



1. Survey planning and management

Päivikki Koponen¹, Hanna Tolonen¹, Arpo Aromaa¹,
Kari Kuulasmaa¹

¹ National Institute for Health and Welfare (THL), Helsinki, Finland

High quality planning and management are the keys to achieving the survey's objectives. The planning process ensures that the survey can be effectively implemented in the shortest reasonable time, within the budget and with the highest quality that is affordable and consistent with the aims and purposes (Franklin & Walker 2003). All survey plans need to be repeatedly overhauled depending on the progress of action. This requires efficient management. This chapter focuses on national activities in the planning and preparation of the national surveys, in particular survey management.

1.1 Survey process

The first step in planning and preparation includes defining the aims and purpose of the survey. These will be the basis for selecting the topics and actions in the data collection. They will also guide the decisions on how the EHES standards will be implemented in the national survey. The aims and purposes of the national survey will rely on national and European level health policies, and information needs. National health care systems, previous health surveys and expertise available in the country will also affect the feasibility of different options for carrying out the survey. All decisions need to be made in the context of previous national HIS and HES, as well as other major health surveys in each country. If there are other national surveys, such as surveys on nutrition, lifestyles or health behaviour, or other health interview surveys, the HES needs to be timed and tailored to fit in the national health survey system. An evaluation of already existing data sources is needed to define if the HES is the best way to collect the data. As the national HESs are anticipated to be repeated with regular intervals, the survey planning process needs

to be ongoing with experiences and results on previous surveys leading to the next phase of data collection (Figure 1.1).

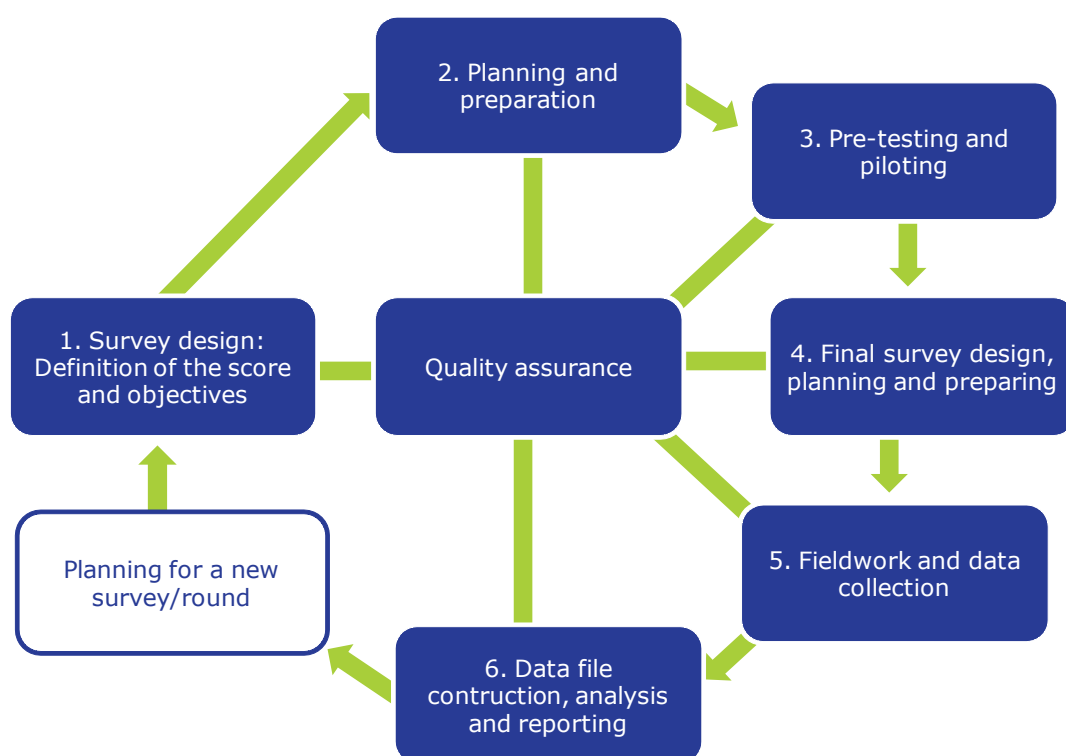


Figure 1.1 Stages in the survey process (stages adapted from Franklin & Walker 2003, Czaja & Blair 2005)

Six main stages in the survey process are shown in Figure 1.1. Even though these stages in survey planning, preparation, fieldwork, data processing and analysis as well as reporting proceed after each other, there is a need to return to previous stages throughout the survey process to adapt the plans according to experiences and feedback from different experts and stakeholders.

