

Working Paper No.21  
3 May 2004

**ENGLISH ONLY**

**STATISTICAL COMMISSION and  
UN ECONOMIC COMMISSION FOR  
EUROPE**

**STATISTICAL OFFICE OF THE  
EUROPEAN COMMUNITIES  
(EUROSTAT)**

**CONFERENCE OF EUROPEAN  
STATISTICIANS**

**WORLD HEALTH  
ORGANIZATION (WHO)**

Joint UNECE/WHO/Eurostat Meeting  
on the Measurement of Health Status  
(Geneva, 24-26 May 2004)

**Session 3– Supporting paper**

**THE SURVEY ON “HEALTH CONDITIONS AND ACCESS TO HEALTH SERVICES”:  
AN ITALIAN EXPERIENCE**

Submitted by ISTAT (Italian National Institute of Statistics) \*

**INTRODUCTION**

The survey “Health conditions and access to health services” is one of the main sources to describe the health status of the Italian population. It gives information about perceived health status, symptoms, chronic conditions, disability and health related behavior, information which is not available from administrative data sources.

The Italian HIS is carried out every five years by Istat (Italian National Institute of Statistics) on a sample of households distributed on the whole country, using PAPI interviews; non-institutionalized civilian population is involved. The last survey was carried out in the years 1999-2000. In order to meet the emergent needs of information of local governments to support the regional planning, an over-sampling was planned for each of the twenty Italian regions. The total sample size was 60 000 households in order to provide the estimates at sub-regional level. Response rate was 86%. Considering this last experience based on a big sample size particular attention was given to the organizational structure to assure the quality of collecting data. This work gives an overview on the design and implementation of the last survey, focusing the attention on planning of the survey and field-working monitoring.

**1. AIMS AND THEORETICAL FRAME**

---

\* Paper prepared by Gianlorenzo Bagatta, Chief of Multipurpose Social Surveys, Istat and Lidia Gargiulo, Researcher referent for the National Health Interview Survey, Istat.

The Italian Health Interview Survey (HIS) is one of the instruments to monitor the National Health Plan and health regional plans. It provides useful information to state priorities in health promotion and to monitor the progress of populations' health for policy makers. Furthermore, it allows to analyze risk factors related to lifestyle factors, labour and social – economical indicators. It allows to analyze social inequities in health and in access to the health services. According to the WHO definition of health, self health status reported by citizen gives a good dimension of potential use of health services.

In order to implement the questionnaire of the last release of the Italian HIS, a scientific committee has been set up, composed by the main users<sup>1</sup> of the survey data: representatives of the Ministry of Health, of the National Institute of Health, of the regional offices involved in the health planning, Istat and the main national epidemiologic associations.

HIS gives information on the distribution of health determinants (smoking habits, overweight and obesity, etc.), for monitoring the trends, representing a very useful tool to study health promotion policies, for national and regional planning. Furthermore, different aspects of health consumption could be analyzed by groups, social status, gender and geographical aspects.

In the last years, in Italy, regional planning is becoming very relevant as local governments of have to arrange regional health system. The central Government asks that in each region the same minimum standards of health care are guaranteed.

Health indicators constructed on the basis of the same health survey could be a useful instrument to compare the different health care consumption.

## **2. IMPLEMENTATION OF THE HIS**

### *2.1. Planning the quality*

In order to design a good survey the main task is the attention to quality and the possible sources of errors in each phase of the survey, starting from the planning stage, up to the production of the results to be disseminated.

The carrying out of the survey is perceived as a unique process; it is separated into various phases, but these are strongly integrated with each other. Right from planning, the modes with which the various phases are controlled and integrated are defined, so that it is possible to intervene during the course of the work and to implement each step, taking into account what has happened previously.

The quality of information is one of the main inspiring criteria of the whole process and the main aim of the carrying out a survey. The quality refers to the quality of the service, quality of the process and quality of the outcome.

Referring to the quality of the service, in a survey the main requirements are the relevance and access. About the relevance, the adequacy and timely of the information are crucial for the validity and utility of information. Access to the information regards the possibility to obtain the information according to the needs, including also the classifications, definitions, methodology explanations, etc.

Referring to the quality of the process it is important to assure good standards in the implementation of the survey.

---

<sup>1</sup> All data analysis was reported in different publications and it is available on the Istat website. Micro-data for each validated item of questionnaire are also available for users, in respect of privacy regulations and paying a small fee.

Referring to the quality of outcome, the first task in a sample survey is the reliability of estimates. It is known that it depends on both sampling errors and non-sampling errors occurred in various phases of the survey.

