978	100%		\$26,000	

Total:Rs.3,978,020



Number of Patient 304	Title =		COI of Hepatitis in District Bahawalnagar.				
Component	Cost/Unit	Units	Total Cost	Percent Total Cost	Average Unit Use/Patient	Average Cost/Patient	
		Consumed					
Average cost of medicine	6,000	304	\$1,824	23.1%	1.00	\$6,000	
Average cost of preventive diet	6,000	304	\$1,824	23.1%	1.00	\$6,000	
Patients treated at medical facilities(70%)	800	213	\$170,4	2.2%	0.70	\$561	
Average cost of doctor visits	500	213	\$106,5	1.3%	0.70	\$350	
Cost of laboratory tests	1,000	213	\$213,0	2.7%	0.70	\$701	
Cost of hours of care givingchildren47%	8	154440	\$1,235	15.6%	508.03	\$4,064	
Cost of hours of care givingadults53%	6	173080	\$1,391	17.6%	571.97	\$4,576	
Hospitalization of children 80%	7,000	114	\$798,0	10.1%	0.38	\$2,625	
Hospitalization of adults 30%	7,000	48	\$336,0	4.3%	0.16	\$1,105	
	0	0	\$0	0.0%	0.00	\$0	
		TOTAL	\$7,898	100%		\$25,982	

Total:Rs.7,898,460



Number of Potient 429	Title –		COI of Hepatitis in Distoct Chakwal				
Component	Cost/Unit	Units	Total Cost	Percent	Average Unit	Average	
		Consumed		Total Cost	Use/Patient	Cost/Patient	
Average cost of medicine	6,000	429	\$2,574	23.1%	1.00	\$6,000	
Average cost of preventive diet	6,000	429	\$2,574	23.1%	1.00	\$6,000	
Patients treated at medical facilities(70%)	000	900	\$240,0	2.2%	0.70	\$559	
Average cost of doctor visits	600	900	\$150,0	1.3%	0.70	\$350	
Cost of laboratory tests	1,000	300	\$300,0	2.7%	0.70	\$699	
Cost of hours of care givingchildren47%	0	210160	\$1,745	15.6%	508.63	\$4,068	
Cost of hours of care givingadults53%	- 0	245160	\$1,961	17.6%	571.47	\$4,572	
Hospitalization of children 60%	7,000	162	\$1,134	10.2%	0.38	\$2,643	
Hospitalization of adults 30%	7,000	68	\$476,0	4.3%	0.16	\$1,110	
	D	0	\$0	D.0%	0.00	\$0	
		TOTAL	\$11,15	100%		\$26,001	

Total:Rs.11,154,560



Number of Patient 56] Title -		COI of Hepatitis in District D.G. Khan				
Component	Cost/Unit	Units	Total Cost	Percent Total Cost	Average Unit Use/Patient	Average	
		Consumed				Cost/Patient	
Average cost of medicine	6,000	56	\$336,0	23.1%	1.00	\$6,000	
Average cost of preventive diet	6,000	56	\$336,0	23.1%	1.00	\$6,000	
Patients treated at medical facilities(70%)	800	39	\$31,20	2.1%	0.70	\$557	
Average cost of doctor visits	500	99	\$19,50	1.3%	0.70	\$348	
Cost of laboratory tests	1,000	39	\$39,00	2.7%	0.70	\$696	
Cost of hours of care givingchildren47%	0	28080	\$224,6	15.4%	501.43	\$4,011	
Cost of hours of care giving-adults53%	6	32400	\$259,2	17.8%	578.57	\$4,629	
Hospitalization of children 80%	7,000	21	\$147,0	10.1%	0.38	\$2,625	
Hospitalization of adults 30%	7,000	9	\$63,00	4.3%	0.16	\$1,125	
		D	\$0	0.0%	0.00	\$0	
		TOTAL	\$1,455	100%		\$25,992	

Total:Rs.1,455,540



Number of Patient 1196	Title =		COI of Hepatitis in District Faisalabad				
Component	Cost/Unit	Units	Total Cost	Percent	Average Unit	Average	
		Consumed		Total Cost	Use/Patient	Cost/Patient	
Average cost of medicine	6,000	1196	\$7,175	23.1%	1.00	\$6,000	
Average cost of preventive diet	6,000	1196	\$7,176	23.1%	1.00	\$6,000	
Patients treated at medical facilities(70%)	800	837	\$669,6	2.2%	0.70	\$560	
Average cost of doctor visits	500	037	\$418,5	1.3%	0.70	\$350	
Cost of laboratory tests	1,000	837	\$837,0	2.7%	0.70	\$700	
Cost of hours of care givingchildren47%	8	606960	\$4,855	15.6%	507.49	\$4,060	
Cost of hours of care givingadults53%	8	684720	\$5,477	17.6%	572.51	\$4,580	
Hospitalization of children 80%	1 7,000	450	\$3,150	10.1%	D.38	\$2,634	
Hospitalization of adults 30%	7,000	190	\$1,330	4.3%	0.16	\$1,112	
	a a	D	\$0	0.0%	0.00	\$0	
		TOTAL	\$31 09	1 100%		\$25 995	

Total:Rs.31,091,540



Number of Patient 1592	1	Title –	CDI of Hepatitis in District Guirat				
Component	Cost/Unit	Units	Total Cost	Percent Total Cost	Average Unit Use/Patient	Average Cost/Patlent	
		Consumed					
Average cost of medicine	6,000	. 1692	\$9,552	23.1%	1.00	\$6,000	
Average cost of preventive diet	6,000	1592	\$9,652	23.1%	1.00	\$6,000	
Patients treated at medical facilities(70%)	008	1114	\$891,2	2.2%	0.70	\$560	
Average cost of doctor visits	500	1114	\$667,0	1.3%	0.70	\$350	
Cost of laboratory tests	1,000	1114	\$1,114	2.7%	0.70	\$700	
Cost of hours of care giving-children47%	8	807840	\$6,462	15.6%	507.44	\$4,059	
Cost of hours of care givingadults53%	0	911520	\$7,292	17.6%	572.66	\$4,581	
Hospitalization of children 80%	7,000	698	\$4,186	10.1%	0.38	\$2,629	
Hospitalization of adults 30%	7,000	253	\$1,771	4.3%	0.16	\$1,112	
	0	0	\$0	0.0%	0.00	·\$C	
		TOTAL	\$41,37	100%		\$25,991	

Total:Rs.41,378,080



- 1592		Title =	COI of Hepatitis in District Gujranwala				
Component	Cost/Unit	Units	Total Cost	Percent	Average Unit	Average	
		Consumed		Total Cost	Uss/Patient	Cost/Patien	
Average cost of medicine	6,000	1692	\$9,562	23.1%	1.00	\$6,000	
Average cost of preventive diet	6,000	1592	\$9,552	23.1%	1.00	\$6,000	
Patients treated at medical facilities(7D%)	000	1114	\$891,2	2.2%	0.70	\$560	
Average cost of doctor visits	500	1114	\$557,0	1.3%	0.70	\$350	
Cost of laboratory tests	1,000	1114	\$1,114	2.7%	0.70	\$700	
Cost of hours of care givingchildren47%	8	807840	\$6,462	15.6%	507.44	\$4,059	
Cost of hours of care givingadults53%	8	911520	\$7,292	17.6%	572.56	\$4,581	
Hospitalization of children 80%	7,000	698	54,186	10.1%	0.38	\$2,629	
Hospitalization of adults 30%	7,000	253	\$1,771	4.3%	0.16	51,112	
The second s	0	0	50	D.D%	0.00	\$0	
		TOTAL	\$41,37	100%		\$26,991	

