Health Interview Survey 2008

Study Protocol

March 2009

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1 General information

1.1 Coordinates of the Sponsor

The assignment to execute the Health Interview Survey (HIS) 2008 is given by the Commission of Commissioners in the framework of the Protocol of Agreement between the Belgian Federal Government and the Authorities defined by art. 128, 130 and 135 of the Constitution. This agreement was published in the Belgisch Staatsblad/Moniteur Belge on June 5th 2007. All cabinets and administrations of all the Ministers inclined in the organization of the Health Interview Survey 2008 are represented in the Commission of Commissioners:

- Federale Overheidsdienst Volksgezondheid, Veiligheid van de Voedselketen en Leefmilieu / Service Public Fédéral Santé publique, Sécurité de la Chaîne alimentaire et Environnement (Federal government)
- Vlaams Ministerie van Welzijn, Volksgezondheid en Gezin (Flemish Community)
- Ministère des Affaires sociale et la Santé (Walloon Region)
- Ministère de l'Aide à la Jeunesses, de la Santé et de l'Enfance (French Community)
- Ministerium für Ausbildung und Beschäftigung, Soziales und Tourismus (German Community)
- Verenigd College van de Gemeenschappelijke Gemeenschapscommissie van het Brussels-Hoofdstedelijk Gewest/Collège réuni de la Commission Communautaire Communes de la Région de Bruxelles-Capitale (Brussels' Region)

For the HIS 2008 the Commission of Commissioners is extended with representatives of the Federal Public Service (FPS) Social Security, who commissioned an oversampling of the elderly population in the 2008 survey.

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2 Objective of the study

2.1 Description of the overall objective

Health information and research has been defined by the 43rd World Health Assembly (1) as a process for obtaining systematic knowledge and technology that can be used for improvement of the health of the individuals or groups of population. Health information can thus be considered as one of the tools to be used for health promotion and disease prevention.

Due to the lack of high quality and timely health data in Belgium it was decided in the nineties to develop a new tool aiming at gathering useful information for the decision makers when designing the public health programs.

Several countries facing the same problem have successfully answered this by developing health interview surveys. The pioneering countries in this domain were Canada, Denmark, The Netherlands and the United Kingdom, where the health surveys progressively became the necessary supplement to routine information systems in order to develop consistent public health policies.

Health surveys provide information on health as perceived by the population.

The added value of the health survey is the horizontal approach of the data collection: several types of information (health status, health determinants, personal characteristics, health consumption ...) are collected simultaneously for the same person. The outcome is a global picture of the health of the population allowing to identify priority domains. In addition, because the data are gathered periodically over time, changes in health as well as effects of health policies and interventions can be monitored. Health survey data also allow to obtain health information from a representative sample of the population, including persons that cannot be reached through the health services.

The HIS brings together the arguments for an increased investment in health promotion and prevention, and rationalization of health care and expenditures. This information is thus a powerful framework for a rational policy decision-making process (2).

The main objective of the HIS is consequently to give a description of the health status of the population in Belgium in general and in the three regional subpopulations (Flemish, Walloon and Brussels Region) in particular. In the HIS 2008 specific attention is also paid to the population of 75 years and older. The purpose of the HIS is to obtain information on how people experience their health, to what extent they make use of health care facilities, and how they look after their health by adopting a certain life style or relying on preventive and other health services.

The final aim of the HIS is to inform health authorities, stakeholders and researchers on various aspects of health in the population but also to influence policy and programs with surveillance data. The information collected via the HIS is not only useful at regional, community and national level but also for international instances such as Eurostat, WHO, UN, OECD …

2.2 Description of specific objectives

More specifically, the goals of the survey can be summarized as follows:

- identification of health problems
- description of the health status and health needs of the population
- estimation of prevalence and distribution of health indicators
- collection of data on health determinants
- analysis of social (in)equality in health and access to the health services

- study of health consumption (including preventive care) and its determinants
- study of possible trends in health status, lifestyle and health consumption of the population.

A HIS provides one possible channel through which such information can be obtained. On the basis of this survey, assessing a large variety of personal, social and material characteristics, life habits and conditions, determinants for public health can be traced and identified. The ultimate goal of the HIS is to be an integrated instrument in decision making, while mapping out an adequate health policy. The aim is to state priorities in policy development and to monitor the progress of populations' health.

3 Scientific relevance

3.1 Scientific background

A health survey is an investigation in which information on health related issues is systematically collected by means of interviews and/or examinations in a representative sample of the population.

Five main domains are considered in the conceptual framework of the HIS in Belgium:

- Health status
- Health determinants
- Medical prevention
- Health consumption
- Health and society

3.1.1 Health status

The HIS allows measuring the health status of the population in general and not only in relation with specific health problems. Such a difference is described in the literature as the distinction between 'health status' and 'state of the health' (3).

Even if health is the main subject matter of the survey and despite the positive approach of health recommended by the WHO, most of the domains investigated in the HIS have to deal with ill-health and diseases. A positive conceptual framework was effectively considered when elaborating the HIS but it has unfortunately not been possible to fulfill the concepts due notably to the lack of available instruments (4;5).

One of the main characteristics of the survey comes from the fact that most of the information gathered is provided by the individuals themselves with all the potential subjectivity. Their experience and their sensitivity in relation to their own health thus play a major role. It is however possible to differentiate relatively objective questions (height and weight for example) from purely subjective ones (self perceived health). Most of the topics investigated in the HIS lie between those two extremities.

Another basic concept of the HIS is the differential approach of the health status of the population related to the medically diagnosed diseases on the one side and their consequences on the functional status of the individual on the other side. Here also it is referred to the medical diagnosis declared by the person answering the question, without any objective verification of the medical records.

3.1.2 Health determinants or life style

Life styles are intrinsic components of the daily life of individuals. They are closely linked to the values and the priorities of each person, to the opportunities and constraints inherent to their culture and their socio-economic status. Life styles are in fact shaped by social acquirements and interpersonal interactions. It is thus misleading to believe that a specific behavior is only determined by a simple personal decision regarding the refusal or the adoption of health related life styles (deterministic approach).

Life styles are however health determinants: some aspects of daily life contribute to the preservation of a good state of health, the prevention of specific conditions and the improvement of psychological well-being. At the opposite, some specific behaviors are harmful to health, especially if they are excessive or chronic.

The improvement of the health of a population is more closely related to a better life style than to the progress in the field of medicine.
This is why health promotion is one of the most important components of public health programs, as is the case for the "Health for All" initiative of the WHO, that aims at improving individual health related behaviors.

3.1.3 Medical prevention

Clinicians have understood since a long time that preventive medicine plays a major role in health. Every day, they face health problems that are difficult to solve and so they are looking for opportunities that allow to proceed earlier in the disease process or even before the disease itself.

The advantages of preventive medicine have become more and more apparent in the last 30 to 40 years. This approach deeply modified the way to overcome problems such as infectious diseases (with the immunization programs for example). Early disease detection has also become an essential component of preventive medicine with striking results as far as morbidity and mortality are concerned (6).

Public health policy has progressively been enlarged from the management of health care expenditures to the development of strategies aiming at the improvement of the health of the population. Such an approach involves specific actions at the level of biological factors, physical and social environment, individual behavior but also at the level of health services in their curative and preventive components (7).

The WHO Health for All targets published in 1985 explicitly mention health promotion and diseases prevention programs as priority programs. From a conceptual point of view, three areas can be distinguished in the field of preventive medicine (7) :

- Primary prevention: actions that aim at abrogating the cause of a disease in order to avoid emergence of new cases.
- Secondary prevention: early detection and treatment of a specific disease before the occurrence of the clinical symptoms and complications.
- Tertiary prevention: it is not strictly speaking prevention of diseases, but rather trying to limit their consequences.

3.1.4 Health consumption

Information on health consumption is an essential part of the health information system in order to adapt available resources to the needs of the population.

This chapter covers the following main domains:

- ambulatory care
- institutional care
- patient satisfaction
- medical drugs consumption.

Two different methods are usually available to measure health consumption: services statistics and health surveys. However, only health surveys allow studying accessibility to care and analyze the level of health consumption in correlation with several determinants such as health status, life styles and sociodemographic characteristics.

3.1.5 Health and society

This domain focuses on the concept of health enlarged over time, progressively including non-medical components. Health has become a social phenomenon. Health and ill-health are now in relation with expectancies concerning the environment as well as familial and professional insertion.

The health status and the social level of the individual are closely linked. This can be studied through the accessibility to health care but also through the detailed analysis of health inequalities, social support, health and environment, traumatisms, violence, contact with home care and social services, quality at end of life, etc… These topics aim at giving a picture of the societal aspect of public health.

Social inequities are present in different aspects and they determine people's health. For instance, the health status improves with revenue and level of education. Other aspects that can influence the health status are for instance the living environment, traumatisms and violence, informal support and access to services.

3.1.6 Older people

There is currently a high interest in surveying older people, as "in the developed world virtually every body who is young today can confidently expect to become old in the future. This is a major change from earlier times, when higher death rates across the age spectrum meant that many did not survive past early childhood or through other hazardous periods and events (such as famines, epidemics or childbirth in the case of women)". Population ageing is driven by the so-called demographic transition, which consists of a shift from high fertility and high mortality to lower fertility and lower mortality rates. (8)
At the magnitude that we are witnessing today, this major change is an unprecedented, enduring and most likely irreversible phenomenon which has the following consequences (8):

- At individual level, people have come to expect long lifespan, which implies necessary and desirable modifications in behaviors and policies.

- At population level, ageing means a greater number of older people in relation to younger people within a population group. Ageing of the population goes with qualitative aspects: older people have different patterns of activities and changing expectations. However the behaviors and characteristics that are expected from, and associated with, older people are constantly evolving. For instance, older people pay more attention to their personal well-

being and appearance than in the past. This is sometimes labeled as active or positive ageing.

