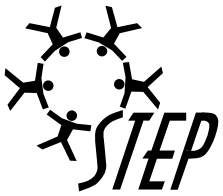
Health Micro-Insurance Schemes: Feasibility Study Guide

Volume 2: Tools



The Strategies and Tools against social Exclusion and Poverty global programme (STEP) of the International Labour Organization (ILO) is active in two interdependent thematic areas: the extension of social protection to the excluded and integrated approaches to social inclusion.

STEP supports the design and dissemination of innovative systems intended to extend social protection to excluded populations, particularly in the informal economy. It focuses in particular on systems based on the participation and organization of the excluded. STEP also contributes to strengthening links between these systems and other social protection mechanisms. In this way, STEP supports the establishment of coherent national social protection systems, based on the values of efficiency, equity and solidarity.

STEP's action in the field of social protection is placed in the broader framework of combating poverty and social exclusion. It gives special emphasis to improving understanding of the phenomena of social exclusion and to consolidating integrated approaches at the methodological level which endeavour to reduce this problem. STEP pays special attention to the relationship between the local and national levels, while at the same contributing to international activities and agenda.

STEP combines different types of activities: studies and research; the development of methodological tools and reference documents, training, the execution of field projects, technical assistance for the definition and implementation of policies and the development of networking between the various actors.

The programme's activities are carried out within the Social Security Department of the ILO, and particularly its Global Campaign on Social Security and Coverage for All.

STEP Programme
Social Security Department
International Labour Office
4, route des Morillons
CH-1211 Geneva 22
Switzerland
Tel: (+41 22) 799 6544
Fax: (+41 22) 799 6644
Email: step@ilo.org
http://www.ilo.org/step

Health Micro-Insurance Schemes: Feasibility Study Guide

Volume 2: Tools

International Labour Office Geneva

First published 2005

ILO / STEP
Health Micro-Insurance Schemes: Feasibility Study Guide
Geneva, International Labour Office, Strategies and Tools against social Exclusion and Poverty (STEP) Programme, 2005

ISBN Volume 1: 92-2-116571-X (print)
ISBN Volume 2: 92-2-116572-8 (print)
ISBN Volume 1 and 2: 92-2-116573-6 (print)
ISBN Volume 1: 92-2-117469-7 (web pdf)
ISBN Volume 2: 92-2-117470-0 (web pdf)
ISBN Volume 1 and 2: 92-2-117471-9 (web pdf)

Guide, health insurance, mutual benefit society, management, evaluation. 02.03.2

Also available in French: *Guide pour l'étude de faisabilité de systèmes de micro-assurance santé*
(ISBN volume 1: 92-2-216571-3, ISBN volume 2: 92-2-216572-1, ISBN volumes 1 and 2: 92-2-216573-X), Geneva, 2005

ILO Cataloguing in Publication Data

Cover BIP
Typesetting WEI
Printed in Switzerland SRO

Acknowledgements

This Guide was produced by the "Strategies and Tools against social Exclusion and Poverty" (STEP) Programme of the Social Protection Sector of the International Labour Organization. It is based on the work of national programme experts and the collaboration of numerous actors involved in the development of health micro-insurance schemes. The STEP Programme warmly acknowledges their support and contributions.

If you wish to do any comments, observations, to share the findings of your research works, or to obtain further information, please contact:

ILO/STEP
Social Security Department
4, route des Morillons
CH-1211 Geneva 22, Switzerland
Phone (41 22) 799 65 44
Fax (41 22) 799 66 44
E-mail: step@ilo.org
Internet: www.ilo.org/step

Foreword

Volume 2 provides tools that may be utilized during the various phases and steps involved in carrying out a feasibility study: definitions, practical examples, lists of questions, lists of information, sample data-collection materials, detailed methods of calculation, sample outlines and examples of drafted documents.

The purpose of Volume 2 is to serve as illustration. Thus, users may not need some of the tools that are provided. Alternatively, they may choose to personalize these tools or create new ones.

Volume 2 is divided into chapters. Chapter 1 contains a glossary of terms. Chapter 2 serves as support for Chapter 2 of Volume 1; it provides tools that may be used during the initial phase to prepare for and plan the feasibility study. Similarly, Chapter 3 serves as support for Chapter 3 of Volume 1 by providing tools that may be used during the data-collection and analysis phase. Chapter 4 supports Chapter 4 of Volume 1 by offering tools to design the health micro-insurance scheme. Lastly, Chapter 5 of Volume 2 provides support for Chapter 5 of Volume 1 by providing tools that may be used to prepare for setting up the scheme.

Volume 2 was not designed to be read in linear fashion from beginning to end. It was constructed along the lines of a **tool box** that users could browse through to find the tools they needed, depending on their current concern. Users may quickly look up a specific item of information in the table of contents or the index. They may also turn to Volume 2 for a fuller description of certain aspects of Volume 1, by following the links in Volume 1 to the corresponding sections of Volume 2.

Table of contents

List of acronyms

CIDR	Centre International de Développement et de Recherche
DTP1	1st dose of diphtheria-tetanus-whooping cough vaccine
HMIS	Health micro-insurance scheme
ILO	International Labour Office
ILO	International Labour Organization
INN	International non-proprietary name
MU	Monetary unit
NFCP	National Federation of Coffee Producers
NGO	Non-governmental organization
NPMC	Non-profit-making Corporation
PNC	Prenatal consultation
STEP	Strategies and Tools against social Exclusion and Poverty

1. Technical glossary

Ability to pay

The amount a person is capable of paying in order to benefit from insurance coverage. A person's ability to pay is always equal to or greater than his or her willingness to pay.