- The output of the stage 1 of the planning of the survey is the first version of the survey proposal. Commitment from key organizations such as the ministry and the national public health institute, national statistical institute and other relevant organizations can be sought based on these preliminary plans and ideas. The survey management structure is also defined as well as a preliminary time schedule for the survey.
- Stage 2 includes the detailed planning of the sampling, survey contents, fieldwork and data collection, data management as well as a preliminary plan for analysis and reporting. The output is a detailed survey plan with the budget and a first draft of the survey manual including the questionnaires, and measurement protocols, and other materials (information leaflets, consent

forms etc). Ethical approval is sought based on the detailed proposal.

- Stage 3 includes pretesting and piloting. After this the proposals and manuals, as well as all survey materials (including the computer programs, survey web-sites as well as communication plans) can be finalized.
- Stage 4 sets up the fieldwork and data collection system. Specific attention should be given to motivation of participants. The fieldwork staff can be hired and trained, first invitations can be launched and first appointments to the interviews and examinations can be scheduled.
- Stage 5 includes the proper fieldwork and data collection. Some changes and adaptations to original plans may still be needed, e.g. if participation rates in the first weeks are low or if other problems are faced.
- Stage 6 includes finalizing the data sets, documenting data characteristics and quality, the data analysis, as well as reporting and disseminating results.
- Quality assurance is essential throughout the survey process (see Part A, Chapter 11 of the EHES Manual).

1.2 Aims and purpose of the survey

Clearly defined and specified aims and purposes guide the survey planning and fieldwork. Time spent in the development of specific aims is time saved in the design of survey instruments and measurements (Biemer & Lyber 2003). There are typically interests to include several topics, instruments and measurements in the survey, but all of them are not feasible due to limited time and other resources. The purpose of the survey depends on national needs and uses of health information, e.g. implementation of the ECHI indicators (see www.echim.org). Relevant and valid health information is needed for evidence based health policy, rational planning and evaluation of health promotion and disease prevention programmes, and health services. In each country the objectives of the survey should take into account ongoing or planned national health promotion programmes and key challenges in developing health services to meet the needs of all population groups. Monitoring and forecasting the population's health and health determinants are prerequisites for sound evidence based public health policy, directing and designing health programmes and services as well as social security. HESs can enhance knowledge on health determinants, health needs and population health. The information from a HES is typically used to:

- assess the prevalence of major diseases and their risk factors;
- assess health status and its association with health promotion and disease prevention;
- measure change at an individual (if follow up of the participants is possible) and population level (with regularly repeated surveys);
- predict future health status in the population, based on objective information on major chronic disease risk factors (such as blood lipid levels, obesity);
- analyze equity in health, health care and well being by providing objective data, comparable in all groups in the population;
- estimate met and unmet need for health care, social security benefits and rehabilitation, and to forecast future scenarios concerning the need for health care and social security benefits;
- develop national standards and reference values for the measurements;
- develop a valuable data source for epidemiological studies and health sciences research.

The aims of HESs should be specified and evaluated against other potential sources of health information in each country, such as health interview surveys and administrative registers. This evaluation will show the added potential of HESs to retrieve health information. A HES provides exclusive data on many topics such as disease risk factors not available in any other source. Also, HESs can result in comparable data for many health indicators which are known to differ between countries and between socioeconomic groups. The standardized measurements of health examinations can overcome reporting bias, e.g. the tendency to over-report height and under report weight (Gillium & Sempos 2005, Elgar & Stewart 2008). HESs can also reveal shortcomings in the awareness of risk factors, e.g. having high blood pressure (Kastarainen et al 2009, Ostchega et al 2008). HESs provide population prevalence data also in situations where such data cannot be obtained from routine registers because of limited access and use of health services. For example, routine registers reveal diabetes or cardiovascular disease only in those who have used services and been diagnosed (Gnavi et al 2008, Elo & Karlberg 2009).