Total:Rs.41,378,080



Number of Patient]	Title -	COI of Hepatilis in District Hafizabed				
Component	Cost/Unit	Units	Total Cost	Percent	Average Unit	Average	
		Consumed		Total Cost	Use/Patient	Cost/Patien	
Average cost of medicine	6,000	189	\$1,134	23.1%	1.00	\$6,000	
Average cost of preventive diet	6,000	189	\$1,134	23.1%	1.00	\$6,000	
Patients treated at medical facilities(70%)	800	132	\$105,6	2.2%	0.70	\$559	
Average cost of doctor visits	600	132	\$66,00	1.3%	0.70	\$349	
Cost of laboratory tests	1,000	132	\$132,0	2.7%	0.70	\$698	
Cost of hours of care givingchildren47%	8	96120	\$768,9	15.7%	508.57	\$4,069	
Cost of hours of care givingadults53%	8	108000	\$864,0	17.6%	571.43	\$4,571	
Hospitalization of children 80%	7,000	71	\$497,0	10.1%	0.38	\$2,630	
Hospitalization of adults 30%	7,000	30	\$210,0	4.3%	0.16	\$1,111	
the assessment of the source of the second	(0	\$0	0.0%	0.00	\$0	
		TOTAL	\$4,911	100%		\$25,987	

Total:Rs.4,911,560



Number of Patient 1049	J Title -		COI of Hepatitis in District Jhelum				
Component	Cost/Unit	Units	Total	al st Percent	Average Unit	Average	
		Consumed		Total Cost	Use/Patient	Cost/Patient	
Average cost of medicine	6,000	1049	\$6,294	23.1%	1.00	\$6,000	
Average cost of preventive diet	6,000	1049	\$6,294	23.1%	1.00	\$6,000	
Patients treated at medical facilities(70%)	800	734	\$587,2	2.2%	0.70	\$560	
Average cost of doctor visits	500	734	\$367,0	1.3%	0.70	\$350	
Cost of laboratory tests	1,000	734	\$734,0	2.7%	0.70	\$700	
Cost of hours of care givingchildren47%	8	532440	\$4,259	15.6%	507.57	\$4,061	
Cost of hours of care giving-adults53%	8	600480	\$4,803	17.6%	572.43	\$4,579	
Hospitalization of children 80%	7,000	394	\$2,758	10.1%	0,38	\$2,629	
Hospitalization of adults 30%	7,000	167	\$1,169	4.3%	0.16	\$1,114	
	0		\$0	0.0%	.0.00	\$D	
		TOTAL	\$27 26	100%		\$26 993	

Total:Rs.27,266,560



Number of Patient	Title -		COI of Hepatitis in District Jhang				
Component	Cost/Unit	Units	Total Cost	Percent Total Cost	Average Unit Use/Patient	Average	
		Consumed				Cost/Patient	
Average cost of medicine	6,000	1715	\$10,29	23.1%	1.00	\$6,000	
Average cost of preventive diet	6,000	1715	\$10,29	23.1%	1.00	\$6,000	
Patients treated at medical facilities(70%)	800	1201	\$960,8	2.2%	0.70	\$560	
Average cost of doctor visits	500	1201	\$600,5	1.3%	0.70	\$350	
Cost of laboratory tests	1,000	1201	\$1,201	2.7%	0.70	\$700	
Cost of hours of care givingchildren47%	8	870480	\$6,963	15.6%	507.57	\$4,061	
Cost of hours of care givingadults53%	0	981720	\$7,853	17.6%	572.43	\$4,579	
Hospitalization of children 80%	7,000	645	\$4,615	10.1%	0.38	\$2,633	
Hospitalization of adults 30%	7,000	273	\$1,911	4.3%	0.16	\$1,114	
	0	0	\$0	0.0%	0.00	\$0	
		TOTAL	\$44,58	100%		\$25,998	

Total:Rs.44,585,900



Number of Patient 36		Title -	COI of Hepatitis in District Kasor			
Component	Cost/Unit		Total Cost	Percent	Average Unit	Average
		Consumed		Total Cost	Use/Patient	Cost/Patient
Average cost of medicine	6,000	36	\$216,0	23.0%	1.00	\$6,000
Average cost of preventive diet	e,000	36	\$216,0	23.0%	1.00	\$6,000
Patients treated at medical facilities(70%)	800	25	\$20,00	2.1%	0.69	\$556
Average cost of doctor visits	500	25	\$12,50	1.3%	0.69	\$347
Cost of laboratory tests	1,000	25	\$25,00	2.7%	0.69	\$694
Cost of hours of care givingchildren47%	0	10360	\$146,8	15.6%	510.00	\$4,080
Cost of hours of care givingadults53%	8	20520	\$164,1	17.5%	670.00	\$4,560
Hospitalization of children 80%	7,000	14	\$98,00	10.4%	0.39	\$2,722
Hospitalization of adults 30%	7,000	6	\$42,00	4.5%	0.17	. \$1,167
the state of the second st		D	\$0	0.0%	0.00	50
Y		TOTAL	\$940,5	100%		\$26,126

Total:Rs.940,540



Number of Patient 70	Title -		COI of	COI of Hepatilis in District Khanewal				
Component	Cost/Unit	Units	Total Cost	Percent	Average Unit	Average		
		Consumed		Total Cost	Use/Patient	Cost/Patient		
Average cost of medicine	6,000	70	\$420,0	23.1%	1.00	\$6,000		
Average cost of preventive diet	6,000	70	\$420,0	23.1%	1.00	\$6,000		
Patients treated at medical facilities(70%)	800	49	\$39,20	2.2%	0.70	\$660		
Average cost of doctor visits	500	49	\$24,50	1.3%	0.70	\$350		
Cost of laboratory tests	1,000	49	\$49,00	2.7%	0.70	\$700		
Cost of hours of care givingchildren47%	8	35640	\$285,1	15.7%	509.14	\$4,073		
Cost of hours of care givingadults53%	8	39960	\$319,6	17.6%	570.86	\$4,567		
Hospitalization of children 80%	7,000	26	\$182,0	10.0%	0.37	\$2,600		
Hospitalization of adults 30%	7,000	11	\$77,00	4.2%	0.16	\$1,100		
	0] 0	\$0	0.0%	0.00	\$0		
	1.14.1	TOTAL	\$1,816	100%	-	\$26,950		

Total:Rs.



Number of Patient			CONTRACT OF ALL AND A L					
- (////////////////////////////////////	1	Title -	1001 01	COLOR Repairies in cliethet Knushau				
Component	Cost/Unit	Units	Total Cost	Percent Total Cost	Average Unit	Average		
		Consumed	ı		Use/Patient	Cost/Patient		
Average cost of medicine	000,8	170	\$1,020	23.1%	1.00	\$6,000		
Average cost of preventive dist	6,000	170	\$1,020	23.1%	1.00	\$6,000		
Patients treated at medical facilities(70%)	600	119	\$95,20	2.2%	0.70	\$560		
Average cost of doctor visits	600	119	\$59,50	1.3%	0.70	\$350		
Cost of laboratory tests	1,000	119	\$119,0	2.7%	0.70	\$700		
Cost of hours of care giving-children47%	0	86400	\$691,2	15.6%	508.24	\$4,066		
Cost of hours of care givingadults53%	B	97200	\$777,6	17.6%	571.76	\$4,574		
Hospitalization of children 80%	7,000	64	\$448,0	10.1%	0,38	\$2,635		
Hospitalization of adults 30%	7,000	27	\$189,0	4.3%	0.16	\$1,112		
	D	0	\$0	0.0%	0.00	\$0		
		TOTAL	\$4,419	100%		\$25.997		