In a process of the survey, generally the following phases are involved: planning the survey; sampling design; data collection: field-working monitoring; data management: codify, quality control, registration, check, correction and validation; data analysis; data reporting and dissemination. In this work planning and data collection phases for the Italian experience are considered.

## 2.2. *Planning the survey*

In the project phase the survey plan is carried out through the specification of the problem (the purposes, the informative contents, the universe of reference, the technique and the units of survey, the units of analysis and the sample are defined), the construction of the questionnaire, the definition of the methods and the tools. The latter are put into practice via working plans and control procedures for all the phases: from the sampling design to the plan of data dissemination, starting with the test of the questionnaire and the pretest and/or pilot surveys.

Various instruments are used during the planning phase of the questionnaire: informal tests, pre-tests, field-test surveys.

### - *Questionnaire*

In order to select the modules to include in the questionnaire in the last Italian HIS, new proposals of changes and new emerging needs were considered during the meetings of scientific committee.

For example, one of the main needs, coming from the regional policy makers was to know the percentage of “heavy consumers” of health services, their characteristics and their eventual non-satisfied needs. As different reference periods are used in the previous surveys to investigate the recourse to the different health services, an additional section has been introduced to construct a global indicator of access to health services, considering “last year” as reference period. This hypothesis is now testing in the pilot, for the next survey, to study the possible memory bias. International harmonization principles are also considered to select the contents of the questionnaire, but a great importance is given to the maintenance of time series for the main health indicators.

Two questionnaires were used: one for self-compilation and the other for a face to face interview of each household member.

The following table reports the main health topics included in the questionnaires.

Table: Main topics investigated in Italian Health Interview Survey 1999-2000.

<b>General background information</b>
(sex, age, occupation, education, etc.)
<b>Health and health care</b>
Self perceived health
SF12 (Short Form12)
Chronic diseases
Disability and invalidity
Acute illness
Use of medicines
Use of unconventional therapies

Medical consultations and exams
In patient care (hospitalizations)
Emergency and other health services
Pregnancy, Delivery and Breastfeeding
<b>Health behaviour</b>
Prevention
Height and weight and diet
Smoking habits
Physical activity

- *Sampling design*

The sampling design of the last survey is on two stages, with stratification in the first stage based on demographic criteria and altitude for small municipalities (units are municipalities) in each region. In the second stage, a minimum number of households are randomly selected from registers of each municipality and every member of each household is interviewed. The sample size was 60,000 households, containing around 140,000 persons, in 1463 municipalities.

- *Strategy for minimising non sampling error*

To increase the participation and minimize the unit-non responses, various strategies were implemented in the last survey.

In order to limit the refusal rate a letter from the president of Istat was sent to the respondents to explain the aim of the survey and the reasons why their collaboration is important. In this letter the selected households were ensured that the participants' privacy will be respected. The municipality's mayor also sent a letter to the respondents to introduce the interviewer.

Reasons for non participation and further information is also collected for non respondents.

A free-toll phone number was activated to provide more information to the respondents if required. It is considered to be especially effective in reassuring the households about the seriousness of the survey and in offering guarantees about confidentiality.

An accurate training was carried out to prevent non sampling errors. It is a process of communication that involves many people, such as: interviewers, supervisors, the staff who operate the free-toll phone number, etc. The aim is to increase motivation and interest transmitting techniques for the carrying out of the planned operations, and theoretical information on the concept aspects.

Standardized documents, like a protocol, were used for interviewers' instructions throughout the national territory.

### *2.3. Data collection*

For the surveys on households, the field work phase is conducted through the net of interviewers of the local authority municipality and rely on local municipalities to recruit the interviewers, to manage and to coordinate their activity during data collection, thanks to a reference person in every office of statistic of the sampled municipalities.

The organizational structure of the Italian HIS net territorially articulates on two levels:

1. a central level, composed by the technical Services, competent for the specific survey, and the structure that manages the interviewers electronic database;
2. a peripheral level that rely on local Chambers of Commerce, on local government statistical offices and on Istat regional offices.

The organization is functionally characterized by four hierarchical levels:

1. *central technical structures of Istat*;
2. *Istat regional offices*;
3. *local government offices and Chambers of Commerce*;
4. *interviewers*.

The *central technical structures of the Istat* are represented by the structures responsible for the surveys and for the interviewers' database. It starts the process of data collection arranging and delivering the circular letters for local government offices. These contain the instructions to collect data.

The *Istat regional offices* constitute the ring of conjunction between central Istat and the other intermediary organs of the net of survey; they contact the sampled municipalities; they train the survey reference person in every municipality; they perform inspections at the municipalities during the survey field work (to monitor the net and also to supply technical support); they check the activity of the interviewers (via telephone short re-interviews and inspections).