The scope of the core EHES is limited to the health of the adult population, as both children and the elderly have their own specific health problems, health risks and protective factors, often requiring specific measurements. Surveys among children and the elderly also have their own challenges in regard to survey

ethics and fieldwork practices, which is why the EHES standards are at first targeted to adult health surveys. The EHES survey can be extended to also cover the elderly as the core measurements are feasible with similar methods among the elderly, but their specific needs should be taken into account (e.g. inclusion of institutionalized persons, scheduling appointments, and consent among those with cognitive disabilities). Age-group specific measurements and other additions will be developed later and included in the EHES Manual.

1.3 Implementing EHES standards in national surveys

Countries may implement the EHES standards within one of the following options: 1) building a new national HES, 2) synchronizing EHES standards with the existing HES, or 3) incorporating an existing national HIS with the EHES standards (Tolonen et al 2008). There are three alternatives:

1. When building a new national HES without any (recent) prior HESs in the country, the planning and implementation of the survey should be based on the EHES standards. The challenge for the planning and preparation is to set up the survey using the European standards in the national circumstances. National experts need to decide which of the options in this manual are most feasible in their country, taking into account how these choices affect the comparability of data.
2. When synchronizing EHES module(s) and standards with an existing national HES (incorporating the EHES module(s) into the previous national modules), the challenges are balancing the need to follow national time trends and to ensure European comparability. A specific pilot study may be needed to compare results from examinations carried by different protocols. Some measurements and/or questions may need to be administered to the same respondents in two different ways.
3. When combining the EHES with a national HIS, the challenge is in organizing the data collection successfully and minimizing selection bias. This approach may lead to a survey with several phases in the data collection. Everybody in the sample (i.e. not only the respondents of the HIS) should be invited to the HES. There are several examples showing that inviting only the participants to previous phases leads to a diminishing participation rate for HES. The HES phase should

be used for complementing lacking HIS information in HIS nonparticipants.

A HES always includes a questionnaire or interview. Sometimes the questionnaires and interviews may be very extensive and time-consuming. For example, if the survey includes the full EHIS questionnaire, then the HES serves also the needs of EHIS and national HIS.

Other options may also be considered in some countries and the feasibility of these need to be evaluated. Some countries may wish to undertake pilots of collecting information through national health screening services, where a certain age group is invited to screening examinations carried out in primary health care. It can be decided only after the evaluation of the EHES pilots whether such screenings can be standardized to produce data that meets the EHES quality criteria. Key issues in the feasibility of screenings for national health monitoring purposes are their coverage at population level (assuring the representativeness and avoiding selection bias), and standardization of the measurements (e.g. local premises, equipment and training of personnel).

