



# **Palestinian Central Bureau of Statistics**

## **Medical Environmental Survey, 2000**

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## Concepts and Definitions

<b>Biological Treatment:</b>	Wastewater treatment employing aerobic and anaerobic microorganisms that results in decanted effluents and Separate sludge Containing microbial mass together with pollutants. Biological treatment processes are also used in combination or in conjunction with mechanical and advanced unit operations.
<b>Cesspit:</b>	A well or a pit in which night soil and other refuse is stored, constructed with either tight or porous walls.
<b>Chemical Disinfection:</b>	Chemicals used for effective killing of all organisms capable of causing infectious diseases.
<b>Chemical Treatment:</b>	Treatment methods that are used to effect the Complete breakdown of hazardous Waste in to non-toxic gases or, more frequently, to modify the chemical properties of the Waste, for example, through reduction of water solubility or neutralization of acidity or alkalinity.
<b>Chemical Waste:</b>	May be hazardous – toxic, corrosive, flammable, reactive or genotoxic (capable of altering genetic material), or non-hazardous.
<b>Clinical Waste (Medical):</b>	Any waste coming out of medical care provided in hospitals or other medical care establishments. However the definition does not include medical waste resulting from medical care at home.
<b>Disinfection:</b>	Effective killing by chemical and physical processes of all organisms capable of causing infectious diseases.
<b>Dump:</b>	Site used to dispose of solid wastes without environmental control.
<b>Environment:</b>	The totality of all the external conditions affecting the life, development and survival of an organism.
<b>Environmental protection:</b>	<p>Any activity to maintain or restore the quality of environmental media through preventing the emissions of pollutants or reducing the presence of polluting substances in the environmental media. It may consist of:</p> <ol style="list-style-type: none"><li>1. Changes in Numericalacteristics of goods and services,</li><li>2. Changes in consumption patterns,</li><li>3. Changes in production techniques,</li><li>4. Treatment or disposals in separate environmental protection facilities,</li><li>5. Recycling and prevention of degradation of the landscape and ecosystems,</li><li>6. Prevention degradation of the landscape and ecosystem.</li></ol>
<b>Establishment:</b>	An enterprise or part of an enterprise in which one group of goods and services is produced (with the possibility of having secondary activities).

<b>General waste:</b>	All non hazardous waste, similar in nature to domestic waste
<b>Hospital waste:</b>	Waste coming out of hospitals. Such waste is around 85 % non-hazardous, around 10 % are infectious, around 5% non-infectious but hazardous.
<b>Incineration (Dry Thermal Disinfection):</b>	Controlled burning of solid, liquid or gaseous waste materials at high temperatures.
<b>Infectious Waste:</b>	All kinds of waste, which may transmit viral, bacterial or parasitic diseases to human beings. It includes infectious animal waste from laboratories, slaughter- houses, veterinary practices and so on.
<b>Irradiation:</b>	Use of radiation (X rays, or gamma rays) for effective killing of all organisms capable of causing infectious diseases.
<b>Local Authority:</b>	It's a government authorized by one of the ministries to have competence for providing public services, and handling all the community affairs.
<b>Mechanical Treatment (of Medical waste):</b>	Crush, break, cut or otherwise damage of sharps prior to treatment.
<b>Mechanical Treatment (of Wastewater):</b>	Wastewater treatment of physical and mechanical nature that results in decanted effluents and Separate Sludge. Mechanical treatment processes are also used in combination with biological and advanced unit operations. Mechanical treatment includes Processes such as sedimentation and flotation.
<b>Open burning:</b>	Out door burning of wastes such as lumber, scrapped cars, textiles, sawdust and so forth.
<b>Pharmaceutical Waste:</b>	This includes pharmaceutical products. Drugs and chemicals, which have been returned from wards, have been spilled or soiled, are out of date or contaminated, or are to be discarded for any reason.
<b>Radioactive Waste:</b>	Material that contains or is contaminated with radionuclides at concentrations greater than those established as "exempt" by the competent authorities. To avoid persistent harmful effects, long-term storage is necessary, for which purpose so-called "isotope cemeteries" and abandoned quarries are used.
<b>Seperation (Segregation) :</b>	The system separation of solid waste into designated categories