The proximity of the Istat regional offices to the intermediary organs that directly perform data collection makes them not only essential "tools" for the control of the quality of the data in the field work phase but also an important structure at territorial level for the coordination and the realization of surveys themselves.

The role of Istat regional offices assumes even more importance in the monitoring of interviewers, so as to guarantee homogeneity and quality to the productive standards within the activity of survey.

The interviewers perform interviews inside the territory of their municipality. This peculiarity, is a strength point of the organization. Their knowledge of the territory makes easier the access to the places where the interviews have to be performed, and guarantees the contact and the communication with the households in their various social contexts.

#### - *Field-working monitoring*

A new approach to monitoring field work was experimented for the survey "Health conditions and use of health services" in 1999-2000 and is based on the use of the Intranet Unix network that links the ISTAT offices throughout the country.

A three part *monitoring system* was implemented during the survey, based on an organized structure (PAPI surveyor network) and composed by the *central technical structures of the Istat* and *Istat regional offices*, to focus on the quality of field work.

This system is set up under supervision by the Regional Office and is structured on three control levels: preventive, during work progress, after work is completed.

In the first part of control (preventive) a thorough analysis of the quality indicators of the samples is carried out, to check whether there are any municipalities (first stage units) among those extracted that presented strong irregularities in the past. The data on the survey is analyzed in a historical series: previous (non-response rates, returns to the households, results of repeat telephone interviews etc.) and, in the event that some risk values are found, changes are made in the selection and training of the interviewers, or controls and inspections are carried out in loco. Extremely precise rules are given to the municipalities for the systematic extraction of the households from the public registry lists, to ensure the randomness of extraction and to avoid arbitrary or influenced selections. Before the survey begins, the selection criteria are checked, both by direct inspections while the work is being carried out and *ex post* by controlling structural parameters of the sample and some additional information.

The control during work in progress (or at the same time) regards the observance of methods, procedures and times set for the carrying out of the interviews by the municipality and

the interviewers. All the interviewers are controlled by telephone and only a small portion, less than 4% of interviews were considered irregular. This means that investing in quality pays off in terms of improvement of the entire process.

The *Istat regional offices* have had to enter questions into electronic questionnaires prepared previously, so that all the information gathered, in addition to being analyzed by the regional office itself, is also analyzed by the *central technical structures of Istat*, after being sent to them quickly via the Internet network. This occurred during the extraction phases, instruction phases and active survey phases. Analyzing the quality indicators allows corrective interventions to be made immediately, if any irregularities are found.

This system, together with telephone controls on the households interviewed, has given a new impulse to the relationship between *Istat Central Office*, the *Istat regional offices* and the municipalities. It has made Istat's interest in quality obvious and has reduced the distance between the offices spread throughout the country. This has discouraged incorrect behaviour and has allowed the creation of collaboration relationships with those operators that have accepted the possibility of collaborating with the survey with enthusiasm.

### 3. BRIEF CONCLUSIONS

Attention to quality and the control of the possible sources of non sampling errors is a big part of all the phases of the survey, starting from the planning stage, up to the production of results to be disseminated. The sharing of the planning of the questionnaire is relevant aspect to meet informational needs of both research and policy makers needs policy makers, also at local level, to plan the supply of health services.

Furthermore, as the data collection phase is a strategic stage for data quality, it is important to invest resources in this phase. In our experience, considering also the sample size, the increase of quality could derive from a monitoring system for PAPI surveys, which can provide a daily monitoring and support to the interviewers' activity.

### BIBLIOGRAPHY:

Bagatta G.L., Giusti M.V. and Perez 1998. *The Transition Process for the Implementation of the Statistical Information System on Tourist Demand in Italy* - ISTAT, Copenhagen - Denmark, 17-19 June.

Camporese R. 1998. *La Qualità nel sistema di indagini sociali Multiscopo*. Papers from the IVth National Conference on Statistics, Rome.

ISTAT 1989a. *Il questionario: progettazione, redazione e verifica*. Survey Techniques Manual, no. 2, Notes and Reports.

Coniglio R, Orrù P., Ricci M, Romano M.C. and Sabbadini L.L. 1999. *Un nuovo modo di concepire il lavoro sul campo per le indagini sulle famiglie*, for the Reflection Group, survey archive network, ISTAT.

Sabbadini L.L., Camporese R. Quattrocioni L., 2000. STRATEGIES FOR PREVENTING NON RESPONSES AND NON-SAMPLE RANGE ERRORS IN MULTISCOPE SURVEYS, SIEDS.

\*\*\*\*\*