Total:Rs.4,419,500



Number of Patient 7962]	Title -	COI of Hepatitis in District Lahore				
Component	Cost/Unit	Units	Total Cost	Percent Total Cost	Average Unit Use/Patient	Average	
		Consumed				Cost/Patient	
Average cost of medicine	6,000	7962	\$47,77	-23.1%	1.00	\$6,000	
Average cost of preventive diet	6,000	7962	\$47,77	23.1%	1.00	\$6,000	
Patients treated at medical facilities(70%)	800	6573	\$4,458	2.2%	0.70	\$560	
Average cost of doctor visits	500	5573	\$2,786	1.3%	0.70	\$350	
Cost of laboratory tests	1.000	6573	\$5,573	2.7%	0.70	\$700	
Cost of hours of care givingchildren47%	8	4041360	\$32,33	15.6%	507.58	\$4,061	
Cost of hours of care givingadults53%	B	4557600	\$36,46	17.6%	572.42	\$4,679	
Hospitalization of children 80%	7,000	2994	\$20,95	10.1%	0.38	\$2,632	
Hospitalization of adults 30%	7,000	1266	\$8,862	4.3%	0.16	\$1,113	
	0	0	\$0	0.0%	0.00	\$0	
		TOTAL	\$206,9	100%		\$25,995	

Total:Rs.206,973,580



Number of Patient 70	2	Title - COL of Repatitis in District-Lodhr					
Сопролевт	Cost/Unit	Units	Total	Percent	Average Unit	Average	
		Consumed	•	Total Cost	Use/Patient	Cost/Pation	
Average cost of medicine	6,000	70	\$420,0	23.1%	1.00	\$6,000	
Average cost of preventive diet	6,000	70	\$420,0	23.1%	1.00	\$6,000	
Patients treated at medical facilities(70%)	800	49	\$39,20	2.2%	0.70	\$560	
Average cost of doctor visits	500	49	\$24,50	1.3%	0.70	\$350	
Cost of laboratory tests	1,000	49	\$49,00	2.7%	D.70	\$700	
Cost of hours of care givingchildren47%	8	35640	\$285,1	15.7%	509.14	\$4,073	
Cost of hours of care givingadults53%	8	39960	\$319,6	17.6%	570.86	\$4,567	
Hospitalization of children 80%	7,000	26	\$182,0	10.0%	0.37	\$2,600	
Hospitalization of adults 30%	7,000	11	\$77,00	4.2%	0.16	\$1,100	
	0	0	\$0	0.0%	0.00	\$0	
	1. S	TOTAL	51,816	100%		\$25,950	

Total:Rs.1,816,500



- 33	Title =		COI of Hepatitis in District Layyah				
Component	Cost/Unit	Units	Total Cost	Percent	Average Unit	Average	
		Consumed		Total Cost	Use/Patient	Cost/Patient	
Average cost of medicine	000,3	33	\$198,0	23.0%	1.00	\$6,000	
Average cost of preventive diet	6,000	93	\$198,0	23.0%	1.00	\$6,000	
Patients treated at medical facilities(70%)	800	23	\$18,40	2.1%	0.70	\$558	
Average cost of doctor visits	500	23	\$11,50	1.3%	0.70	\$348	
Cost of laboratory tests	1,000	23	\$23,00	2.7%	0.70	\$697	
Cost of hours of care givingchildren47%	B	17280	\$138,2	16.1%	523.64	\$4,189	
Cost of hours of care givingadults53%	8	18360	\$146,8	17.1%	556.36	\$4,451	
Hospitalization of children 60%	7,000	13	\$91,00	10.6%	0.39	\$2,758	
Hospitalization of adults 30%	7,000	6	\$35,00	4.1%	0.15	\$1,061	
	0	0	\$0	0.0%	0.00	\$0	
		TOTAL	\$860,0	100%	10	\$26,061	

Total:Rs.860,020



Number of Patient		Title -	COI of Hepatitis in District Multan				
Component	Cost/Unit	Units	Total Cost	Percent	Average Unit	Average	
		Consumed		Total Cost	Use/Patient	Cost/Patient	
Average cost of medicine	000, 8.		\$216,0	23.0%	1.00	\$6,000	
Average cost of preventive diet	6,000	36	\$216,0	23.0%	1.00	\$6,000	
Patients treated at medical facilities(70%)	800	25	\$20,00	2.1%	0.69	\$556	
Average cost of doctor visits	500	25	\$12,50	1.3%	D.69	\$347	
Cost of laboratory tests	1,000	25	\$25,00	2.7%	0,69	\$694	
Cost of hours of care givingchildren47%	8	10360	\$146,8	15.6%	510.00	\$4,080	
Cost of hours of care givingadults53%	9	20520	\$164,1	17.5%	570,00	\$4,560	
Hospitalization of children 80%	7,000	14	\$98,00	10.4%	0.39	\$2,722	
Hospitalization of adults 30%	7,000	6	\$42,00	4.5%	0.17	\$1,167	
	0	0	\$0	0.0%	0.00	\$0	
		TOTAL	\$940.5	100%		\$26,126	

Total:Rs.940,540



Number of Patient]	Title -	COI of Hepatitis in District Mianwali				
Component	Cost/Unit	Units	Total Cost	Percent Total Cost	Average Unit Use/Patient	Average	
		Consumed				Cost/Patien	
Average cost of medicine	6,000	1592	\$9,552	23.1%	1.00	\$6,000	
Average cost of preventive diet	6,000	1592	\$9,652	23.1%	· 1.00	\$6,000	
Patients treated at medical facilities(70%)	800	1114	\$891,2	2.2%	0.70	\$560	
Average cost of doctor visits	600	1114	\$557,0	1.3%	0.70	\$350	
Cost of laboratory tests	1,000	1114	\$1,114	2.7%	0.70	\$700	
Cost of hours of care givingchildren47%	8	807840	\$6,462	15.6%	507.44	\$4,059	
Cost of hours of care givingadults53%	. 8	911520	\$7,292	17.6%	572.56	\$4,581	
Hospitalization of children 80%	7,000	598	\$4,186	10.1%	D.30	\$2,629	
Hospitalization of adults 30%	7,000	253	\$1,771	4.3%	0.16	\$1,112	
Prostal (1) Provide Head Conference of Automatical States)	. 0	0	\$0	0.0%	0.00	\$0	
		TOTAL	\$41,37	100%		\$25,991	

Total:Rs.41,378,080



E

		Title -	COI of Hepatitis in District Muzafargarh				
Component	Cost/Unit	Units	Total Cost	Percent	Average Unit	Average	
		Consumed		Total Cost	Use/Patient	Cost/Patient	
Average cost of medicine	6,000	SC 50	\$300,0	23.1%	1.00	\$6,000	
Average cost of preventive diet	6,000	60	\$300,0	23.1%	1.00	\$6,000	
Patients treated at medical facilities(70%)	800	35	\$28,00	2.2%	0.70	\$560	
Average cost of doctor visits	500	35	\$17,50	1.3%	0.70	\$350	
Cost of laboratory tests	1,000	35	\$35,00	2.7%	0.70	\$700	
Cost of hours of care givingchildren47%	8	25920	\$207,3	15.9%	518.40	\$4,147	
Cost of hours of care giving-adults53%	8	28080	\$224,6	17.3%	661.60	\$4,493	
Hospitalization of children 80%	7,000	19	\$133,0	10.2%	0.38	\$2,660	
Hospitalization of adults 30%	7,000	9	\$56,00	4.3%	D.16	\$1,120	
	0	D	50	0.0%	0.00	\$D	
		TOTAL	\$1,301	100%		\$26.030	