<b>Sewage Network:</b>	System of collectors, pipelines, conduits and pumps to evacuate wastewater (rainwater, domestic and other wastewater) from any of the location places generation either to municipal sewage treatment plant or to a location place where wastewater is disNumericalged.
<b>Sharps:</b>	Any item that could cause a cut or puncture (especially needles and blades).
<b>Solid Waste Disposal:</b>	Ultimate deposition or placement of refuse that is not salvaged or recycled.
<b>Solid Waste:</b>	Useless and sometimes hazardous material with low liquid content, solid wastes include municipal garbage, industrial and commercial waste, sewage sludge, wastes resulting from agricultural and animal husbandry operations and other connected activities, demolition wastes and mining residues
<b>Storage of the Medical Waste:</b>	The containment of medical waste in manner that dose not constitute disposal of the medical waste.
<b>Transport of the Medical Waste:</b>	The movement of the medical waste from the point of generation to any intermediate point and finally to the point of treatment or disposal. Transport does not include the movement of medical waste from a health facility or agency to another health facility or agency for the purposes of testing and research.
<b>Treatment of the Medical Waste:</b>	Processes that modify the waste in some way before it is taken to its final resting place.
<b>Waste Collection:</b>	Collection or transport of waste to the place of treatment or disNumericalge by municipal services or similar institutions, or by public or private corporations, specialized enterprises or general government. Collection of municipal waste may be selective, that's to say carried out for a specific type of product, or undifferentiated, in other words, covering all kinds of waste at the same time.
<b>Wastewater Treatment:</b>	Process to render wastewater fit to meet environmental standards or other quality norms. Three broad types of treatment may be distinguished: mechanical, biological, and advanced.
<b>Wastewater:</b>	Used water, typically disNumericalged into the sewage system. It contains matter and bacteria in solution or suspension.
<b>Wet Thermal Disinfection:</b>	Autoclaving at 160C° under high pressure to effective killing of all organisms capable of causing infectious diseases.

## Survey Questionnaire

The environmental questionnaire was designed in accordance with the similar country experiments and according to international standards and recommendations for the most important indicators, taking into account the special situation of Palestine.

### Test the Questionnaire:

Many visits for medical establishments were made in order to improve the survey tools and to test the questionnaire before implementing the survey; consequently some modifications were made on the questionnaire and on the instructions following the visits.

## Data Set Linkage

File Name	Content	Key variable
Medicalfile1	Data of the medical Establishment	ESTAB_NO: The Number of Establishment
Medicalfile2	Medical Waste Separation	ESTAB_NO: The Number of Establishment
Medicalfile3	Medical Waste Treatment	ESTAB_NO: The Number of Establishment
Medicalfile4	Type and quantity of Medical Waste	ESTAB_NO: The Number of Establishment

## Target Population

All the Palestinian private national services establishment in the Palestinian Territory whether profit or non-profit.

## Sample and Frame

The sample is a single-stage stratified cluster random sample.

### Sampling Frame:

The Sampling frame was based on the finding of the 1997 Establishment Census conducted by PCBS, which was updated by frame modification survey 1999.

### Sample Design:

The sample of this survey is part of the sample of the Services Survey that is conducted annually. The selected establishment in the medical survey module were all medical establishment in the sample of the Services Survey and classified as private national where the national private sector or individuals owned 51% of the establishment capital or more.

**Stratification:**

Four levels of stratification were followed in designing the sample of the Services Survey including:

1. Stratification by goal: the establishment was classified to profit or non. Profit activities establishment.
2. Stratification by District: the establishment was classified to three regions, the remaining West Bank, region (j<sub>1</sub>) and Gaza strip.
3. Stratification by the economic activities.
4. Stratification by employers group.

**Sample Size:**

The sample size was 179 Palestinian Medical establishments. It was distributed according to the economic activities into 29 establishments of hospital activities, 116 establishments of medical and dental practice activities, 34 establishment of other human health activities.

### **Estimation Procedure**

The sampling weight of the establishment is the inverse of the probability to choose this establishment in the sample. This weight may be modifying after data collection to take in aquanaut the non-respond and the over coverage that refer to non-identity of the frame sample and the actual situation when the interviewers fulfill the questionnaire. The completely closed of the establishment considered as non-respond to substitute the non-coverage establishment. Because the difference between the probability to choose the establishments, we use the weight to calculate the population estimation to avoid the bias.

### **Calculation of Variance**

It is important to calculate the sampling error and to show it beside the estimates. This gives the data user an idea about the efficiency and accuracy of the estimates.

The variance calculation uses the method of Ultimate Clusters; the variance formula depends on the type of estimate (ratios, means, totals...etc.). For this purpose we use a statistical package for variance calculation called CENEVAR.

### **Reference Date**

Field operations started on 13/5/2000 and lasted until 15/7/2000.

### **Data Collecting**

The fieldwork team consisted of coordinator and the directors of the fieldwork offices and field workers, and each team consisted of supervisors and 5 field workers.

## Response Rate

Interview Result	Percent
Completed	82.7%
Completely closed	4.4%
Temporarily closed	0.6%
Did not practice any activity in this year	0.6%
Of different economic activity	0.6%
Refusal	6.1%
Other	5.0%

## Data Quality

Two types of errors affect the quality of survey data; sampling and non sampling errors. The sampling errors are measurable, however the non-sampling errors could not be determined easily due to the diversity of sources (e.g. the interviewers, respondent, editor, data entry operator... etc).

However, several measures were adopted to minimize the effects of these errors. The interviewers, editors and coders had undergone intensive training and were provided with fieldwork manuals to consult when facing any problem.

The data entry program was designed in a way that allows error detection and correction. This applies particularly to logical errors that might not be discovered before data entry operations. A consistency check was also performed to assure accuracy after data entry.