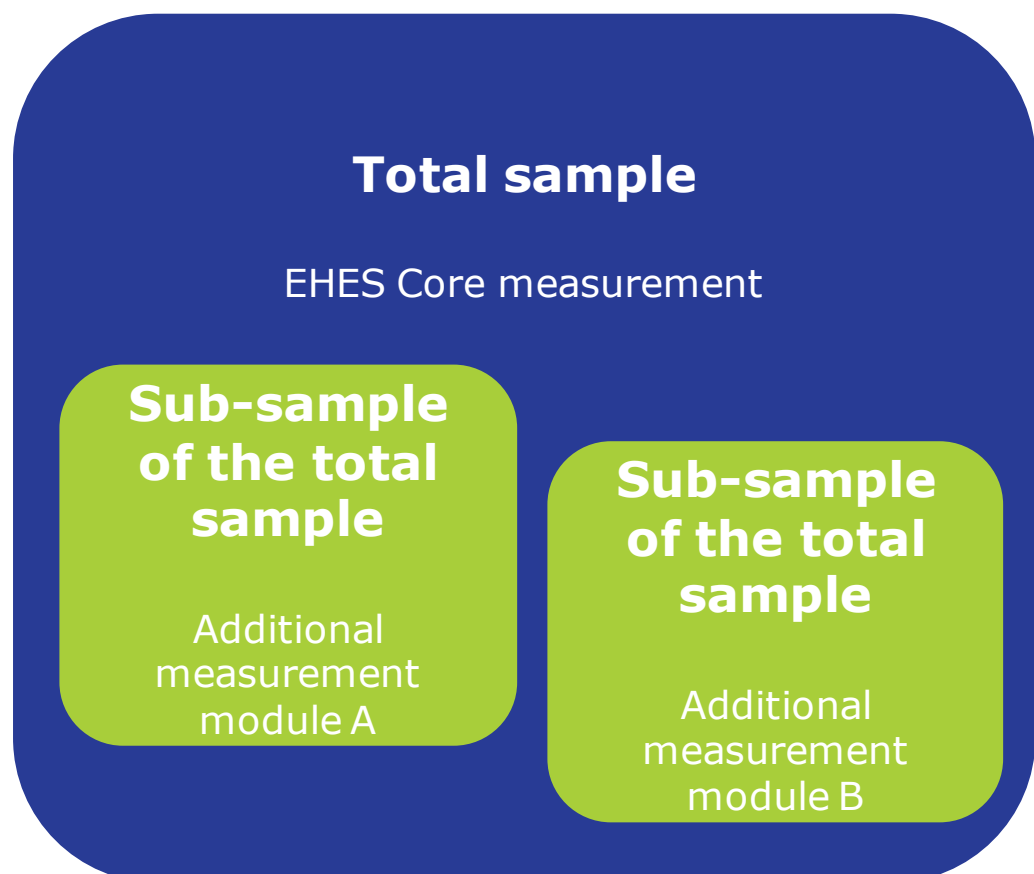


Figure 1.2. Example of a modular structure in the survey

A modular structure can be considered if the survey covers several additional topics which are not relevant or feasible to all population groups (Figure 1.2). These modules will need to be taken into account in the survey management and fieldwork logistics. There may be additional measurement modules e.g. an on functional ability for those aged 65 and over. An additional measurement module for a sub-sample may include e.g. a time consuming mental health interview or a dental examination which is not feasible for the total sample due to limited resources.

1.4 Survey management

Often an interdisciplinary survey team is given responsibility for the planning, design, implementation and evaluation of the survey. A core group of key experts is needed to ensure that different aspects are taken into account. In addition, many other experts are needed, and within larger survey organizations their work needs to be organized in different teams, led by members of the core group or others closely involved in the survey. In smaller survey organizations various experts may be consulted without involving them in the actual survey organization. Various types of expertise should include:

- Policy experts to define the needs and use of data for evidence based health policy and to use the results for these purposes;
- Health care and other public service professionals to define the needs of data for planning and evaluating health services and health promotion activities and to use the results for these purposes;
- Scientists in the fields of epidemiology, statistics, public health, other health sciences, social sciences etc. to define the use of the data for scientific research purposes;
- Other experts, such as experts in fieldwork logistics and supervision, laboratory issues, data management, information technology, communication and dissemination etc. to make sure that the data collection runs without problems and to assure high quality data.

It is also recommended to involve different stakeholders such as ministries (e.g. health and research), social insurance organizations, and non governmental organizations to express their interests for the survey, to promote the survey for fund raising and raising interest among the population to participate, and to disseminate the results.

1.4.1. Management structure

The organizational responsibilities of a HES can be divided into (adapted from Tolonen et al 2002):

1. Planning: Definition of the objectives and scope of the survey, planning and preparing the fieldwork and other survey operation.
2. Operation: Implementation and operation of systems for data collection (fieldwork) and data processing.
3. Quality assurance: An authority (if needed independent of the logistics operations) that monitors performance, provides feedback, and ensures that the results are within predefined quality limits.

Planning and operation are most often lead by the same organization, while in some countries e.g. the Ministry or National Public Health Institute are responsible for planning while the organization responsible for the operation is selected from competing organizations. It also needs to be decided in each country if there is a need to carry out the quality assurance by an organization or persons without vested interest in the survey, but with adequate knowledge of the process and methods.

A clear management structure of the survey helps to:

- ensure that the set objects can be met;
- make planning and implementation of the survey more efficient;
- increase the quality of the entire survey;
- decrease the cost of the entire survey.

An example of the management structure of a national HES is given in Figure 1.3.