- Ageing has important implications for <u>inter-generational, intra-generational and also international equity</u>. It has significant consequences for the economy.

There are three main hypotheses regarding the changing health status of ageing populations (8) :

- the <u>compression of morbidity</u>: where people can expect to live longer and spend a shorter time affected by disease and disability. This means a decrease of years with bad quality of life and a gain in life years with good quality of life.

- the <u>expansion of morbidity</u>: where life expectancy increases but the age at which disabilities and diseases generally appear has not been postponed. This means a gain in life years with a bad quality of life.

- the <u>dynamic equilibrium</u>: where life expectancy increases and the onset of morbidity has been pushed back. This means a gain in healthy life years but no reduction of the years with bad quality of life.

During the years of life that older people live with chronic morbidity and disabilities, they will require informal and formal care services.

One of the main interest in surveying older people's health problems and their needs are:

- to plan an adequate response and access to <u>formal social and long term care</u> (or paid care, which can be public, private or from the non-profit/charitable sector), as well as adequate distribution between <u>domestic and residential care</u>. The formal care services sector lacks comprehensive statistics (8).

- to assess the burden of <u>informal care</u> (generally unpaid care given by family members, neighbors or friends) on healthy partners and younger generations. Indeed little is known about the most basic aspects of informal care such as its quantity, agency and costs (direct and opportunity cost). Usually women are involved and bear the most heavy duties. The declining family size (fewer children to look after ageing parents) in combination with rising female labor market participation rates might make informal care increasingly scarce (8). According to a recent survey (2004), approximately one-fifth of the citizen of the EU-15 member states is regularly providing informal help and care to other people living with them or outside of their household[1].

3.2 Public health relevance

A health survey allows to collect information on people's health even if they did not have any contact with health services; it is therefore a useful complementary tool to health information collected via health care services.

Most of the European countries perform surveys exclusively oriented towards health (status and consumption of care) and health determinants. The advantage of a specific health survey is that it allows a more in depth study of the health related issues, as there is no competition with other domains of investigation as it is the case in mixed surveys (9).

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[1] http://www.pedz.uni-mannheim.de/daten/edz-ma/esl/03/ef03107en.pdf

In Belgium during the period 2008-2009, in addition to the HIS 2008, several other surveys will be conducted and contain specific health topics:

- Food consumption survey for school children aged 3 to 15 years old (2010)
- Generation and Gender Panel Study (GGPS) (2008) with a module on sexual health
- Survey on Income and Living Conditions with a module of subjective health and on accessibility to health care (2008 and 2009)

The HIS in Belgium brings however broader and more complete information on various aspects of health than the surveys mentioned above. Indeed the HIS includes information on five main domains, listed here below (point 3.2.1. to 3.2.6).

The scientific background and public health relevance explaining the choice of the modules included in the HIS are further described in specific concept papers. These documents are mainly prepared for internal use but they can be made available on request.

3.2.1 Health status

Paying attention to the health status of the population is necessary in accordance to the WHO definition of health and the global approach of health problems. Measuring health consumption is indeed no longer sufficient. The HIS is consequently an essential instrument to complement the information usually collected by health care providers, registries and vital statistics.

The health status measurement of the population within the HIS is mainly focused on chronic conditions; due to their long duration, these conditions have a bigger impact on health expenditures and represent a higher burden at the population level.

The health status domain of the HIS 2008 includes the following modules:

- Subjective health
- Chronic conditions
- Mental health
- Long term limitations
- Nutritional status
- Pain

With such topics, the HIS can for instance contribute to set priorities of the Federal Ministry of Public Health. The objective for 2009-2010 is to obtain efficient information on chronic conditions in the Belgian population.

3.2.2 Health determinants or life style

It is essential for the public health decision makers as well as for the institutions in charge of the implementation of health promotion programs to regularly measure:

- the prevalence of specific health related behaviors at population level,
- their distribution in specific population subgroups and
- their trend over time.

Such measurements help evaluate prevention/promotion programs and policies. It is not possible to *prove* the relationship between a program and a specific trend in the population via health surveys, but they are nevertheless useful tools for monitoring health related behaviors.

The life style domain of the HIS 2008 includes the following modules:

- Physical activities

- Nutritional habits
- Alcohol Consumption
- Tobacco consumption
- Illegal drug consumption
- Knowledge and attitude towards HIV/AIDS

Health determinants of cancer and addictions such as alcohol, tobacco and illegal drug consumption are priorities for the Flemish and the French Community as well as for the Federal Ministry of Public Health.

3.2.3 Medical prevention

Some modules in the HIS investigate specific action in primary and secondary prevention. Several methods were used in order to select the priority actions in the domain of preventive medicine that should be included in the survey:

- The frequency of the disease but also
- the importance of the problem at the individual and social level, and
- the efficacy of the preventive methods.

The medical prevention domain of the HIS 2008 includes the following modules:

- Vaccination
- Cardiovascular prevention
- Diabetes screening
- Colorectal cancer screening
- Breast cancer screening
- Cervix cancer screening

Cancer screening is part of the priorities of the Flemish and French Community. It is also a concern for the Federal Ministry of Public Health as reported in their National Cancer Plan.

3.2.4 Health consumption

Several sources of information are accessible in Belgium for health services statistics:

- reimbursement of expenditures for medical care activities (INAMI, RIZIV), and for prescribed medical drugs (Pharmanet)
- hospital discharge records (RCM, RPM, RIM).

It is generally admitted that health services statistics are more reliable than information that comes from health surveys. This is due to the memory bias as well as the lack of medical knowledge of the individuals interviewed.

However health surveys are the only potential source of information where data are collected on different health related aspects allowing to analyze the level of health consumption in correlation with several determinants such as health status, life styles or sociodemographic characteristics.

The HIS also allows to study accessibility to care, as people not using medical care are also interviewed.

The health care consumption domain of the HIS 2008 includes the following modules:

- Contacts with health care professionals
  - Contacts with GP
  - Contacts with specialists
  - Contacts with emergency department
  - Contacts with dentist
  - Contacts with paramedics
- Hospitalization
- Contacts with practitioners of non-conventional medicine
- Patient satisfaction
- Use of medicines

3.2.5 Health and society

A health survey is an ideal tool to assess the social determinants of health as it allows to measure a large scope of indicators for combining health status, health care consumption, prevention, life style indicators with background variables such as education level, income, degree of urbanization, etc…

In 2005, the WHO Regional Office for Europe re-emphasized its key values such as the importance of equity in health and the need to recognize the social determinants of health (10).

The health and society domain of the HIS 2008 includes the following modules:

- Accessibility of health care
- Socio-economic status
- Health and environment
- Traumatisms
- Social health
- Home care services
- Social and preventive services
- Quality of end of life

These topics are relevant to survey in Belgium. For instance, environmental health is now a concern at all political levels (Federal, Communities and Region). Traumatisms and domestic accidents are part of the priorities of the French and the Flemish Community. The Federal Ministry of Health is interested in patients informal support network in the frame of the National Cancer Plan. One of their priorities for 2009-2010 is also to improve accessibility to care for patients with chronic conditions.

3.2.6 Older people

Population ageing will influence health care needs and expenditure in the coming years. However little information is available at population level on this aspect. Health status at older ages must be continuously monitored across large and representative numbers of people in order to be able to understand the ways in which the health status in older people is changing (8).

A HIS is not *a priori* the ideal tool to study specific subgroups of the population, as the sample size of a sub-group might be too small for precise estimations.

As the Belgian Federal Public Service of Social Security required more in depth information on older people from the HIS, an over-sampling of the people aged 75 years and more was organized to allow analyzing with enough precision a representative sample of the elderly population, including those living in institutions.

The specific objective of this over-sampling is to study the sub-group older people with the purpose to adapt and to organize evidence-based health policies relative to ageing.

To assess the specific problems and needs of older people, questions on limitations in daily activities, on informal care and on home care services were added to the questionnaire.

Besides, specific analyses for the older people will be made regarding the most relevant modules for this age group: the health status and the health care consumption domains, but also modules such as social health, traumatisms, vaccination, accessibility to home care and use of social care services.

An additional background variable will also be taken into account for this age group: the household situation. It includes the following categories: living alone, with a partner, with other persons or living in an institution.

4 Definitions and abbreviations

ASCII   American Standard Code for Information Interchange

CPP   Commission for the Privacy Protection ('Commissie voor de bescherming van de persoonlijke levenssfeer' – 'Commission de la protection de la vie privée')

DGSB   Directorate-general Statistics Belgium ('Algemene Directie Statistiek en Economische Informatie' – 'Direction Générale Statistique et Information économique')

FPS   Federal Public Service

HIS   Health Interview Survey

HISIS   Health Interview Survey Information System

HISIA   Health Interview Survey Interactive Analysis

ICT   Information and Communication Technology

NPR   National Population Registry

OECD   Organization for Economic Co-operation and Development

PSU   Primary Sampling Unit

QCQ   Quality Control Questionnaire

SSU   Secondary Sampling Unit

TSU   Tertiary Sampling Unit

UN   United Nations

VPN   Virtual Private Network

WHO   World Health Organization

5 Methods

5.1 Study design

Study type
The HIS 2008 is a cross-sectional study.

Study period
The survey period is 3 calendar years (HIS 2008) followed by a 2-years period for supplementary analysis (commissioners: Federal Government – Brussels' Region).

Study population
The target population of the Belgian HIS is the total population residing in Belgium. For practical reasons the study population is not completely the same. Two groups of persons are excluded from the study: persons that are not officially registered in Belgium (e.g. homeless people) and persons living and officially registered in a collective household, other than an old people's home (e.g. a psychiatric institution, a convent with more than 8 persons, a prison).