Total:Rs.1,301,500



Number of Patient 34]	Title -	COI of Hepatitis in District Mandi B Din				
Component	Cost/Unit	Units	Total Cost	Percent	Average Unit	Average	
		Consumed		Total Cost	Use/Patient	Cost/Patient	
Average cost of medicine	6,000	34	\$204,0	23.3%	1.00	\$6,000	
Average cost of preventive diet	6,000	34	\$204,0	23.3%	1.00	\$6,000	
Patients treated at medical facilities(70%)	800	24	\$19,20	2.2%	0.71	\$565	
Average cost of doctor visits	600	24	\$12,00	1.4%	0.71	\$353	
Cost of laboratory tests	1,000	24	\$24,00	2.7%	D.71	\$706	
Cost of hours of care givingchildren47%	8	17280	\$138,2	15.8%	608.24	\$4,066	
Cost of hours of care giving-adults53%	8	19440	\$155,5	17.8%	571.76	\$4,574	
Hospitalization of children 60%	7,000	13	\$91,00	10.4%	0.38	\$2,676	
Hospitalization of adults 30%	7,000	4	\$28,00	3.2%	0.12	\$824	
	0	d d	50	D.0%	0.00	\$0	
		TOTAL	\$875.9	100%		\$25,764	

Total:Rs.875,960



Number of Patient		Title =	COI of Hepatitis in District Narowal				
Component	Cost/Unit	Units	Total Cost	Percent	Average Unit	Average	
		Consumed		Total Cost	Use/Patient	Cost/Patient	
Average cost of medicine	6,000	61	\$366,0	23.0%	1.00	\$6,000	
Average cost of preventive diet	6,000	61	\$366.0	23.0%	1.00	\$6,000	
Patients treated at medical facilities(7D%)	eoo	43	\$34.40	2.2%	0.70	\$564	
Average cost of doctor visits	500	43	\$21,50	1.4%	0.70	\$352	
Cost of laboratory tests	000,1	43	\$43,00	2.7%	0.70	\$705	
Cost of hours of care giving-children47%	8	31320	\$250,5	15.8%	513.44	\$4,108	
Cost of hours of care givingadults53%	8	94560	\$276,4	17.4%	566.56	\$4,532	
Hospitalization of children 80%	7,000	23	\$161,0	10.1%	0.38	\$2,639	
Hospitalization of adults 30%	7,000	10	\$70,00	4.4%	0.16	\$1,148	
	0	0	\$0	0.0%	0.00	\$0	
		TOTAL	\$1.688	100%		\$26,048	

Total:Rs.1,588,940



Number of Patient 70	Title -		COI of	COI of Hepatitis in District Okara				
Component	Cost/Unit	Units	Total Cost	Percent Total Cost	Average Unit Use/Patient	Average Cost/Patient		
		Consumed						
Average cost of medicine	6,000	70	\$420,0	23.1%	1.00	\$6,000		
Average cost of preventive diet	6,000	70	\$420,0	23.1%	1.00	\$6,000		
Patients treated at medical facilities(70%)	800	49	\$39,20	2.2%	0.70	\$560		
Average cost of doctor visits	500	49	\$24,50	1.3%	0.70	\$360		
Cost of laboratory tests	1,000	49	\$49,00	2.7%	0.70	\$700		
Cost of hours of care givingchildren47%	8	35640	\$285,1	15.7%	509.14	54,073		
Cost of hours of care givingadults53%	8	39960	\$319,6	17.6%	570.86	\$4,567		
Hospitalization of children 80%	7,000	26	\$182,0	10.0%	0.37	\$2,600		
Hospitalization of adults 30%	7,000	11	\$77,00	4.2%	0.16	\$1,100		
	O O	0	\$0	0.0%	0.00	\$0		
		TOTAL	\$1,816	100%	>	\$25,950		

Total:Rs.1,816,500



Number of Patient 55	0	Title -	COI of Hepatitis in District Pekpettan				
Component	Cost/Unit	Units	Total Cost	Percent	Average Unit	Average	
		Consumed		Total Cost	Use/Patient	Cost/Patient	
Average cost of medicine	6,000	65	\$330,0	23.4%	1.00	\$6,000	
Average cost of preventive diet	6,000	55	\$330,0	23.4%	1.00	\$6,000	
Patients treated at medical facilities(70%)	800	27	\$21,60	1.5%	0.49	\$393	
Average cost of doctor visits	600	27	\$13,50	1.0%	0.49	\$245	
Cost of laboratory tests	1,000	27	\$27,00	1.9%	0.49	\$491	
Cost of hours of care givingchildren47%	8	28080	\$224,6	16.0%	510.55	\$4,084	
Cost of hours of care givingadults63%	8	31320	\$250,5	17.8%	569.45	\$4,556	
Hospitalization of children 80%	7,000	21	\$147,0	10.4%	0.38	\$2,673	
Hospitalization of adults 30%	7,000	9	\$63,00	4.5%	0.16	\$1,145	
	0	0	\$0	0.0%	0.00	\$0	
		TOTAL	51.407	100%		\$25 587	

Total:Rs.1,407,300



Number of Patient 690	Title -		COI of	COI of Hepatitis in District Rawalpindi				
Component	Cost/Unit	Units	Total Cost	Percent Total Cost	Average Unit Use/Patient	Average Cost/Patient		
		Consumed						
Average cost of medicine	6,000	698	\$4,188	23.1%	1.00	\$6,000		
Average cost of preventive diet	6,000	698	\$4,188	23.1%	1.00	\$6,000		
Patients treated at medical facilities(70%)	800	489	\$391,2	2.2%	0.70	\$560		
Average cost of doctor visits	500	489	\$244,5	1.3%	0.70	\$360		
Cost of laboratory tests	1,000	489	\$489,0	2.7%	0.70	\$701		
Cost of hours of care givingchildren47%	8	354240	\$2,833	15.6%	507.51	\$4,060		
Cost of hours of care givingadults53%	8	399600	\$3,196	17.6%	572.49	\$4,580		
Hospitalization of children 80%	7,000	262	\$1,834	10.1%	0.38	\$2,628		
Hospitalization of adults 30%	7,000	110	\$777,0	4.3%	0.16	\$1,113		
	0	0	\$0	0.0%	0.00	\$0		
		TOTAL	\$18.14	100%		\$25 992		

Total:Rs.18,142,420



Number of Patient 844	Title =		COI of Hepatitis in District Rahim Yar Khan				
Component	Cost/Unit	Units	Total Cost	Percent	Average Unit	Average	
		Consumed		Total Cost	Use/Patient	Cost/Patien	
Average cost of medicine	6,000	844	\$5,064,0	23,1%	1.00	\$6,000	
Average cost of preventive diet	6,000	844	\$5,064,0	23.1%	1.00	\$6,000	
Patients treated at medical facilities(70%)	600	591	\$472,80	2.2%	0.70	\$560	
Average cost of doctor visits	500	591	\$295,50	1.3%	0.70	\$350	
Cost of laboratory tests	1,000	591	\$591,00	2.7%	0.70	\$700	
Cost of hours of care giving-children47%	8	428760	\$3,430,0	15.6%	508.01	\$4,064	
Cost of hours of care giving-adults53%	8	482760	\$3,862,0	17.6%	571.99	\$4,576	
Hospitalization of children 60%	7,000	318	\$2,226,	10.1%	0,38	\$2,637	
Hospitalization of adults 30%	7,000	134	\$938,00	4.3%	0.16	\$1,111	
	I 0	0	\$0	0.0%	0.00	\$0	
		TOTAL	\$21,943	100%		\$25,999	