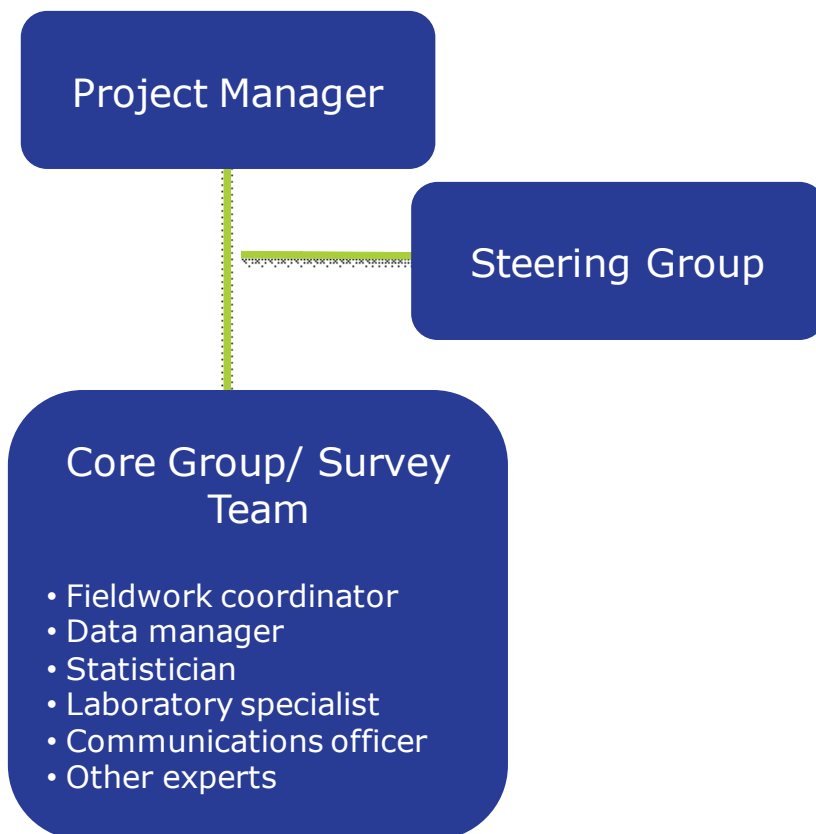


Figure 1.3. An example of a survey project organization in a survey including EHES core measurements and in a more comprehensive survey with several additional measurements

In the example, the different groups and persons have the following tasks:

- The Steering Committee (or a Steering Group) approves the survey objectives, and provides directions and guidelines to meet these aims. It represents is the agency(ies) responsible for the survey and monitors the progress of the survey.
- The Project Manager runs the survey. He/she is directly responsible for the Steering Committee, and his/her responsibilities cannot be shared by other experts. The Project Manager is responsible for:
 - the organization of the survey by allocating responsibilities and resources and by making sure that all areas are covered and that there is no overlap between the responsibilities of different experts;
 - managing the survey process by making decisions, giving guidance, providing and acquiring assistance, motivating team members and solving possible conflicts;

- day-to-day monitoring and evaluation of the survey process, schedules and budget and making adjustments to these when needed;
- reporting to the Steering Committee.
- The Core group assists the Project Manager. It consists of key experts, selected from the Team Leaders, with specific responsibility for coordination of fieldwork, statistical issues, and data management.
- Survey Teams: Different subareas of the survey are planned and implemented in larger surveys by different Survey Teams, led by the Team Leaders. In smaller surveys there may be only single experts in each area, or one expert is covering several areas of expertise. The teams or experts cover different areas of expertise, such as sampling, fieldwork, laboratory issues, communication and quality assurance, as well as different topics of the survey (e.g. blood pressure monitoring, nutrition).

Key experts and tasks in the survey project organization include:

- a fieldwork co-ordinator or fieldwork team. In larger studies a full time fieldwork coordinator is needed to share the workload of the Project Manager. The fieldwork team is led by the fieldwork co-ordinator and the team will prepare the fieldwork logistics, training and day to day data collection activities.
- a data management expert, when needed supported by the IT team. They are responsible for the computer systems and programs, and the data management:
- a person responsible for the laboratory activities, when needed supported by the laboratory team responsible for the sample collection, analysis and storage;
- in larger studies a quality assurance team may be needed for the quality assurance activities.
- a survey statistician or a team of statisticians with specific expertise on sampling or data analysis;
- a person with expertise in survey ethics and a communications specialist may need to be consulted or invited to the fieldwork team.

Some of the tasks may be carried out under a short-term contract (e.g. computer systems, data entry, printing, mailing) or by contracting out some functions to an external organization. The roles and responsibilities of these persons/teams may vary between countries due to legislation and differences in organization

structures. Legislation in many countries calls for a chief physician in any study classified as medical research. The roles of the fieldwork co-ordinator and chief physician may be combined.