5.2 Sampling and data management

5.2.1 Sampling methodology[2]

5.2.1.1 Sampling frame
The sampling frame of the HIS 2008 consists of all households listed in the National Register. However, some households included in the sampling frame do not belong to the target population:

    (1) persons who have their official address in a prison
    (2) persons who live in an institution, with the exception of a home for elderly
    (3) persons who live in a convent or another community with more than 8 persons together.

Those types of households cannot be identified in the National Register. If selected, they are removed from the sampling frame post hoc.

5.2.1.2 Description of sampling methodology and sampling units
The sampling scheme of the households and respondents in the Belgian HIS 2008 is a combination of different sampling techniques: stratification, systematic sampling and clustering.

There is first a *regional stratification*. Belgium is divided into 3 regions, the Flemish Region, the Walloon Region and the Brussels' Region, for which the number of interviews has been predefined. The reason for this stratification is to be able to produce useful results at regional level.

There is a second *stratification* at the level of *the provinces*. This second level of stratification is done to improve the quality of the sample over a simple random method. In particular, a good geographical spread is aimed. The sample size within the provincial stratification is proportional to the population size within the province. There is the special case of the province of Liège, as the sample size of the German Community (which is geographically located in the province of Liège) has been predefined.

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[2] Detailed information on the sampling methodology of the HIS 2008 can be found in HIS\HIS2008\SAMPLING\sampling 2008 reference document.doc

Within the strata, the sampling units are accessed in two (for the households (HH)) or three (for the individuals) stages:

- within each stratum, <u>municipalities</u> are selected with a selection chance proportional to their size. These municipalities are called the *Primary Sampling Units* (PSU). Each time a PSU is selected, a <u>group</u> of 50 individuals has to be interviewed successfully.
- within each municipality, a sample of <u>households</u>, the *Secondary Sampling Units* (SSU), is drawn such that around 50 individuals per group can be interviewed in total. In this stage a *third stratification* is done, taking into account the age of the household members. The reason for this stratification is to be able to carry out an oversampling of elderly.
- within each household, at most four <u>individuals</u>, the *Tertiary Sampling Units* (TSU), are selected.

5.2.1.3 Sample size

The sample size of the HIS 2008 is specified as follows:

- a basic sample size of 10 000 persons, equally spread over the survey year;
- an oversampling of 1250 persons of 75 year and older, equally spread between two age groups: persons aged 75 to 84 years and persons aged 85 years and older;
- for the three regions of Belgium (Flemish Region, Walloon Region and Brussels Region), the number of individuals who need to be successfully interviewed is fixed: 3950, 3950 and 3350 respectively;
- the number of interviews by province is proportional to their size (to prevent problems related to the over- or under representation of some provinces by chance in the random sample);
- within the province of Liege an oversampling is agreed upon for the German Community (in the district Eupen-Malmédy). The total number of successful interviews is 300;
- in order to keep the fieldwork manageable, the number of interviews to be done in each municipality should be at least 50. Hence it was decided to work with multiples of 50 within each stratum.

5.2.2 Data collection

5.2.2.1 Definition of parameters

The content of the data collection is discussed within working groups in which the commissioners, experts and other stakeholders are represented. The final decisions and arguments are documented in concept papers that are prepared for each module of the HIS[3].

5.2.2.2 Source of information

The aim of the HIS is to obtain information from a representative sample of the total population. A document describing the technical specifications of the sampling method[4] is sent to the DGSB to allow the selection from the National Population Register of a list of households eligible for participation. The anonymised list of households is sent to the IPH for controls to be carried out (in order to check if the sample selection has been performed according to the directives) (see also 5.4). The database is then formatted and incorporated in the HISIS information system at the DGSB. This information system generates the address lists of the households that are invited to participate in the survey (see 5.4.1).

To reduce the time delay between the selection of the household from the National Population Register and the actual interview, this procedure is carried out 4 times (once per trimester), using each time an updated version of the Register.

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[3] The concept papers are found in the directory HIS\HIS2008\modules.
[4] HIS\HIS2008\Sampling\Sampling of households\Procedure sampling HIS2008.doc

5.2.2.3 Data collection procedures (fieldwork)

Network of interviewers
After having selected the target municipalities for the sampling procedure, a pool of candidate-interviewers for those particular municipalities must be brought together. Candidates are recruited in different ways: (1) from the DGSB database of interviewers that were active in previous surveys (HIS, Task Force, etc.), (2) from a database of previous candidates who never got the opportunity of actively taking part in a survey, (3) in state administrations and state-run institutions (post office, schools, hospitals, etc.) and (4) if candidates are missing in particular districts where the survey must be carried out, a new recruitment mailing is locally sent out in public or private institutions or companies.

All candidate interviewers have to follow a collective training of at least 2 hours. Before attending the training, they receive the HIS questionnaires and the detailed interview guidelines (manual[5]) which they are advised to read thoroughly. During the training sessions, different topics are explained, i.e., the aim of the survey, the rules for contacting the households, the content of the questionnaires, etc. Special attention is paid to the communication that must take place between the secretariat of the survey and the interviewers, and how to use the communication forms. Indeed, regular (weekly) contacts between the interviewers and the DGSB secretariat are crucial for optimal fieldwork surveillance, but also for the follow-up procedures of non-contactable or refusing households.

The announcement of the survey
An invitation letter[6] and an information leaflet[7] are sent to the reference person of the selected households. Households are informed that an interviewer will (try) to contact them within a fortnight period. In the data collection monitoring system (HISIS) the corresponding households are marked as 'activated'. At the same time, the list of addresses of reference persons is sent to the interviewer together with a blank communication form[8] with a list of HIS-identification numbers of the households.

Contact procedure
As soon as the interviewer receives the address list he/she starts contacting the households. This can be at doorstep or by telephone (if a phone number can be traced). Participation to the survey is not compulsory. Household may thus refuse to participate.

For every contact attempt the interviewer has to indicate on the communication form:

- The date
- The mode (at doorstep / by telephone)
- The moment of the day of the contact (in the morning / during the day / in the evening)
- The result of the contact.

After maximum 6 weeks each activated household should have a final status. This period of 6 weeks is split into 3 two-weeks intervals. After each interval the interviewer has to return to the secretariat a communication form on which (apart from the contact attempts) the current status of the household is indicated.

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[5] HIS\HIS2008\Enqueteurs\Manual\manual_int_2008_final_NL.pdf
   HIS\HIS2008\\Enqueteurs\Manual\Manual_int_2008_FR_V2.pdf
[6] HIS\HIS2008\Promotion – Press\Folder + invitation letter households\Lettre-Invitation famille_2008_NL.doc
[7] HIS\HIS2008\Promotion – Press\Folder + invitation letter households\isp-Folder Enquête 208-Nl.pdf
[8] HIS\HIS2008\questions – forms HIS2008\6. formulaires\Communication form_NL

This status can be either temporary or final. For the final status there are 5 possibilities:

- participation
- refusal
- non contactable[9]
- non eligible (e.g. selected person lives in prison)
- other (e.g. reference person has moved abroad)

If the final status of the household is not yet known at the moment the interviewer has to return his communication form, the status of the household is considered as being 'on stand by'. This occurs in the following situations:

- the interviewer has already tried to contact the household but no contact has yet been established and other attempts will take place;
- a contact was established but the willingness/reluctance of the household to participate is not yet clear;
- a contact was established and an appointment is fixed for an interview, but in a latter stage.

Selection of respondents within participating households
At most 4 members of a participating household are to be selected for the interview. In households of 4 members or less, all members are invited to participate. In households of more than 4 members, the reference person and his or her partner are always selected for interview. For the other members the interviewer will apply the 'birthday rule' procedure to select the two other persons that will be invited to participate: those two other members that have their coming birthday the closest to the date of the interview will be selected.

Substitution of households
For each selected household there are three other households in the HISIS database which present common characteristics (municipality, statistical sector, age of the reference person and number of household members) with the initially selected household. This group of four households is called a cluster. When a selected household is not participating, it is replaced by a household from the same cluster. When the cluster is exhausted a new cluster is activated.

Help desk for interviewers
A quasi-permanent help-desk is made available for interviewers in case they have questions or encounter problems. The DGSB secretariat helps to resolve logistic questions, while the IPH HIS team members help to deal with conceptual or background difficulties. Interviewers are provided with all the necessary telephone numbers to contact these help-desk assistants.

Frequently asked questions, misunderstandings, recommendations and state of the art of the fieldwork are periodically sent to the interviewers by means of a quarterly Newsletter. The newsletter is seen as a valuable instrument to communicate with the global network of interviewers, to guide them in their job and keep them informed and motivated[10].

Finally, individual feedback contacts are regularly established between the secretariat at DGSB and the different interviewers based on the actual surveillance of their work (mainly on basis of the communication forms, entrance of questionnaires, etc.).

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[9] A household is considered as non contactable if the interviewer made at least 5 attempts to contact the household of which at least one was at doorstep, at least one during the weekend and at least two outside working-hours during the week
[10] HIS\HIS2008\enquêteurs\News letters\Newsletter (1-4)

Timing

The data collection phase is spread over one calendar year, divided into 4 trimesters (see also 5.2.2.2). Interviewers are urged to execute, per trimester, all interviews scheduled for the trimester. Given the substitution procedure (which prolongs the fieldwork), interviewers are allowed to perform the interviews in the trimesters following the trimester for which the interviews were initially planned. At the end of the fourth trimester, the fieldwork phase comes to an end, regardless of the number of interviews still to be performed. In case the regional targets (number of interviews to be realized) are achieved before the end of the calendar year, the data collection phase will be stopped.

5.2.2.4 Data collection methods

The data are collected by means of paper questionnaires, partially through a face to face interview, partially through a self completed questionnaire. A proxy interview is done in the following situations: (1) if the selected person is younger than 15 years; (2) if the selected person is not able to answer personally him/herself (3) if the selected person refuses to answer personally, but agrees with a proxy-interview.