Total:Rs.21,943,460



Number of Patient 492]	Title =	COI of Hepatitis in District Rajanpur						
Component	Cost/Unit	Units	Total Cost	Percent	Average Unit	Average			
		Consumed		Total Cost	Use/Patient	Cost/Patien			
Average cost of medicine	6,000	492	\$2,952	23.1%	1.00	\$6,000			
Average cost of preventive diet	6,000	492	\$2,952	23.1%	1.00	\$6,000			
Patients treated at medical facilities(70%)	800	344	\$275,2	2.2%	0.70	\$559			
Average cost of doctor visits	500	344	\$172,0	1.3%	0.70	\$350			
Cost of laboratory tests	1,000	344	\$344,0	2.7%	0.70	\$699			
Cost of hours of care givingchildren47%	6	249480	\$1,995	15.6%	607.07	\$4,057			
Cost of hours of care givingadults53%	8	281880	\$2,255	17.6%	572.93	\$4,583			
Hospitalization of children 80%	7,000	185	\$1,295	10.1%	0.38	\$2,632			
Hospitalization of adults 30%	- 7,000	78	\$546,0	4.3%	0.16	\$1,110			
	D	0	\$0	0.0%	0.00	\$0			
		TOTAL	\$12,78	100%		\$26,990			

Total:Rs.12,787,080



Number of Patient 110		Title =	COI of	201 of Hepatitis in District Sialkot					
Component	Cost/Unit	Units	Total Cost	Percent	Average Unit	Average			
		Consumed		Total Cost	Use/Patient	Cost/Patient			
Average cost of medicine	6,000	110	\$660,0	23.1%	1.00	\$6,000			
Average cost of preventive diet	6,000	110	\$660,0	23.1%	1.00	\$6,000			
Patients treated at medical facilities(70%)	800	77	\$61,60	2.2%	0.70	\$560			
Average cost of doctor visits	500	77	\$38,50	1.3%	0.70	\$350			
Cost of laboratory tests	1,000	77	\$77,00	2.7%	0.70	\$700			
Cost of hours of care givingchildren47%	8	56160	\$449,2	15.7%	510.55	\$4,084			
Cost of hours of care givingadults53%	6	62640	\$501,1	17.5%	569.45	\$4,556			
Hospitalization of children 80%	7,000	42	\$294,0	10.3%	0.38	\$2,673			
Hospitalization of adults 30%	7,000	17	\$119,0	4.2%	0.15	\$1,082			
B) State of the second s second second se Second second s Second second seco	0	0	\$0	0.0%	0.00	\$0			
		TOTAL	\$2,860	100%		\$26,005			

Total:Rs.2,860,500



Number of Patient 70		Title =	COI of	Hepatitis	In District S	ahiwal
Component	Cost/Unit	Units	Total Cost	Percent	Average Unit	Average
		Consumed		Total Cost	Use/Patient	Cost/Pation
Average cost of medicine	6,000	70	\$420,0	23.1%	1.00	\$6,000
Average cost of preventive diet	6,000	70	\$420.0	23.1%	1.00	\$6,000
Patients treated at medical facilities(70%)	800	49	\$39,20	2.2%	0.70	\$560
Average cost of doctor visits	500	49	\$24,50	1.3%	0.70	\$350
Cost of laboratory tests	1,000	49	\$49,00	2.7%	0.70	\$700
Cost of hours of care givingchildren47%	8	35640	\$285,1	15.7%	509.14	\$4,073
Cost of hours of care givingadults53%	8	39960	\$319,6	17.6%	570.86	\$4,567
Hospitalization of children 80%	7,000	26	\$182,0	10.0%	0.37	\$2,600
Hospitalization of adults 30%	7,000	11	\$77,00	4.2%	0.16	\$1,100
	0	0	\$0	0.0%	0.00	\$0
		TOTAL	\$1,816	100%		\$25,950

Total:Rs.1,816,500



Component	Cost/Unit	Units	Total Cost	Percent	Average Unit	Average
		Consumed		Total Cost	Use/Patient	Cost/Patien
Average cost of medicine	6,000	773	\$4,638	22.5%	1.00	\$6,000
Average cost of preventive diet	000, a	773	\$4,638	22.5%	1.00	\$6,000
Patients treated at medical facilities(70%)	800	773	\$618,4	3.0%	1.DO	\$800
Average cost of doctor visits	600	773	\$386,5	1.9%	1.00	\$500
Cost of laboratory tests	1,000	773	\$773,0	3.7%	1.00	\$1,000
Cost of hours of care givingchildren47%	9	392040	\$3,136	15.2%	507.17	\$4,057
Cost of hours of care givingadults53%	B	442800	\$3,542	17.2%	572.83	\$4,583
Hospitalization of children 80%	7,000	290	\$2,030	9.8%	0.38	\$2,626
Hospitalization of adults 30%	7.000	123	\$861,0	4.2%	0.16	\$1,114
		0	\$0	0.0%	0.00	\$0
		TOTAL	\$20 62	100%		\$25 680

Total:Rs.20,623,620



Number of Patient 1592]	Title =	COI of Hepatitis in District Sargodha						
Component	Cost/Unit	Units	Total Cost	Percent	Average Unit	Average			
	_	Consumed		Total Cost	Use/Patient	Cost/Patien			
Average cost of medicine	6.000	1592	\$9,652	23.1%	1.00	\$6,000			
Average cost of preventive diet	000, 3	1592	\$9,662	23.1%	1.00	\$6,000			
Patients treated at medical facilities(70%)	800	1114	\$691,2	2.2%	0.70	\$560			
Average cost of doctor visits	500	1114	\$557,0	1.3%	0.70	\$350			
Cost of laboratory lests	1,000	1114	\$1,114	2.7%	0.70	\$700			
Cost of hours of care givingchildren47%	8	807840	\$6,462	15.6%	507.44	\$4,059			
Cost of hours of care givingadults53%	8	911520	\$7,292	17.6%	572.56	\$4,581			
Hospitalization of children 80%	7,000	598	\$4,186	10.1%	0.38	\$2,629			
Hospitalization of adults 30%	7,000	263	\$1,771	4.3%	0.16	\$1,112			
	0	D	\$0	0.0%	0.00	50			
		TOTAL	\$41,37	100%		\$25,991			

Total:Rs.41,378,080



Number of Dations	1		They have a second of the	Contra Contra Contra	a thread a light of the state o	
- 123		Title =	COI of	Hepatitis	In District To	ba Tek Singh
Component	Cost/Unit	Units	Total Cost	Percent	Average Unit	Average
		Consumed		Cost	Use/Patient	Cost/Patient
Average cost of medicine	6,000	123	\$738,00	23.1%	1.00	\$6,000
Average cost of preventive diet	6,000	123	\$738,00	23.1%	1.00	\$6,000
Patients treated at medical facilities(70%)	600	86	\$68,800	2.2%	0,70	\$559
Average cost of doctor visits	500	86	\$43,000	1.3%	0.70	\$350
Cost of laboratory tests	1,000	86	\$86,000	2.7%	0.70	\$699
Cost of hours of care givingchildren47%	0	62640	\$501,1:	15.7%	509.27	\$4,074
Cost of hours of care giving-adulte53%	8	70200	\$561,60	17.6%	570.73	\$4,566
Hospitalization of children 80%	7,000	46	\$322,00	10.1%	0.37	\$2,618
Hospitalization of adults 30%	7,000	20	\$140,00	4.4%	0.16	\$1,138
	0	0	\$0	0.0%	0.00	\$0
d		TOTAL	53 198	100%		\$26 004

Total:Rs.3,198,520



Number of Patient]	Title =	COL of	Hepatitis	In District Ve	ehari
Component	Cost/Unit	Units	Total Cost	Percent	Average Unit	Average
		Consumed		Total Cost	Use/Patient	Cost/Patien
Average cost of medicine	6,000	121	\$726,0	23.1%	1.00	\$6,000
Average cost of preventive diet	6,000	121	\$726,0	23.1%	1.00	\$6,000
Patients treated at medical facilities(70%)	800	85	\$68,00	2.2%	0.70	\$662
Average cost of doctor visits	500	05	\$42,50	1.4%	0.70	\$361
Cost of laboratory tests	1,000	85	\$85,00	2.7%	0.70	\$702
Cost of hours of care givingchildren47%	8	61560	\$492,4	15.6%	508.76	\$4,070
Cost of hours of care givingadults53%	0	69120	\$552,9	17.6%	571.24	\$4,570
Hospitalization of children 80%	7,000	46	\$322,0	10.2%	0.38	\$2,661
Hospitalization of adults 30%	7,000	19	\$133,0	4.2%	0.16	\$1,099
	O O	0	\$0	0.0%	0.00	\$0
		TOTAL	\$3,147	100%		\$26,016