If the survey team is large and if the survey covers different data collection phases, and/or several topics or modules, it may be useful to have special teams devoted also to each topic area (Figure 1.4). Such topic specific teams should propose questionnaire instruments and measurements for their areas of expertise, participate in the training of the fieldworkers, as well as plan and carry out special studies. All these experts and teams are needed throughout the survey process. When fruitful collaboration is built during the planning and preparation, the members of these expert groups are a valuable resource for e.g. training of the fieldwork staff, quality control during the fieldwork, data analysis and reporting.

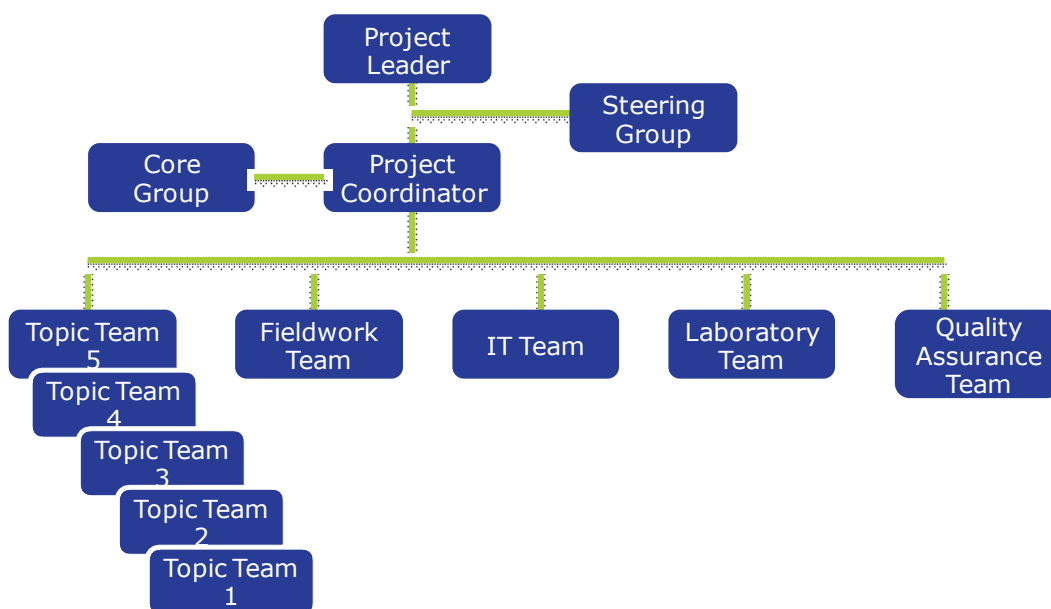


Figure 1.4. An example of a survey project organization in a comprehensive survey including EHES core measurements and several additional measurements

1.4.2. Management tools

It is essential to ensure that there is enough time for different phases of the survey process. The planning and preparation will usually require at least one year before the fieldwork can be started (Figure 1.5). If there is no recent (within last 5-10 years) or only little experience of a previous survey in the country, the planning and preparation for a full scale HES requires a longer period of time.

As collaboration between several organizations and teams is needed, the detailed planning and preparation may benefit from

using specific project planning tools and software to define the project timeline in Gantt Charts and to prepare Critical Path Analysis. Gantt Charts are a type of bar charts that illustrate a project schedule. They show the start and finish dates of the key tasks and activities (Figure 1.5). The Critical Path Analysis (CPA) helps to plan all tasks that must be completed during the survey process (Figure 1.6). CPA acts as the basis both for preparation of a schedule, and of resource planning. It identifies which tasks must be completed on time for the whole survey to be completed on time and identifies which tasks can be delayed if resources need to be reallocated.