5.2.2.5 Forms/questionnaires

Three different questionnaires are used: a household questionnaire, a face to face questionnaire and a self-completion questionnaire. The household questionnaire and the face to face questionnaire are completed by the interviewer. The self-completion questionnaire is completed by the respondent him/herself. In case of a proxy interview no self-completion questionnaire has to be filled, as it is estimated that the corresponding information is too personnel to obtain valid information by proxy.

For each activated household, including the non participating households, the interviewer completes a reception form. In this form information is collected on the final status of the household: participation, refusal, non contactable or other (household cannot be identified, moved, not eligible). The reception form also provides information on the number of questionnaires that has been completed.

Communication forms are used for the follow up of the fieldwork (see 5.2.2.3).

5.2.2.6 Participation

As already indicated in 5.2.2.3 participation to the HIS is not compulsory. Promotion activities are organized via the national and local media to inform the population on the survey and stimulate participation. In addition, in some municipalities, local general practitioners and pharmacists are provided with a poster explaining the main objectives of the survey.

5.2.2.7 Data control procedures

Data are entered in a database according to the procedure discussed below. Once the data are entered in the database, a series of quality controls are performed (see 5.3 Methodology quality control)

5.2.3 Data flow and management[11]

5.2.3.1 Data entry procedures

The contents of the three questionnaires are entered with a data entry program developed in Blaise® (see 5.4). Data entry is performed in all centers of the DGSB: Brussels, Gent, Antwerpen, Charleroi and Liège. A manual for data entry operators is developed[12] and a training is organized before the start of the data entry in all DGSB centers.

5.2.3.2 Data transfer to IPH

A contract for the data transfer from DGSB to IPH has been signed between the two institutions based on the recommendation of the Commission for the Privacy Protection (CPP). IPH has access via a VPN connection to the server installed in the ICT premises of the DGSB and hosting the Blaise® program (see 5.4.2). These are coded data without identification fields such as name, or address. There is however a unique HIS ID number allowing the DGSB to verify the identification of the person.

5.2.3.3 Frequency of data collection

The data entry process in Blaise® started a few months after the start of the field data collection; it will finish at the latest 2 months after the last questionnaires are received. The Blaise® program includes a functionality to produce statistics at any time on the number of questionnaires that have been entered. Intermediate targets are agreed upon with the DGSB. A first data set is transferred to the IPH before the beginning of 2009 in order to develop the programs for the consistency checks. The final dataset is transferred to the IPH after the consistency checks are finished and the final corrections have been made.

5.2.3.4 Record identifier (research unit)

A system of unique identifier of the data has been built to allow IPH and DGSB to communicate. The household number is based on the municipality, the trimester and the cluster. The household number + the rank number listed in the household questionnaire is the record identifier at the level of the individual. It is possible for the DGSB to link this household code with the National Register number of the reference person, but this key is secured and not available at the IPH.

5.2.3.5 Data control

The Blaise® program for data entry contains several mechanisms aimed at the production of quality data; these are for instance controls of ranges and controls of coherence between different variables. The Blaise® data are exported in a text – ASCII format. At the IPH, one program file in SAS deals with:

- input of the ASCII data in SAS
- creation of different files (at level of household, individual, contacts with health services, medicines)
- allocation of data labels
- checks of consistency between information from reception form and information from questionnaires
- creation of general background variables that are not linked to one conceptual module
- creation of survey weights

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[11] Detailed information on the database management in the framework of the HIS2008 can be found in SOP 31/E/HIS-001 (HIS\HIS2008\Quality Assurance\Outputs\SOP31-E-HIS-001_data management_2008_V2.doc)
[12] See HIS\HIS2008\Data entry\Training and manual

One team member is in charge of creating the program. Another team member is in charge of the validation.

5.2.3.6 Storing and archiving

The database is stored on a database server. A backup of the database is done every day on a separated hard disk (.bak file), and this file is backed up and archived as another file (see SOP 31/E/007).

5.2.4 Data analysis

5.2.4.1 Indicator development

In the HIS 2008 there are 35 modules, each related to a conceptual domain of interest. For each conceptual domain, a concept paper exists in which a list of outcome indicators is defined. In the concept paper it is also indicated how the indicators are constructed.

5.2.4.2 Analysis plan

In order to present results that are representative for the whole population post stratification weights are calculated, taking into account population data from the National Register on age, gender, residence and household size. The analysis plan includes for each outcome indicator a presentation of crude results in function of a selected number of background indicators. According to the indicator, results are expressed as a proportion, a distribution, a mean, a median or other percentiles. Age and sex adjusted results, based on a mathematical standardization through logistic regression, are presented for all binary (adjusted proportion) and numeric (adjusted mean) indicators. For these indicators, crude results (+ 95% confidence limits) are also graphically computed by age group and sex and by year, by means of bar graphs. Further exploration of the data varies from one module to another and is described in the concept papers of the concerned module.

5.2.4.3 Software selection

All analysis are carried out in SAS version 9.1.3.

5.2.4.4 Treatment of missing values

Four types of missing variables are defined: error of interviewer, not applicable, refusal to answer, answer unknown. Missing values are not considered in the analysis. A complete case analysis is carried out.

5.2.4.5 Programming

For each module there is one program that deals with all analyses that are carried out for that module. The documentation of the programs is in line with SOP 31/E/003: "Documentation of statistical analysis program".

The presentation of the crude and adjusted results (+ 95% confidence limits) and the graphs is facilitated by making use of standard macro programs.

5.2.4.6 Inference methods

Inference is made taking into account the stratified, clustered sampling design of the survey. Survey settings are applied in all analyses for which this is indicated.

5.2.4.7 Internal and external validation

Concept papers and programs of analysis are subject to peer review within the research team that is documented in the directory \HIS2008\modules.

External validation of the macros that are developed in the framework of the project is done via external consultancy.

5.2.4.8 Presentation of results

A first report with tables with crude and adjusted results for all indicators will be available in pdf-version on the website. Results will be presented for Belgium and for each of the three Belgian regions separately.

The results will be presented more in depth in 6 separate reports: methodology, health status, life style, prevention, health consumption, and elderly. (see also 12: Communication of results and reports). Also these reports will be available in pdf-format on the website.

An interactive website will allow to produce tables that via the Internet with crude and adjusted results in function of background variables that can be selected by the user him/herself (see 5.5).

5.3 Methodology quality control

A number of control procedures are implemented throughout the execution of the survey. The following internal and/or external controls operate at different stages and sections of the methodological development:

5.3.1 Questionnaires

- Workgroups: The questions and questionnaires intended for each particular module of the HIS are discussed in workgroup sessions with scientific and academic experts, members of the health agencies and administrations, and fieldwork experts.

- Translations: Questionnaires and their translation (4 languages) are double-checked by researchers of the HIS team and members of the workgroups.

- Pre-test: The questionnaires are pre-tested. First, the adjunction of European questions in the HIS 2008 questionnaires benefited from a large scale pre-test in the framework of a collaboration between the HIS and a dental examination survey [13]. Second, the HIS questionnaire is pre-tested in a small but diversified sample of people (gender, social background, age) by the researchers themselves. They evaluate the length of the questionnaire and the time to fill it in, the comprehension and the readability of questions, the completeness of response categories, etc.

5.3.2 Sampling

- Sampling: The HIS sample is selected at random from the National Population Registry. The selection program is created at the ITC department of the DGSB. The sample database that is constituted through this program is sent to the IPH for control. Checks are performed at various levels, i.e. construction of ID number, age distribution of the reference person, correct definition of strata, number of households per cluster (4), etc.[14].

- Scrambling: The sample file produced by the DGSB is constituted with clusters of 4 successive households. Their order within a cluster are remixed (horizontal scrambling) to

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[13] HIS\HIS2008\Data registration oral health\Pretest
[14] HIS\HIS2008\Sampling\Sampling of households\check sample.sas

make sure to have a random distribution of the households. Similarly, the order of the clusters within a same group will also be remixed (vertical scrambling) in order to be sure to have a random distribution of the clusters. The horizontal and vertical scrambling is done by HISIS. The validity of the scrambling procedure carried out by HISIS is tested[15].

5.3.3 Interviewers

- Selection: candidates are selected by the IPH in function of (1) predefined criteria (having experience with survey interviews, good survey performance (if available), employment status etc.) and (2) the match between their preference ranks for municipalities and the available sample groups in these municipalities[16]. The other potential candidates are kept as reserve-candidates for the replacement of drop-outs.

- Training: the selected candidates join a two-hour training session that includes both a theoretical part (background objectives, fieldwork procedures) and a practical part (overview of the questionnaires)[17].

- Manual: the interviewers are provided a detailed guideline manual for the fieldwork, containing all aspects necessary to execute the survey correctly. The manual is also divided in two parts: (1) the survey procedures and (2) the content of the questionnaires[18].

- Fieldwork monitoring: First, the secretariat established at the DGSB supervises the work procedures of the interviewers in terms of schedule and rules for the "communication forms", number of households contacted or interviewed, etc. The HISIS database allows such surveillance. In case a problem is detected, the secretariat contacts the interviewer to see how he may solve it or if it is needed to replace the interviewer. The secretariat also assures a helpdesk function for the interviewers. Second, weekly accounts of the number of completed interviews and refusals per region, strata, etc. are sent to the IPH[19] to make sure the progress of the survey is fast enough to meet the objective of 11250 interviews by the end of a 12 months period. Actions are taken whenever problems are detected.

- Questionnaire checks: The interviewers send the completed HIS questionnaires of participating households to the DGSB centers where a first check is performed at reception. The employees verify the number of questionnaires received (regarding the expected, as noted on the reception form), the code numbers of the household members, and some basic information on the manner the questionnaires are filled in[20].