Total:Rs.3,147,940



Number of Patient = 23614		Title =	COI of	Hepatitis	in the Punjal	b Province
Component	Cost/Unit	Units	Total	Percent	Average Unit	Average
		Consumed		Total Cost	Use/Patient	Cost/Patient
Average cost of medicine	6,000	23614	\$141,6	23.1%	1.00	\$6,000
Average cost of preventive diet	6,000	23614	\$141,6	23.1%	1.00	\$6,000
Patients treated at medical facilities(70%)	800	16530	\$13,22	2.2%	0.70	\$560
Average cost of doctor visits	500	16530	\$8,265	1.3%	0.70	\$350
Cost of laboratory tests	1,000	16530	\$16,53	2.7%	0.70	\$700
Cost of hours of care givingchildren47%	0	11986920	\$95,89	15.6%	507.62	\$4,061
Cost of hours of care givingadults53%	B	13516200	\$108,1	17.6%	572.30	\$4,579
Hospitalization of children 80%	7.000	8879	\$62,15	10.1%	0.30	\$2,632
Hospitalization of adults 30%	7,000	3755	\$26,28	4.3%	0.16	\$1,113
	0	0	\$0	0.0%	0.00	\$0
		TOTAL	\$613.8	100%		\$25,995

Total:Rs.613,849,960



Annex 2

Health Management Information System for First Level Care Facilities PRIORITY DISEASES REPORT (PG3) Province: PUNJAB NC=New Cases TR=Total Reports Health Problems (Priority Diseases) Cases under 5 Cases Total 5 & Under 5 1-4 Total <5 % of Total NC <5 Cases % of Total NC over NC<5= 812,814 TR=11671 NC= 4,454,825 Period: Jan-Dec, 1995 260,254 05.84% 124,446 101- Diarrhea 135,808 16.7% 50,484 85,324 79,302 13,395 28,669 42,064 05.18% 121,366 02.72% 102- Dysentery 108- Poliomyelitis 2,594 0.33% 58 2,652 2,657 0.06% 2,787 113- Goiter 3,265 207 3,472 0.43% 6,259 0.14% 114- Suspected Viral Hepatitis 1,165 29 123 152 0.02% 1,317 0.03% Period: Jan-Dec, 1996 NC<5= 876,218 TR=16705 NC= 5,095,097 284,336 5.58% 139,880 16.5% 54,765 89,691 144,456 101- Diarrhea 102- Dysentery 143,262 2.81% 97,111 14,277 31,874 46,151 5.27% 108-Poliomyelitis 39 54 0.01% 109 16 70 0.00% 113- Goiter 2,329 42 192 234 0.03% 2,563 0.05% 114- Suspected Viral Hepatitis 902 201 171 372 0.04% 1,274 0.03% Period: Jan-Dec, 1997 NC<5= 1,225,255 TR=20293 NC=6,934,478 101- Diarrhea 202,236 411,035 79,365 129,434 208,799 17.0% 5.93% 102-Dysentery 159,423 235,001 23,620 51,958 75,578 6.17% 3.39% 108- Poliomyelitis 11 34 50 84 0.01% 95 0.00% 113- Goiter 2,806 196 245 0.02% 3,051 0.04% 49 114- Suspected Viral Hepatitis 81 198 0.02% 1,619 1,898 279 0.03% Period: Jan-Dec, 1998 NC<5= 2,776,380 TR=32638 NC=14,842,560 101- Diarrhea 444,349 179,294 295,359 474,653 17.1% 919,002 6.19% 333,369 497,590 102- Dysentery 52,313 111,908 164,221 05.91% 3.35% 46 25 55 80 0.00% 126 0.00% 108- Poliomyelitis 113- Goiter 3,845 0.01% 4,082 40 0.03% 197 237 4,583 148 570 718 0.03% 5,301 114- Suspected Viral Hepatitis 0.04% Period: Jan-Dec, 1999 NC<5=3,619,846 TR=35415 NC=18,986,629 542,926 101- Diarrhea 217,768 360,073 577,841 16.0% 1,120,767 5.90% 388,563 581,968 60,528 132,877 193,405 5.34% 3.07% 102- Dysentery

108- Poliomyelitis	36 23	45 128	81 151		0.00% 0.00%	24 3,588	105 3,739	0.00% 0.02%
114- Suspected Viral Hepatitis	282	762	1,044	<u>NC<5=</u>	0.03% 5.404.062	4,822	5,866 <u>TR=38055</u>	0.03% NC=27.967.006
Period: Jan-Dec, 2000	291,246	465,811	757,057		14.0%	723,780	1,480,837	5.29%
101- Dialifica				9				
102-Dysentery	88,797	189,810	278,607		05.16%	526,224	804,831	2.88%
108- Poliomyelitis	86	155	241		0.00%	47	288	0.00%
113- Goller 114- Suspected Viral Hepatitis	312	832	1,144		0.02%	5,675	6,819	0.02%
Period: Jan-Dec, 2001	347,291	586,425	933,716	<u>NC<5=</u>	<u>6,140,913</u> 15.2%	906,109	TR=38606 1,839,825	<u>NC=32,058,876</u> 5.74%
101- Diarrhea	117,043	252,407	369,450		6.02%	648,580	1,018,030	3.18%
102- Dysentery	17	67	74		0.000/	16	80	0.000/
108- Poliomyelitis	1/	206	74		0.00%	15	6 1 1 7	0.00%
113- Goiter 114- Suspected Viral Hepatitis	102	664	861		0.01%	4,576	5,437	0.02%
Period: Jan-Dec, 2002				<u>NC<5=</u>	5,651,192		<u>TR=38136</u>	NC=30,467,426
101- Diarrhea	303,940	524,502	828,442		14.7%	905,144	1,733,586	5.69%
102- Dysentery	100,116	220,092	320,208		5.67%	602,545	922,753	3.03%
108- Poliomvelitis	10	39	49		0.00%	11	60	0.00%
113- Goiter	21	260	281		0.00%	5,620	5,901	0.02%
114- Suspected Viral Hepatitis Period: Jan-Dec. 2003	135	476	611	<u>NC<5=</u>	0.01% 6 <u>,300,178</u>	3,766	4,377 <u>TR=41260</u>	0.01% NC=35,411,180
101- Diarrhea	352,010	590,357	942,367		15.0%	1,093,427	2,035,794	5.75%
102- Dysentery	116,403	247,960	364,363		5.78%	713,143	1,077,506	3.04%
108- Poliomyelitis	10	53	63		0.00%	24	87	0.00%
113- Goiter	12	284 601	296 937	2	0.00%	7,872	8,168	0.02%
Period: Jan-Dec, 2004				<u>NC<5</u> =	7,008,243	.,	<u>TR=44427</u>	NC=40,138,276
101- Diarrhea	391,532	671,677	1,063,209		15.2%	1,297,292	2,360,501	5. 58%
102- Dysentery	138,604	296,641	435,245		6.21%	803,651	1,238,896	3.09%
	11	41	52		0.00%	7	59	0.00%
108- Poliomyelitis 113- Goiter	32	445	477		0.01%	10,122	10,599	0.03%
114- Suspected Viral Hepatitis	651	989	1,640		0.02%	7,643	9,283	0.02%
Period: Jan-Dec, 2005				<u>NC<5=</u>	9,103,010	the first states - Second	<u>TR=51164</u>	NC=52,911,078
101- Diarrhea	485,174	845,062	1,330,236		14.6%	1,614,692	2,944,928	5.57%
102- Dysentery	153,252	330,594	483,846		5.32%	935,363	1,419,209	2.68%
108- Poliomyelitis	5	33	38		0.00%	23	61	0.00%
	40	378	418		0.00%	12,305	12,723	0.02%