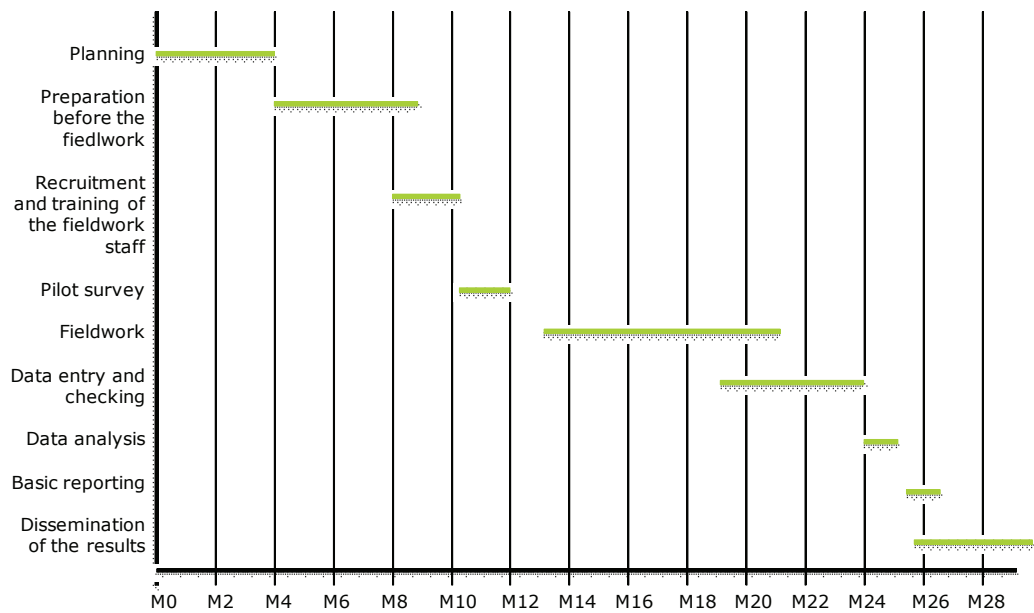


Figure 1.5 Gantt chart of the survey, providing the timeframe for the survey

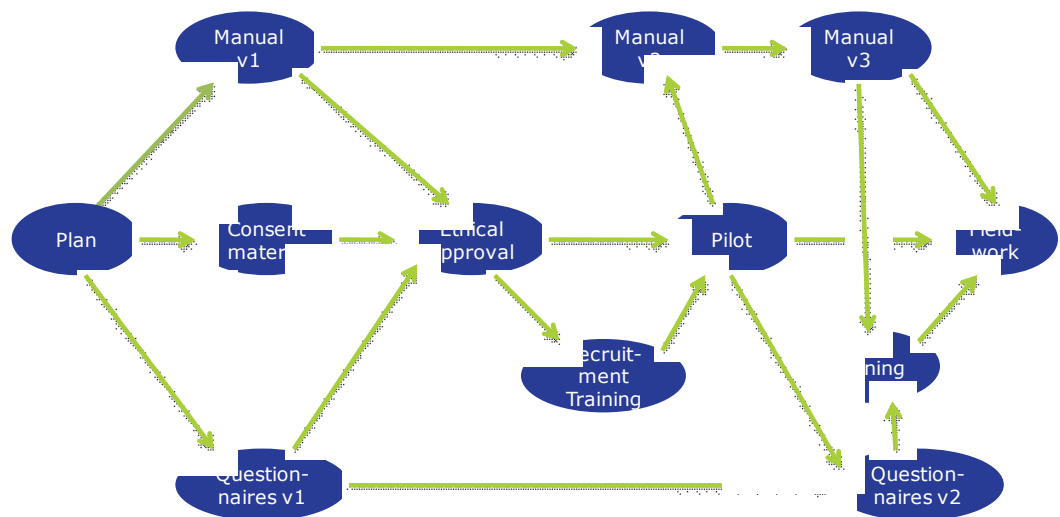


Figure 1.6 Example of a Critical Path Analysis (Perth chart)

One key element in the survey process, to ensure a successful data collection and fieldwork phase, is piloting and detailed evaluation of the pilot process. The countries may consider, if

a small pre-pilot (e.g. fieldwork testing with volunteer participants) is needed before the EHES pilot. These pre-pilots may be needed to test the computer programs, measurement techniques and timing. Specific aims for the national EHES pilots need to be defined during the planning and preparation. A pilot phase is always recommended, but the aims and content of the pilots depend on the previous experience and frequency of the survey. When the schedule of the data collection is planned it needs to be ensured that there is adequate time between the pilot and the actual data collection so that the experiences and results of the pilot are evaluated in detail (see Part A, Chapter 11 of the EHES Manual).