- Control of interviewers: a quality control questionnaire (QCQ)[21] regarding the work of the interviewers is addressed to all participating households as from the second quarter or from September 1st 2008 (for those remaining from the first quarter). The QCQ counts 8 questions on topics such as the manner the interviewer first contacted the household, by which means he administered the HIS questions (face-to-face interview, self-administered, telephone) and his global attitude (punctuality, availability, politeness, explications…). The QCQ is returned to the IPH with a prepaid envelope. Each incoming QCQ is checked for complaints or non-conformity and encoded in a database[22]. If a problem is identified, the interviewer is contacted to talk it over. In function of the problem, either the right procedure is re-explained, either - if justified - s/he is dismissed[23].

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[15] HIS\HIS2008\Sampling\Sampling of households\check scrambling.sas
[16] HIS\HIS2008\Enqueteurs\Quality control\ selection criteria of interviewers.doc
[17] HIS\HIS2008\Enqueteurs\Training
[18] HIS\HIS2008\Enqueteurs\Manual
[19] HIS\HIS2008\Fieldwork\(dates)
[20] HIS\HIS2008\Data entry\reception_checklist.doc
[21] HIS\HIS2008\Enqueteurs\Quality control\QControl without incentive\Questions_QControl_FR.doc
[22] HIS\HIS2008\Enqueteurs\Quality control\Controle qualite.xls
[23] HIS\HIS2008\Enqueteurs\Qualitycontrol\QControl without incentive\Procedure_QControl.doc

5.3.4 Data entry

- Training: Skilled workers perform data input in the DGSB centers. The data operators are trained to use the HIS 2008 data entry program[24].

- Program controls: Control procedures built in the data entry program allow to avoid some inconsistencies. For instance, it allows to verify whether the household number "num_mena" mentioned on the questionnaire effectively corresponds to a household that was selected (in the clustered database) and invited to participate (activation of the household is an information available in the fieldwork database). Furthermore, the data input program is constructed in such a way that the data entry is 'guided': every question has a variable field and every variable for which a value should be entered is set with an upper and a lower limit value, making it impossible to introduce values that exceed the specified range. The data entry program blocks or masks entry fields on the basis of information obtained from linked variables (e.g. jumps due to gender: it is impossible to introduce data for men in question-fields designed for women).

- Pre-test: The data entry program is pre-tested by HIS team members; it is then set on the DGSB network for a try-out period where the operators encode real questionnaires. Errors or inconsistencies found in the program are notified to the programmer at the IPH by e-mail and corrected. After 1 month, the try-out database is emptied and the true data entry starts.

- Manual: Guidelines are available for the data entry operators[25].

5.3.5 Data management

- Vertical control: Once the data are entered in the database, a series of quality controls are performed. During the vertical control, it is checked whether all information is available for all activated households. The presence of data for non-activated households is – in theory – not possible since the list of activated households serves as a key-element in the creation of fields for the data input (it is impossible to enter data on households in case they are not listed in the list of activated households). The absence of data for activated households or possible differences with the data derived from the reception forms is the core of the vertical control. In case of a difference, the secretariat has to search the source of the errors (manual check of questionnaires, check reception of the questionnaires, re-contact the interviewers,…)

- Horizontal control: Next to the vertical controls, it is necessary to control for internal consistency of the data (through SAS programs developed by HIS researchers per module). Inconsistencies in the data entail going back to the paper-questionnaires for verification. Inconsistencies in data may arise from confusion due to the respondent himself, errors caused by the interviewers or errors introduced during data entry. Inconsistencies due to the respondents themselves or caused by interviewers are treated during the analysis (statistical programs for data cleaning). On the other hand, inconsistencies due to data entry errors (discrepancy between questionnaires and encoded data) are corrected in the database.

- Data analysis: As stated above, respondent's contradictions or interviewers' mistakes are dealt with in the data cleaning process before the statistical analysis. Besides, standard and specific statistical analyses are performed for reporting results of the survey. Statistical experts (department of biostatistics, UHasselt) are consulted to ensure the validity of methods, calculation of weights, etc. The programs for both the data cleaning and the analysis are created by the HIS researcher responsible for the given module and systematically verified by another designated HIS researcher.

- Results: The tables of results and the explanative texts produced for a module (= draft version) undergoes internal as well as external revision. Internal review is done within the

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[24] HIS\HIS2008\Data entry\Training_data-entry_V1.doc
[25] HIS\HIS2008\Data entry\ manual data entry_V2_fr.doc

HIS team, while external experts in a given domain assure the external review of the module(s).

5.4 Software development

For the field work and the data entry, two software programs are developed:

- Health interview survey information system (HISIS)
- Data entry program

5.4.1 Health interview survey information system (HISIS)

After drawing the samples (4 times per year), the selected households and their attribution to the interviewers need to be managed. Also all the information concerning the fieldwork needs to be integrated completely. This work can be executed with the HISIS-application[26], which is installed at the DGSB and permits:

- Importing the sample: Because the samples contain sensible data, they need to be treated at the DGSB. When a sample is drawn, it needs to be imported in HISIS first, before it can be treated. This treatment means mixing in a random way the households of the same cluster and the clusters of the same group; then selecting the first households (based on a cut off point) and finally preparing a file with the addresses of the households (this file contains the reference persons, but also the number of household members by age group). The principle is that one household per cluster[27] needs to participate to the HIS. If a household refuses to participate, it will be replaced by another household of the same cluster. If the 4 households of a cluster are exhausted, a replacement cluster is provided.

- Managing the households: At the beginning of every trimester, after integration of the sample in HISIS, an invitation letter is send to the selected households. At the same time, the interviewers receive their list with households and the communication form. The interviewers need to send back regularly (max after 15 days) this communication form to the DGSB, as well as the completed questionnaires. The data of the communication form are encoded in HISIS so the status of the households can be adapted to: participation, refusal, non contactable, non eligible or in stand by. If necessary (in case of refusal and no contact, non eligible), the system can generate a new list with substitute households, so the same procedure can take place. Also the number of interviews completed can be registered in this system. Afterwards a list with an overview of the communication forms encoded can be visualized.

- Managing the interviewers: The list of the interviewers (name and address) is included in the HISIS and this system attributes a code to each interviewer. A "group" (of 50 interviews to be achieved in a given municipality) is manually assigned to the interviewer. When interviewers abandon their work definitely (drop out), this has to be indicated in the system. In that case, another interviewer (reserve) needs to take over this group. When interviewers are not available for a while (sickness, vacation…), then this period needs to be indicated in the system too, so the mailing to the households can be blocked for that period. The mailing will be restarted a week before this block. At any moment the availability of the interviewers and other information (comments, date of sending back the communication form) can be visualized. Besides this system permits to indicate incoherencies in the information supplied by the interviewer, of what the interviewer can immediately be informed.

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[26] More detailed information of this application can be found in the following document: HIS\HIS2008\DATA ENTRY\HISIS_BLAISE_DOCUMENTATION.

[27] 225 groups (≈municipalities) in Belgium are randomly selected for the survey. Each group is a compilation of clusters and each cluster contains 4 "equivalent" households.

- Receiving the questionnaires: The interviewers have to send back the 3 types of questionnaire (household, face-to-face and self-completion questionnaire) for every participating household to the DGSB centers together with the reception form for defining the final status of every activated household as well as the number of questionnaires filled in by each participating household member. The number of questionnaires received for a given household should correspond to the information from the reception form. The management of the reception of questionnaires permits to follow up the evolution of the fieldwork of the survey and to make the invoice.

- Payment of the interviewers: The interviewers are paid every trimester for every completed (face-to-face) questionnaire, taking into account that all the households (or substitute households) are finished.

- Additional options: bringing out some statistics (for the commissioners) such as the response rate, the number of readily encoded questionnaires,…; sending a small questionnaire to the participating households for the quality control of the work of the interviewers; after analyzing the data, the participating households will also receive a summary of the results.

By using HISIS, it is possible to use one central database where all the information concerning the fieldwork can be adapted and followed up permanently. To summarize, the central idea is that as soon as a household is invited to participate to the survey, it can be followed up through the different phases of the fieldwork.

Technical information: the choice was made to use the system of Microsoft SQLServer 2005, expand with a browser of the type Internet Explorer, and the framework .NET with ASP.NET to develop this Intranet application. Used tool: Visual studio 2005.

5.4.2 Data entry program
This application is developed to encode the answers of the questionnaires of the HIS 2008. More information can be found in the same directory as mentioned in point 1 HISIS.

- Practical organization: Different encoders work at the same time in the different DGSB centers (Brussels, Liège, Charleroi, Gent and Antwerpen). The encoder first enter the information concerning the household (the household questionnaire) and then the information of the members of that household (the face-to-face questionnaires(s) and, if any, the self-completion questionnaire(s)).

- Technical choice: Because the system of 2004 was too heavy (web based, developed as HISIS, and consequently very slow to encode), it is replaced with another client server system, from which the efficiency is proven, to develop the data entry program: Blaise® 4.7 (also used by the CBS of The Netherlands). A server containing this tool and the databases is installed at the DGSB. Shortcuts to this application are added to the desktop of the encoders' PC. The encoders share the application and the databases.

- Operation: This tool, well adapted for big surveys such as the HIS, permits to implement the rules of the questionnaires to enter the data: proxy (some questions in face-to-face questionnaire and the self-completion questionnaire are not allowed for proxy), filter (to define the target group of a module), jump (depending on the response, certain questions can be skipped), type of questions (open, semi-open, closed questions, multiple response), limiting the number of values,…. These rules are very useful to limit the number of errors when entering the data. This encoding system can easily be managed by the encoders: the forms on the screen are similar to the paper forms and the passage from one field to another is smooth.