,319,455 516,201 47	<u>NC<5</u>	<u>=9,715,890</u> 13.6% 5.31% 0.00%	1,597,701 970,821 14	TR=45152 2,917,156 1,487,022 61	<u>NC=55,217,328</u> 5,28% 2.69% 0.00%
,319,455 516,201 47	<u>NC<5</u>	5 <u>=9,715,890</u> 13.6% 5.31% 0.00%	1,597,701 970,821 14	TR=45152 2,917,156 1,487,022 61	NC=55,217,328 5.28% 2.69% 0.00%
47		0.00%	14	61	0.00%
1,388		0.01% 0.01%	115 10,659	267 12,047	0.00% 0.02%

Annex 3 (For complete data set, see the soft copy WQDATA1.doc)

			• *	•	9		1310			1				-						
	site ID	Islamabad	Year	Location	Sou	rce	Color E	жС.	Odour pl	1	Taste Tu	rbidity	AIK.	нсозе	.03	Ca i	Mg	Hard (1 0	la K
0.31		Units					uS/cm				NIU m.	mol/I	(ppm)	(ppm) (ppm)	(ppm) (ppm)	(ppm) (ppm) (ppm) (ppr
SNO		Max Permisiable unit				1			6.5-8.5		SNG	3VS	NGVS	NGVS7	5**	150**	500	250	2001	2*** 2
1	5	1 T. Well No. 193, F-6 NEFDEC Cinema	4	1	1	1	692	1	1	2	8.9	7.2	360	0	96	19	320	18	22	0.9
2	2	2 Quaid-e-Azam Uni. (Simly dam)	4	1	2	1	337	1	7.7	2	0.5	3.4	170	0	36	12	145	8	16	2.8
3	1	3 Noorpur Shahan (Simly dam)	4	1	2	192	344	1	7.7	2	0.5	.3.5	175.	0	36	14	150	7	17	2.7
4	4	4 T. Well No.37, G-5	4	1	1	1	683	1	7	2	0.1	, 7	350	0	104	16	330	16	22	1 2
5	7	5 IMCG, F-7/4 Boring	4	1	4	1	797	1	7.2	2	0.1	8.2	410	. 0	110	23	365	12	30	1.8
6	6	6 T. Well Polyclinic Hostel	4	1	1	1	673	1	7.2	2	0	6.8	340	0	102	16	320	19	21	0.8
7	8	7 T. Well No.61, G-7/3-2	4	1	1	1	639	1	7.1	2	0	6.6	330	0	96	19	320	9	12	1.7 2
8	10	8 T. Well PIMS Near Storage	4	1	1	.1	653	1	7	2	0.2	7.2	360	0	78	24	295	9	16	1,5
9	9	9 T. Well 64, St. 37, F-8/1 (New Site)	4	1	1	1	731	1	6.9	2	0.2	7.4	370	0	96	25	345	12	30	1
10	17	10 T. Well-2, E-8, GE Navy, MES off.	4	1	1	• 1	588	1	7	2	0.2	6.6	330	. 0	88	19	300	10	10	0.9
11	11	11 T. Well-200, F-9, Fatima Jinnah Park	4	1	1	1	703	1	7.2	2	0.2	7,6	380	0	74	28	300	6	39	1.7
12	13	12 T. Well-105, F-10/2	4	1	1	1	758	1	7.5	2	0	7.2	360	0	100	24	350	12	33	1.1
13	12	13 T. Well-41, G-9/3	4	1	1	1	678	1	7.2	2	0.4	7	350	0	80	17	270	12	25	1.7
14	16	14 T. Well-100, G-11/2	4	1	1	1	820	1	7.1	2	0.1	7.8	390	, 0	90	21	310	25	63	1.5 4
15	15	15 T. Well-103, F-11/3	4	1	1	1	699	1	7.2	2	2.6	6.6	330	• 0	92	22	320	31	28	1,5
16	22	16 T. Well-194, Lunda Mustan, H-11	4	1	1	1	685	- 1	7.	2	0.1	8	400	0	80	22	290	. 7	38	1.2
17	14	17 T. Well-151, G-10/2	4	1	1	1	791	1	7.1	2	0.1	7.4	370	0	94	25	335	18	43	1.5
18	20	18 T. Well-10/48, PCSIR Lab H-9	4	1	1	1	690	1	7.1	2	0	7.4	370	0	88	19	300	13	31	1.4
19	18	19 National Inst. Of Science & Tech. Edu.	4	1	1	1	752	1	7	2	0.2	7.4	370	0	102	23	350	12	28	1.6
20	19	20 T. Well-118, 1-8/2, Deep turbine	4	1	1	1	688	1	7.1	2	0.1	7.4	370	0	98	21	330	12	20	1.5
21	21	21 T. Well-139, I-9/4, Pindora	4	1	1	1	739	1	7.2	2	0.3	7,8	390	.0	98	23	340	18	29	1.5
22	23	22 T. Well-137, I-10/4	4	1	1	1	718	1	'7.1	2	0,1	7.6	380	0	90	25	335	13	29	1.5
23	3	23 7 MGR, F-5/2	4	1	5	1	319	1	7.7	2	1.4	3	150	0	34	13	140	9	9	1.8 :
24	3	24 Tap water, MoST, D Block	4	1	3	1	439	1	7.8	2	0.3	4.4	220	0	54	18	210	6	13	2.4
25	5	25 Tap water, H-2, St.15, F-6/3	4	1	3	1	323	1	7.9	2	0.1	3	150	0	38	10	135	8	13	1.7
26	7	26 H-63, Gomal Rd., E-7	4	1	6	1	466	- 1	7.8	2	0.6	4.8	240	0	58	18	220	9	13	2.7
27	6	27 H-16, St. 83, G-6/4	4	1	3	1	319	1	7.5	2	0.7	3	150	0	34	13	140	8	11	3.1
28	5	1 T. Well No. 193, F-6 NEFDEC Cinema	5	1	1	1	713	1	7	2	0.1	6.2	310	0	88	22	310	23	21	1. 3
29	2	2 Quaid-e-Azam Uni. (Simly dam)	5	1	2	1	347	1	7.6	2	4.2	2.8	140	. 0	40	15	160	. 14 .	- 11	2.7
30	1	3 Noorpur Shahan (Simly dam)	5	1	2	1	493	· 1	7.9	2	0.7	3,6	180	0	48	22	210	14	12	4.2
31	4	4 T. Well No.37, G-5	5	1	1	1	680	1	7.1	2	0.3	5.4	270	0	82	-23	300	20	26	0.8
32	7	5 IMCG, F-7/4 Boring	5	1	4	1	799	1	7.3	2	0	5,6	280	0	84	12	260	16	30	2
33	6	6 T. Well Polyclinic Hostel	5	1	1	1	680	1	7.4	2	1.7	5,2	260	0	80	19	280	18	17	1.4
34	8	7 T. Well No.61, G-7/3-2	5	1	1	1	670	1	7	2	0.1	5.2	260	0	68	22	260	14	11	1.5
35	10	8 T. Well PIMS Near Storage	5	1	1	1	688	1	7	2	0.2	5.6	280	0	96	19	320	16	16	1.7
36	9	9 T. Well 64, St. 37, F-8/1 (New Site)	5	1	1	1	783	- 1	7	2	0	5.6	280	0	80	. 24	300	21	32	1.1
37	17	10 T. Well-2, E-8, GE Navy, MES off.	5	1	1	1	618	1	7,1	2	0.9	4.8	240	0	56	24	240	14	20	1
38	11	11 T. Well-200, F-9, Fatima Jinnah Park	5	1	1	1	706	1	7.1	2	0	5.8	290	0	90	11	270	14	.40	1.7
39	13	12 T. Well-105, F-10/2	5	1	1	1	799	1	7	2	0	6.2	310	0	80	22	290	20	38	1.2 (
40	12	13 T. Well-41, G-9/3	5	1	1	1	678	1	7.2	2	0.4	7	350	0	80	17	270	12	25	1.7
41	16	14 T. Well-100, G-11/2	5	1	1	1	812	- 1	6.9	2	0	7.7	385	0	90	21	310	25	60	. 1.4
42	15	15 T. Well-103, F-11/3	5	1	1	1	.712	1	7.2	2	0.	5.8	290	0	92	17	300	18	26	1.5
43	22	16 T. Well-194, Lunda Mustan, H-11	5	1	1	1	692	1	7	2	0	6.2	310	0	52	29	250	14	34	1.2