1.4.3 Risk analysis

Risks relate to uncertain events or situations that potentially can adversely affect carrying out a project according to plans. Risk management describes the processes concerned with identifying, analyzing and responding to the risks. The aim is to avoid uncertainties that threaten the goals and timetables of the project, and to take actions in advance to reduce the effect of these risks. Risk analysis should be carried out when planning the project and updated during the process. An example of risk analysis, covering common risks of national HES is presented in Table 1.1.

Table 1.1. Risk analysis in a national HES, examples of potential risks

Risk	Problems caused	Options for avoiding and controlling the risk
Insufficient personnel resources for planning and preparation	Shortcomings in planning and preparation leading to problems during fieldwork, in standardization and quality of data	Careful preparation of the survey organization, and seeking mandate from the ministries (health and research). Seeking specific funding for the planning and preparation, careful budgeting and diverse fund raising (see chapter 16), ensuring that the needed resources are available.

Risk	Problems caused	Options for avoiding and controlling the risk
Shortage of fieldwork personnel	Difficulties in keeping time schedules: problems caused for participants as well as in getting results	Raising interest towards the survey in the ministries and professional organizations, careful piloting and planning for the time schedules, taking potential sick leaves into account when planning the size of fieldwork team(s).
Insufficient time between pilot and actual fieldwork	Not possible to correct errors, specify manuals and training or adapt protocols, problems in standardization	Acknowledging the aims and significance of the pilots. Careful preparation for the time schedule.
Problems in collaboration between different organizations and actors	Difficulties in utilizing all expertise needed, and problems in keeping time schedules	Well defined leadership, building local partnerships throughout the survey process, careful planning for the supervision of the fieldwork teams
Low motivation among the population to participate	Low response, selective participation, biased results	Media campaigns and careful planning of the recruitment process (see chapters 13 and 14)
Violation of personal data protection rules	Loss of confidence	Careful planning and preparation for data management (see chapter 12) and proper training for all survey staff (see chapter 15).
National or local political or ecological crisis situations	Loss of data	Timely data transfer to central national and European data centers.
Epidemics	Absences of fieldwork staff, difficulties in participation	Little possibilities to avoid: infectious disease control at fieldwork settings and offering seasonal flu vaccinations to fieldwork staff.

Risk	Problems caused	Options for avoiding and controlling the risk
Safety risks during fieldwork	Harm caused to staff members or participants	<p>A medical doctor must be available for consultation or present at the fieldwork site.</p> <p>The protocol for needle stick injuries should be easily available to all staff members at all examination sites.</p> <p>Situations with aggressive and violent participants and other safety risks during fieldwork covered in manuals and training.</p> <p>Adequate supervision of field work staff throughout the fieldwork process.</p>

1.4.4 Project evaluation

Project evaluation should be an ongoing task (Table 1.2). It helps to make sure that the survey will be finalised with the resources available and within the timeframe set for the survey. Some parts of the evaluation are directly linked with quality assurance. Indicators for evaluation should be defined and followed with regular intervals and actions developed if the targets (e.g. numbers of participants) are not met.

Table 1.2. An example of potential evaluation indicators for selected stages in the survey survey process

Survey stage	Process indicators <i>program operations</i>	Output indicators <i>direct results or products of project activities</i>	Outcomes indicators <i>impacts or changes that can be attributed to the project activities</i>
Survey design	Organized meetings and seminars	First version of the survey proposal	National consensus on carrying out the HES and timing of the surveys. National HES plans approved by national authorities with at least preliminary decisions for funding for the HES.
Planning and preparation	Number and type of experts involved in the survey planning, personnel resources needed	Detailed survey plan with a budget	Ethical approval

Survey stage	Process indicators <i>program operations</i>	Output indicators <i>direct results or products of project activities</i>	Outcomes indicators <i>impacts or changes that can be attributed to the project activities</i>
Fieldwork during pilot(s) and the actual survey	Training seminars organised for the fieldworkers: hours of training Number of invited persons	Number of fieldwork staff members who participated in the national training (% of all fieldworkers) Number of days for the fieldwork Numbers of participants, those who were found to be ineligible, those who were not contacted and those who refused (by age and gender) Recorded length of examinations per participant – reported average length per participant (minutes/hours) Place of examinations: number of participants examined at the clinic setting/ at home/ at an institution	Participation rate (per age/ gender) Cost of the survey data collection/participant

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