- Extraction of the data: The data from encoding the questionnaires needs to be exported in an adequate format. Preliminary databases are useful for consistency control and preparation of the final analysis programs. The database generated in Blaise® has a specific format, but extraction in other formats is possible (ex. TXT). The generation is done

in 2 steps: 1) extraction of the data and 2) extraction of the variables as sas, spss…
format[28]. The advantage of extracting the data in a SAS format is that not only the variables
and their values are recovered, but also the questions.

5.5 Website

Information on all editions of the HIS (including the HIS 2008) can be found on the website.

English: http://www.iph.fgov.be/epidemio/epien/index4.htm (shortcut: www.healthsurvey.be)
French: http://www.iph.fgov.be/epidemio/epifr/index4.htm (shortcut: www.enquetesante.be)
Dutch: http://www.iph.fgov.be/epidemio/epinl/index4.htm (shortcut: www.gezondheidsenquete.be)

Furthermore a dynamic website is available that allows to compute a wide range of indicators in
function of different background variables. It is called "Health Interview Survey Interactive Analysis
(HISIA)".

- Objective: The objective is to develop a flexible web-based application in order to facilitate
  the access and to enhance the use of the statistics generated from the HIS performed in
  Belgium, for scientific research and public health policy, but also for a broad range of the
  potential users.

- Principle: The principle is to rationalize the statistical programs for calculating health
  indicators and run those automatically through parameterization on the Internet in an
  interactive way.

- General description: The package SAS/IntrNet™ was used to create web-based
  application. In practice this means that the user first chooses the necessary parameters via
  the *menu* system on the Internet browser. The selected parameters pass from the html-
  form to the SAS® system, where the corresponding *databases* and *statistical procedures*
  are invoked via macros. Finally, the browser will display the results generated (*dynamic
  reports*).
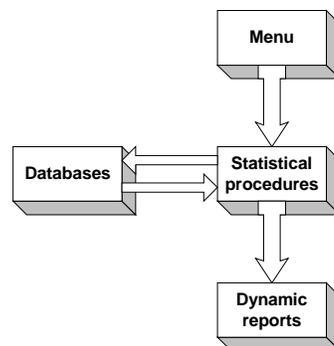
This application is interactive. Pre-defined procedures accessible through menus make it
very user-friendly, as it does not require any preliminary knowledge of the statistical
package. The results are readily available.

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[28] for a more detailed description see also HIS\HIS2008\Data entry\ HISIS_BLAISE_DOCUMENTATION \manipulation
des données encodées.doc

- Practical implementation:

  o *Homepage*

  The software package Dreamweaver® is used to create/update the homepage of HISIA (index.htm) and its related pages. These related pages can be a registration form (registration.htm) but also instructions for the use of the procedures (use.htm) to a description of the background variables (backvar.htm). These files can be found in the directory: **CROSP ON 'EPI_2' OR W:\HIS\HIS2008\WEBSITE\HISIA.**

  In these pages, a link is made to the different interactive webpages. They are structured according to the main chapters (health status, life style, prevention medical consumption, health & society and elderly), followed by the related modules.

  o *Interactive webpages*

  An interactive webpage is developed for each module (mental health, nutritional habits, smoking, hospitalization…). The menu system of each webpage has the same structure: first select an indicator, select year, select geographical level, and select no/one/two parameters. Only the structure of the module "Chronic conditions (specific)" (chrondis.sas) differs slightly from the others because when selecting an indicator a sub-choice will appear. These files, with the menu system and the underlying structure, are drawing up with HTML in SAS (access.sas to waitlist.sas) and are stored in: **I:\PROG\HISWEB**[29].

  o *Databases*

  There are different types of data stored in the directory **I:\DATA\HISWEB**. First there are 2 databases to execute the analysis. It concerns the HIS-databases on individual level (datahis.sas7bdat) and that on the level of the household (datahh.sas7bdat).

  This directory also contains excel-files to create the lists of the menu system: indicat.xls, year.xls, geograph.xls, param1.xls and param2.xls. These excel-files must imported to create the necessary sas-files (see point 4). Indicat.xls is a file with all the indicators by module. This is a special file, because it stores a lot of information: it is not only used to draw up the first menu list, but it also contains a field with the title and the footnote which will be put in the outcome table. Moreover it also contains fields where links are made with the available year for each indicator, for which age (0 yr, 15 yrs or 65 yrs) the indicator is available, what type of indicator it is (ordinal, binary or continuous indicator) and if the indicator exists on individual or household level. Depending on which indicator is chosen in the menu system, the corresponding years and background variables (concerning age) are shown in the following selection choices and also the corresponding database and analysis are invoked in the programs. A field with a link to the format of the indicator is foreseen.

  o *Statistical procedures*

  All the necessary programs are stored in the directory **I:\PROG\HISWEB\PRIMARY**.

  The file import.sas is necessary to export the excel files to sas files which then can be used for the menu lists. Beware: this program is closely related with the development of the interactive webpages (point 2).

  The file start.sas needs to be run first because this file defines the libnames and refers to the formats, which are defined in format.sas. This latter file contains formats as well for the background variables as for the indicators.

  In the webpages (point 2) a link is made to the program "paramet.sas". This is the first program that will run. This program invokes two other macro-programs (m_year and m_param) and depending on the choices made in the menu system other programs from there on will be invoked. The structure is a sort of tree diagram. The last program in the tree will be the program with the statistical procedures. This program will finally show the results.

- URL: http://www.iph.fgov.be/epidemio/hisia

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[29] 'I' refers to: Internet on 'Epi31sas2005\Userdata'

6 Scientific review

The commissioners of the HIS research project designate a Scientific Steering Committee, as stipulated in the inter-governmental convention for the organization of the HIS[30].

The Scientific Steering Committee gathers representatives of universities and other institutions linked to the HIS as well as a delegation of the Commissioners[31].

The Scientific Committee ensures a follow-up of the HIS in successive stages of its completion: the Committee is consulted to reflect upon the type of approach used, the sampling procedures, the questionnaires, the health related indicators used in the analysis, the statistical analysis and reporting.

Members of the Scientific Committee participate in the elaboration of the questionnaires in the framework of working group sessions at the start of the survey[32].

During the HIS fieldwork, the Scientific Committee is solicited in two different ways, i.e. through:

- Newsletters: when information relative to the state of affairs is transmitted from IPH to the Committee[33].
- Meetings: when advice or input from the Committee is needed on part of IPH. Invitations, presentations and minutes of the meetings are documented[34].

Members of the Scientific Committee are also invited to work on the final report of HIS results:

- They are asked to check the tables of results and suggest other indicators or analyses;
- They are asked to review the text of the report and draw conclusions from the results.

7 Organization of the research project

7.1 Starting and completion date

The project consists of different phases:

- Preparation phase: 01.01.2007 – 31.12.2007
- Fieldwork phase (data collection). The fieldwork phase was initially scheduled to start 01.01.2008 and to continue up to 31.12.2008. Due to administrative problems the start of the survey was postponed to May 2008. Consequently data collection was postponed up to the end of May 2009.
- Analyzing, reporting phase. Initially the analyzing and reporting phase was scheduled from 01.01.2009 till 31.12.2009. The delay in the start of the fieldwork phase necessitates to postpone the reporting phase. It has been agreed upon in the Commission of Commissioners of the survey to present to the Commission all basic tables at the latest on 31.12.2009. During the first months of 2010, specific reports describing distinct results will be presented to the Commission and to the public (see 12. Communication of the results and reports).
- Supplementary analysis phase (commissioners: Federal Government – Brussels' Region): 01.01.201. – 31.12.2011.

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[30] HIS\HIS2004\Budget\protocole_2008.doc, article 1.2.3.
[31] HIS\HIS2008\Meetings\Steering\MembersHISsteering 200609.xls
[32] HIS\HIS2008\Working groups
[33] HIS\HIS2008\Meetings\Steering\Newsletter\
[34] HIS\HIS2008\Meetings\Steering*.doc

7.2 Timetable

See at the end of this document.

7.3 Subcontracting

Since IPH has no direct access to the data of the National Register (that serves as a sampling frame), IPH has to sign an agreement with the DGSB that has a direct access. DGSB can collaborate with IPH based on:

- An approval of the High Council of Statistics.
- An approval of the Commission for the Privacy Protection for what concerns the data transfer (results of the survey) from DGSB to IPH.

Plans are also made to get a statistical support from a university center during the data analysis. A call for proposal will be launched in early 2009 for the selection of the center.

8 Resources

8.1 Team

The Scientific Institute of Public Health (IPH), Brussels, is in charge of the study. The main responsibility is with the Unit of Epidemiology. Several people of this unit are involved at different levels:

- Mr S. Demarest   Sociologist, Researcher
- Ms S. Drieskens   Research Assistant
- Ms L. Gisle   Psychologist, Researcher
- Ms E. Hesse   Medical Doctor, Researcher
- Ms M. Schoonenburg   Polyvalent Project Assistant
- Mr J. Tafforeau   Medical Doctor, Study Director
- Mr J. Van der Heyden   Medical Doctor, Researcher
- Mr H. Van Oyen   Head of Unit

In addition, the activity of the team is supported by the management unit of the IPH, the accountancy department, the communication cell and the ICT Unit.

8.2 Availability of space and material

The HIS team is based in the buildings of the Epidemiology Unit of IPH (Kroonlaan 310, 1050 Brussels) in 4 different offices.

Specifically for the HIS 2008 project two servers have been installed in the ICT unit of the Ministry of Economic Affairs at the North Gate. This unit is in charge of the ICT solutions for the DGSB. One server hosts the HISIS ASP.net application used for the management of the fieldwork (see 5.4.1). The second server is used for the data entry which is operated via the Blaise® application (see 5.4.2).