Annex 4 Data Source: Centre for Communicable Diseases Control (CDC), Government of the Punjab

Con	solidated Surv	eillance of Dia	rrhea Data Fro	om 2001-2005	1	
District	2001	2002	2003	2004	2005	1
11 Mar 10						Average
Attock	31208	29425	34527	40075	49983	37044
Bahawlapur	77663	73225	85923	99729	49983	67308
Bhakkar	22591	21300	24994	29010	49983	29576
B.Nagar	58441	55102	64657	75046	49983	60646
Chakwal	45279	42692	50095	58144	49983	49239
D.G.Khan	46851	44173	51833	60162	49983	50600
Faisalabad	96248	90748	106484	123595	49983	93412
Gujrat	57413	54132	63519	73726	49983	59755
Gujranwala	72472	68331	80179	93063 ·	49983	72806
Hafizabad	22597	21306	25001	29018	49983	29581
Jhelum	32799	30925	36287	42118	49983	38422
Jhang	169149	159484	187138	217209	49983	117497
Kasur	43185	40718	47778	55455	49983	47424
Khanewal	7261	6846	8034	9325	49983	16290
Khushab	12232	11533	13533	15708	49983	20598
Lahore	32989	31104	36497	42362	49983	38587
Lodhran	0	0	0	0	49983	9997
Layyah	5821	5489	6440	7475	49983	10542
Multan	26410	24901	29219	33914	49983	32885
Mianwali	0	0	0	0	49983	9997
Muzafarghar	53479	50423	59167	68674	49983	56345
M.B.Din	0	0	0	0	49983	9997
Narowal	23513	22170	26014	30194	49983	30375
Okara	17627	16620	19501	22635	49983	25273
Pakpattan	21590	20356	23886	27724	49983	28708
Rawalpindi	224083	211278.	247914	287751	49983	204202
R.Yar Khan	163225	153898	180584	209601	49983	151458
Rajanpur	0	0	0	0	49983	9997
Sialkot	55058	51911	60913	70701	49983	57713
Sahiwal	45545	42942	50388	58485	49983	49469
Shiekupura	17071	16096	18887	21921	49983	24792
Sargoda	47418	44708	52460	60890	49983	51092
T.T.Singh	19800	18668	21905	25425	49983	27156
Vehari	17865	16844	19765	22941	49983	25480
TOTAL	1566885	1477349	1733522	2012079	1699416	169785

Consolidated Surveillance of Suspected hepatitis Data From 2001- 2005									
District	2001	2002	2003	2004	2005				
						Average			
Attock	47	29	24	26	42	34			
Bahawlapur	342	207	172	189	307	243			
Bhakkar	215	130	108	119	193	153			
B.Nagar	426	258	215	236	383	304			
Chakwal	602	364	304	334	542	429			
D.G.Khan	78	47	40	43	70	56			
Faisalabad	1678	1015	847	931	1509	1196			
Gujrat	2234	1351	1128	1240	2009	1592			
Gujranwala	. 0.	0	0	0	0	1592=Gujrat			
Hafizabad	266	- 161	134	147	239	189			
Jhelum	1472	890	743	816	1324	1049			
Jhang	2407	1455	1215	1335	2165	1715			
Kasur	51	31	26	28	46	36			
Khanewal	0	0	0	0	0	70=Okara			
Khushab	238	144	120	132	214	170			
Lahore	1	1	1	÷ 1	1	7962=5*Gujrat			
Lodhran	0	0	0	0	0	70=Okara			
Layyah	46	28	23	25	41	33			
Multan	50	30	25	28	45	36			
Mianwali	0	0	0	0	0	1592=Gujrat			
Muzafarghar	70	42	35	39	63	50			
M.B.Din	48	. 29	24	27	44	34			
Narowal	86	52	43	48	77	61			
Okara	98	59	50	54	88	70			
Pakpattan	77	47	39	43	69	55			
Rawalpindi	979	592	494	543	880	698			
R.Yar Khan	1184	716	598	657	1065	844			
Rajanpur	691	418	349	383	621	492			
Sialkot	154	93	78	85	139	110			
Sahiwal	7	5	4	4	7	70=Okara			
Shiekupura	1084	656	547	601	975	773			
Sargoda	0	0	0	0	0	1592=Gujrat			
T.T.Singh	173	104	87	96	155	123			
Vehari	170	103	86	94	153	121			
TOTAL	14974	9054	7559	8307	13467	23614			

Consolidated Surveillance of Dysentery Data From 2001- 2005.										
District	2001	2002	2003	2004	2005					
						Average				
Attock	7719	6997	8170	9400	1071	6671				
Bahawlapur	60755	55070	64308	73990	8432	52511				
Bhakkar	102539	92945	108536	124876	14230	88625				
B.Nagar	33171	30068	35111	40397	4604	28670				
Chakwal	9903	8976	10482	12060	1374	8559				
D.G.Khan	28995	26282	30690	35311	4024	25060				
Faisalabad	49703	45052	52609	60530	6898	42958				
Gujrat	36124	32744	38237	43993	5013	31222				
Gujranwala	51200	46409	54194	62353	7106	44252				
Hafizabad	16898	15317	17886	20579	2345	14605				
Jhelum	8203	7436	8683	9990	1138	7090				
Jhang	103255	93593	109293	125747	14330	89244				
Kasur	15318	13885	16214	18655	2126	13240				
Khanewal	4390	3979	4647	5346	609	3794				
Khushab	5612	5087	5940	6835	779	4851				
Lahore	9556	8662	10115	11638	1326	8259				
Lodhran	0	0	0	0	0	0				
Layyah	3946	3577	4177	4806	548	3411				
Multan	154288	139852	163311	187897	21412	133352				
Mianwali	0	0	0	0	0	0				
Muzafarghar	33021	29931	34952	40214	4583	28540				
M.B.Din	17840	16171	18883	21726	2476	15419				
Narowal	17686	16031	18720	21539	2454	15286				
Okara	6019	5456	6371	7330	835	5202				
Pakpattan	11612	10526	12291	14142	1612	10037				
Rawalpindi	89343	80983	94567	108805	12399	77219				
R.Yar Khan	0	0	0	0	0	0				
Rajanpur	118160	107104	125070	143899	16398	102126				
Sialkot	34568	31334	36590	42098	4797	29877				
Sahiwal	25127	22776	26597	30601	3487	21718				
Shiekupura	7369	6680	7800	8975	1023	6369				
Sargoda	24512	22218	25945	29851	3402	21186				
T.T.Singh	7811	7080	8268	9513	1084	6751				
Vehari	11111	10071	11761	13531	1542	9603				
Total	1105755	1002293	1170419	1346629	153456	955710				



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