The secretariat in charge of the survey fieldwork coordination is installed in the DGSB premises. Three DGSB secretaries take care of this work under the responsibility of the IPH Polyvalent Project Assistant.

8.3 Budget plan and funding

The budget of the survey was negotiated with the commissioners. It is split in 3 different parts:

1. Common funding of the survey implementation
2. Additional data collection for elderly people
3. Additional funding for in depth data analysis

8.3.1 Survey implementation

This funding covers a period of 3 years; it results from the collaboration between all the ministries in charge of public health in Belgium (see 1. General Information). The total budget for this period is 1.414.264 € among which the major budget lines are:

- 809.387 € for the personnel
- 280.000 € for the interviews
- 250.000 € for a sub contract with the DGSB

The supply shared between the different partners was established in the framework of an inter-ministerial agreement protocol.

8.3.2 Elderly people

An oversampling of elderly people was asked by the Ministry of Social Affairs. This extra data collection will be covered by an additional grant of 100.000 € for the fieldwork.

8.3.3 In depth data analysis

Two partners (among which the Federal Ministry of Health and the Brussels Region) decided to support the HIS team of the IPH for two additional years with the main purpose of carrying out in depth analysis of the HIS data. The funding of 524.391 € mainly covers personnel costs.

8.4 Security

Access to documents and databases related to the project is restricted to the HIS team members. They are the only ones that have access to the drive .epi_2_crosp_ihe on 'Epi2' (w:\).

9 Risk and benefits for participants (including privacy protection)

It is essential to insure that research participants are not harmed physically or psychologically during the conduct of research.

The risk of harm to those who take part in an epidemiological investigation like the HIS is limited. The greatest risk to individuals could be caused through the disclosure of personal data.

On the other hand, participants gain no direct personal benefit in participating to the HIS. In recognition of their participation, they should thus be treated well and with respect. Respect for individuals in research entails informing them correctly about the research purpose and subject, obtaining their consent to participate or accepting their right to refuse to participate.

- Information to participants and consent: Formal written consent is unnecessary if the research is carried out in settings that pose no threat to the potential participants, when it is stated that taking part is voluntary and it is obvious that no benefits are at risk of being lost if potential participants refuse to take part. This situation arises in studies such as the HIS, based on questionnaires or interviews where providing the data involves giving *de facto* consent.

    - Basically, households that are selected to participate to the HIS receive notification about the survey, its practical organization, the institution in charge, the commissioners of the survey and the contents via a letter and an information leaflet personally addressed to them[35].

    - It is clearly stipulated that participation is voluntary. An e-mail address, Internet website and telephone number at the IPH are clearly indicated on the leaflet if selected households need further information or want to withdraw. Potential participants can also ask more about the survey or refuse to participate at the moment the interviewer contacts them to ask their consent and make an appointment.

    - As stated in the leaflet, a summary of results is communicated by mail to all participating households to express our gratitude for having taken part at the survey.

- Respect of confidentiality of the collected data and their management: Measures are taken in the HIS to ensure that the researchers cannot identify the participants of the survey. A first series of protection measures is that IPH researchers do not have access to the names, addresses or national register number of selected households, which are kept at the secretariat of DGSB for fieldwork management. Only coded data are transferred to the IPH researchers.

    - Interviewers sign a confidentiality clause that is inserted in their contract. Interviewers are forbidden to disclose any information gathered during the interview to a third party36.

    - The employees responsible for encoding the HIS data at the DGSB are submitted by Decree (M.B. 20.07.62 §2) to an obligation of professional secrecy concerning personal information.

    - Researchers have an obligation of confidentiality by contract or by status. Besides, only the researchers implied in the HIS team have access to the data (protected network emplacement).

    - External researchers, who purchase the coded HIS database (in a restricted form) to perform scientific analysis, sign a bilateral contract including amongst other a confidentiality clause and an obligation to renounce to identify individuals or transfer the dataset to a third party[37].

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[35] HIS\HIS2008\Promotion - Press\Folder + invitation letter households
[36] A prototype of contract can be found in HIS\HIS2008\Enqueteurs\Contrat-assurance-inasti\contrat_enq2008.doc
[37] See HIS 2004 prototype contracts: W:\HIS\HIS2004\External users\CD-rom contrats\contrat_CDrom_2004_fr.doc.

- Finally, all results are divulged in an aggregated format (tables of statistics, graphs) that impedes recognition of individuals (See reports on website: www.healthsurvey.be).

The HIS 2008 research protocol was submitted to – and approved by – the Superior Council of Statistics[38].

The HIS2008 research protocol was not submitted to the Ethical Committee of the IPH, because it is a recurrent project and this protocol did not substantially differ from the previous HIS (2004) protocol, which had been submitted and approved. Moreover, the comments that the Committee had formulated with regard to the HIS 2004 were as much as possible integrated in the protocol of HIS 2008[39].

Finally, the Commission for the Protection of Private Life (CPP) confirmed that the HIS database encoded at the DGSB can be transferred to the IPH in the conditions stipulated in the HIS protocol and following the recommendation delivered on part of the CPP in this respect (Délibération STAT n°3/2008 du 19 mars 2008). These can be summarized as follows:

- a confidentiality agreement is established between the DGSB and the IPH;
- the coded data are kept for maximum 4 years and destroyed after this delay (unless they are completely anonymised);
- the IPH must inform (declare) the CPP about the data treatment before applying it
- a 'security advisor' must be appointed (either at the FPS or IPH);
- a list of persons that can access the data must be delivered as well as the specific treatment each one may operate on the data (creation, consultation, modification, destruction…);
- …

10 Propriety rights of study material and results

All data gathered by means of the survey is in principal the property of the Commission of Commissioners.

The data are encoded at the DGSB. A transfer of the coded data from DGSB to IPH was approved by the CPP for statistical treatment. A series of data protection measures have to be implemented to ensure safety of the data.

The results that stem from the analysis of the HIS 2008 data are first communicated to the Commissioners (owners of the data) by means of periodic reports and presentations.

Results are then communicated to the public through press conferences and by placing the reports on the HIS Website. Participants personally receive a summary of main results.

Finally, results are presented to the scientific community through peer reviewed publications and conferences.

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[38] HIS\HIS2008\GeneralDirection-Statistics\HighCouncil\Notifications R.P.2007-3 (26-09-2007) - Fr.doc
[39] HIS\HIS2004\Privacy_ethics\ETHIC COMMITTEE\

11 Client satisfaction

11.1 Identification of the clients

The HIS project has two types of clients: the *Commissioners* of the survey and the *external users* of the data. The Commissioners are described in 1.1.

The IPH can, under certain conditions provide the HIS dataset to external users, public administrations, universities and other research institutes.

The list of external users for the previous surveys (1997, 2001 and 2004) can be found on the web site.

IPH can also perform specific analysis upon request for individuals or institutions; those are also potential clients.

11.2 Contacts with the clients

Commissioners

The Commission of Commissioners is informed on 'the state of the art' of the HIS project[40] at least every 6 months. They also receive a financial report and an activity report once a year. The Commission is systematically consulted to agree on the :

- budget for the project
- content of the HIS questionnaire
- content of the final report, including the indicators' selection.
- the content of the press release concerning the results of the survey
- sharing HIS data with external users that are not linked to a university or a public administration

In addition, the Inter-ministerial Conference on Public Health is informed twice a year about the work progress[41]. They are also consulted when important decisions are to be taken in relation to the management of the survey.

External users

The conditions for external users to obtain the dataset are described in documents available under menu "databases" on the HIS Internet site: http://www.iph.fgov.be/epidemio/epien/index4.htm

One document called "document d'information générale d'utilisation" describes the HIS, the context and the conditions under which the data are made available to external users, and practicalities to obtain the data.

Another document called "protocole pour l'utilisation des données de l'Enquête de Santé par Interview, Belgique" goes more into details about access modalities, aims and limitations of using the HIS data, authors rights, quality control, publications, validity period and prices.

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[40] the minutes of the meetings with the Commission of Commissioners can be found in the directory : W:\HIS\HIS2008\Meetings\Com Com
[41] the minutes of the meetings with the communication to the Inter-ministerial Conference can be found in the directory : W:\HIS\HIS2008\Meetings\Interminiterial

The last document available is called « formulaire de demande". This document has to be completed and sent back to the IPH by the external user who wish to use the HIS data for a given project. Based on this document, a contract is prepared and has to be signed by an authorized person in the institution who made the request, as well as by the director of IPH[42].

At the moment of the first 'release' of the data (via CD-rom or through a download from the IPH website) all interested external users are invited to join a training session on the use of the HIS database.

The HIS database goes along with a user manual that describes the survey methods, the main domains explored in the survey (chapters and modules) and the list of health indicators readily available. The database and the manual are stored under the following directory: CROSP ON 'EPI_2' OR W:\HIS\HIS2008\Database.

11.3 Treatment of complaints

Commissioners

For commissioners, complaints expressed during the meetings of the Commission, will be mentioned in the minutes of the meeting. The follow up of the actions taken in response to a complaint will be reported in the following meetings.

A letter has also been sent to the Commissioners informing them that any complaint in relation to the HIS project can be directly addressed to the director of the IPH. When appropriate, a document from the quality assurance called FORM 03/FN/01401 will be completed and followed up.

Recommendations for this procedure are given in the document "Gestion des non-conformités, actions préventives et plaintes externes" available in the following intranet page: https://intranet.iph.fgov.be/quality/epidemiotoxicology/epidemiology/index.asp.

Those complaints are managed by the quality insurance officer in close collaboration with the HIS team[43].

External users

For external users, complaints can be addressed to the HIS team directly via a help desk[44].

They can also follow the official procedure under the quality insurance system described above; those complaints are managed by the quality insurance officer in close collaboration with the HIS team[45].

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[42] Contracts signed for HIS 2004 are stored under the following directory: CROSP ON 'EPI_2' OR W:\HIS\HIS2004\External users\CD-rom contracts. For HIS 2008 they will be under: W:\HIS\HIS2008\External Users.
[43] The documentation about those complaints will be kept under the directory: CROSP ON 'EPI_2' OR W:\HIS\HIS2008\Quality Assurance.
[44] They are reported under the directory: CROSP ON 'EPI_2' OR W:\HIS\HIS2008\External Users
[45] The documentation about those complaints will be kept under the directory: CROSP ON 'EPI_2' OR W:\HIS\HIS2008\Quality Assurance

12 Communication of results and reports

The final goal of the HIS is not merely to draw a picture of the overall health status of the Belgian population. The HIS is above all designed to serve a wider purpose, that is, to provide scientific information to the decision makers and politicians in order to promote adequate health policies and practices as well as to establish health-oriented regulations. Furthermore, the study is also meant to supply the scientific community with a wide-ranging set of health-related data for an in-depth analysis of particular topics. Finally the Health Survey results can also be used to make the general population aware about health issues and health determinants.

Reporting mechanism

The general reports

In line with the main goal of the survey, the following useful information for the decision makers in public health will be provided to the commissioners:

- Tables of results on all investigated health indicators (delivered within 12 months after the end of the fieldwork - December 2009).
- Book 1. Report on the HIS 2008 methodology (January 2010)
- Book 2. Report based on the HIS 2008 results on health status (January 2010)
- Book 3. Report on life styles (February 2010)
- Book 4. Report on prevention (March 2010)
- Book 5. Report on health care consumption (April 2010)
- Book 6. Report on health and society (May 2010)
- Book 7. Report on older persons (June 2010)

The results are reported for the whole of Belgium, as well as independently for the three regions of the country. The reports will be made available in Dutch and French.

The methodological report (first book) includes information on the commissioners, the objectives of the HIS, its contents, the sampling procedures, the fieldwork organization, the participation level and an introduction to the results.

Book 2 to 6 are subdivided in several modules referring to the particular health topics examined within these broad domains of investigation.

Each module contains at least the following information:

(1) Summary of the results,
(2) Acknowledgements
(3) Introduction to the studied issue,
(4) Detailed description of the instrument and questions used,
(5) Description of the health or health related indicators,
(6) Presentation of the results
(7) Practical conclusions. This latter point is developed jointly with representatives of the commissioners and policy makers, as they have the opportunity to give their suggestions before the finalization of the report.
(8) Bibliography.

Book 7 is similar to the others, but focuses on a selection of indicators particularly relevant for older people.

For ecological and financial reasons, printouts of the reports are limited (one copy for each commissioner), but the full electronic report (in a PDF form) is made available on the IPH website (http://www.iph.fgov.be/epidemio/epifr/index4.htm in French and "…/epinl/index4.htm" in Dutch).

Publication plan: peer-reviewed publications and others

While the report prepared for the Commissioners is basically descriptive, further in depth analysis exploring the associations between variables remains an important issue to look into. The HIS database will be further analyzed by the HIS team at the IPH.

The results of the additional analyses are presented – as an oral presentation or poster – during scientific conferences, symposiums, national and international meetings. They are also published in scientific journals. An up-dated list of publications can be found on the HIS website.

External users

The HIS data are also made available for use and in depth analyses by external users (see chapter 11 conditions), i.e. in research projects from academic or ministerial instances.

A specific database will be created for external users. In this database, some variables will be removed (e.g. statistical sector, date of birth) or aggregated (e.g. age).

The datasets will be made available in a general CSV format that can be read by all statistical software packages. Files will include information at 4 levels:

(1) household level,
(2) individual level,
(3) contact level with the health care professionals and
(4) medicine consumption level.

These files will include the indicators calculated in 2008 as well as the source 2008 variables; in addition, the data from HIS 1997, HIS 2001 and HIS 2004 will be provided if they match the HIS 2008 variables and indicators.

The database comes together with further information:

- Labels of variables and indicators in three languages (French, Dutch, English);
- Guidelines for exploitation of the data, in terms of linkage between data files, use of weights, content of the database and construction of the indicators;
- Conversion tables to help compare the variables and indicators of the successive surveys;
- A "read-me" file, which explains the structural organization of the data, the key variables for linking the different datasets, a help-desk phone number, etc.;
- An "update" file indicating the changes/corrections brought to each new version of the database.

Other forms of communication of results

To meet the diffusion objectives more broadly, the results of the HIS are made available and published in different formats (i.e., reports, summaries, folders, press release, power point presentations, interactive database, etc.). Most of these can be found on the Internet site of the IPH. The format of the presentation is adapted to the target population:

<u>Policy makers and other stake holders</u>

Slide presentation: results of the survey by topics.

<u>Media and the general public</u>

Press release, conferences and/or interviews.

<u>Internet website</u>

All relevant HIS issues and material are available to the public on the website of the Institute at the following address:

- in French: http://www.iph.fgov.be/epidemio/epifr/index4.htm
- in Dutch: http://www.iph.fgov.be/epidemio/epinl/index4.htm

Information displayed on the Internet is related to :

- study protocol
- partners involved
- source of financing
- level of achievement
- ongoing research projects
- existing publications
- convention and demand forms for the use of the database
- etc.

Further details regarding the successive surveys are presented: objectives and methodology of the survey, questionnaires used, reporting of the results, etc.

Beside this "static" presentation of results, an interactive and user-friendly data analysis module is available for more specific data analysis (see 5.5).

<u>Participating households</u>

A leaflet describing the results in lay terms is sent out to the families that took part in the survey, together with warm greetings for their participation. The interviewers who worked for the HIS also receive an exemplar of this leaflet.

13 Archiving process

13.1 Data management

All the HIS documents and data files are kept on the CROSP Volume of the SQL2005 server. At the start of each new HIS project a new subdirectory is created. Each HIS is classified with reference to the year it is accomplished (1997 – 2000 – 2004 – 2008).

The structure of the computer files' storage system used for the HIS is documented in SOP 31/E/HIS-002: "Management on electronic documents[46].

Archiving of all the files is done via the general archiving process of the epidemiology unit: a daily backup on a separated hard disk (.bak file), and this file is backed up and archived as another file.

13.2 Documents

The original contracts with the commissioners are stored by the RP/PJ. The completed HIS questionnaires are stocked at the central office of the DGSB for at least 5 years (according to the available place). The contracts with the interviewers and the contracts with the external users are kept in files in the Unit of Epidemiology (room 48).

14 References

(1) Research strategies for health based on the technical discussions at the 43th World Health Assembly on the role of health research in the strategy for Health for All by the year 2000. New York: Lewiston, 2008.

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(10) Whitehead M, Dahlgren G. Levelling up (part 1) : a discussion paper on concepts and principles for tackling social inequities in health. 1-30. 2006. Denmark, WHO Europe. Studies on social and economic determinants of population health, n°2.

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[46] W:\HIS\HIS2008\QualityAssurance\Officialdocs\002=SOP_31-E-HIS-002=Management_of_electronic_documents =ed3=05-12-2008.pdf

ANNEX 1: HIS 2008: TIMETABLE AND MILESTONES

1. TIMETABLE AND MILESTONES (1)

		2007 : preparatory phase												2008 : fieldwork phase												2009 : reporting phase											
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
		Jan	Feb	Mar	April	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	April	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	April	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
T1	Steering and coordination																																				
T2	Conceptual development																M11																				
T3	Quality assurance																																				
T4	Administrative procedures						M1				M4								M13												M17						
T5	Collaboration NIS									M3																											
T6	Development questionnaires									M2		M5																									
T7	Sampling procedures												M6																								
T8	Network of interviewers												M7																								
T9	Implementation of fieldwork												M8													M14											
T10	Data entry														M9												M15										
T11	Data management																	M12												M16							
T12	Data analysis																M10														M18						
T13	Final reporting																																				
T14	Interactive website																M10																				

M1 : Contracts with commissioners for 2007 signed
M2 : Final questionnaire ready
M3 : Modalities of collaboration with DGSB clear and agreed upon
M4 : Contract with DGSB signed
M5 : Questionnaires printed
M6 : Database with sampled households available in DGSB
M7 : Network of trained interviewers operational

M8 : Secretariat installed at DGSB and operational
M9 : Data entry program installed at DGSB
M10 : Software application to develop macro's for analyses/interactive website tested
M11 : Conceptual papers finalized
M12 : First data transfer to IPH
M13 : Contracts with commissioners for 2008 signed
M14 : All questionnaires available in DGSB

M15 : Data entry and checks finished
M16 : Final dataset for report ready
M17 : Contracts with commissioners for 2009 signed
M18 : All macros needed to create output for report ready
M19 : Database for CD-rom/website ready
M20 : Final report ready
M21 : Interactive website ready
M22: In dept analysis ready

2. TIMETABLE AND MILESTONES (2)

		2010: reporting phase/in dept analysis												2011: in dept analysis											
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
		Jan	Feb	Mar	April	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	April	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
T1	Steering and coordination																								
T2	Conceptual development																								
T3	Quality assurance																								
T4	Administrative procedures																								
T5	Collaboration DGSB																								
T6	Development questionnaires																								
T7	Sampling procedures																								
T8	Network of interviewers																								
T9	Implementation of fieldwork																								
T10	Data entry																								
T11	Data management							M19																	
T12	Data analysis																								M22
T13	Final reporting						M20																		
T14	Interactive website						M21																		

M1 : Contracts with commissioners for 2007 signed
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M16 : Final dataset for report ready
M17 : Contracts with commissioners for 2009 signed
M18 : All macros needed to create output for report ready
M19 : Database for CD-rom/website ready
M20 : Final report ready
M21 : Interactive website ready
M22: In dept analysis ready

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