➔ see **Willingness to pay**

Access to health care or health services

Refers to the possibility that exists for people to make use of health care or health services. In order for everyone to enjoy access to health care or health services, steps must be taken to remove barriers, particularly economic, financial or cultural barriers, as well as those relating to the supply of health care when the latter is either non-existent or overburdened (and therefore inadequate to meet demand). Setting up a health micro-insurance scheme facilitates access to health care and services by removing certain financial barriers, but does not always resolve problems of geographic or cultural accessibility.

Geographic accessibility

Access to health care of acceptable quality by the inhabitants of a village may be limited by the distance between the village and health care providers, or by a lack of organized transport.

Cultural accessibility

Access to health care and the selection of treatment options may, to some extent, be influenced by social perceptions, attitudes towards illness and maternity, or family and community strategies for dealing with illness and maternity.

Accounting period

Refers to the period for which financial statements are prepared. The accounting period is usually determined by law and, in many cases, corresponds to one calendar year.

Adverse selection

A phenomenon according to which persons with a greater-than-average risk of illness or maternity enrol in a health micro-insurance scheme in a higher proportion than that of their share of the target population and/or choose the highest levels of coverage. When individuals have no say about whether to be insured or at what level of coverage, adverse selection does not exist. Such is the case when membership is automatic and schemes offer a single level of coverage. The existence of adverse selection may jeopardize a scheme's financial viability given that benefit-related expenses risk exceeding forecasts, since they are based on estimates of consumption for the overall target population.

➔ Synonym: **Anti-selection**

Agreement between a health micro-insurance scheme and a health care provider

An agreement concluded between a health micro-insurance scheme and a health care provider that specifies the services to be covered, fees to be applied, standards of quality to be respected and the amount and methods of payment for services rendered. Such agreements must enable the persons protected to enjoy quality health care at a pre-established and reasonable price.

Anti-selection

➔ see **Adverse selection**

Association

A group of persons who voluntarily join together for a particular purpose or to defend common interests. Contrary to commercial enterprises, associations are operated on a non-profit basis.

Examples: Associations of producers, consumers, human rights defenders; sports or cultural associations, etc.

Aversion to risk

A characteristic of an individual who does not like uncertainty. The greater an individual's aversion to risk, the more he or she will be willing to pay in order to obtain insurance coverage.

Basic health care

Routine treatment provided to patients in health facilities at the first level of the health pyramid. It includes preventive care and health promotion, simple curative treatment and nutritional rehabilitation.

Beneficiary

A person who, in his or her capacity as a member or dependent, benefits from the services of a health micro-insurance scheme.

➔ Synonym: **Covered person, Protected person**

Benefit/premium combination

The combination of, on the one hand, the benefits provided by the health micro-insurance scheme (services covered and levels of coverage + ancillary services) and, on the other, the corresponding premiums. A direct relationship exists between benefits and premiums: the greater the number of services covered and the levels of coverage provided, the higher the corresponding premium.

Benefit plan

Consists of both the list of covered health services and the level of coverage that corresponds to each service. A scheme may offer one or more benefit plans from which members may choose: for example, a basic plan and an extended plan (including a greater number of services, and in some cases, higher levels of coverage). Each benefit plan has a corresponding premium level; the premium level of an extended formula is higher than that of a basic plan.

Benefits

The health insurance coverage that a health micro-insurance scheme agrees to provide in exchange for the payment of insurance premiums.

Note: Benefits do not include ancillary services – such as health information – that the scheme may also provide to its members.

Board of directors

One of the decision-making bodies in those health micro-insurance schemes that hold a general assembly and are managed democratically. The board of directors is composed of members elected by the general assembly and is responsible for implementing the scheme's general policy, as determined by the general assembly. The board of directors may be assisted by the executive committee, which, in turn, is responsible for implementing decisions and managing the scheme on a day-to-day basis.

Brand-name drugs

A pharmaceutical substance protected by a patent and sold under a brand name chosen by the manufacturer.

Capitation

➔ see **Global payment**

Catastrophic risks

Contingencies that affect a large segment of the covered population, such as epidemics, and/or those for which the unit costs are high, such as very costly hospitalizations. The occurrence of catastrophic risks may jeopardize the financial viability of a health micro-insurance scheme.

Code

The set of legislative texts and application decrees governing insurance practices in a given country.

Examples: Some countries have a mutual benefit insurance code that governs the practices of mutual organizations or an insurance code that governs those of commercial insurance companies.

Commercial insurance

A system for the provision of coverage against the financial consequences of certain risks, formalized by means of a contract managed by a profit-oriented insurance company. The contract is concluded between an insurer and an insured party (individual or group). In exchange for the payment of premiums, the insurer guarantees the insured party that it will provide a specified level of coverage for expenses resulting from the occurrence of a given risk: fire, flood, theft, accident, illness, loss of harvest, etc.

Compulsory health insurance

A statutory and compulsory system through which the general community assumes responsibility for the health care costs of individuals as part of a State-run universal social security scheme.

Compulsory referral

The patient's obligation to seek consultation from a health facility at a given level before being entitled to receive treatment at a higher level. The doctor or nurse at the first health facility refers the patient to the higher level.

Example: In order to be admitted to a district hospital, covered persons are required to have undergone consultation at a health centre and to have been "referred" (or recommended to proceed) to the next higher level.

➔ see also **Level of health infrastructure (or level of the health pyramid)**

Consolidated invoice

An invoice that a health facility, which has concluded a third-party payment agreement with a health micro-insurance scheme, sends to the scheme at regular intervals in order to obtain payment. The consolidated invoice lists the charges for treatment delivered to protected persons during a given period. It enables the scheme to pay the provider, after having checked that the information on the invoice is consistent with the corresponding guarantee letters and treatment certificates.

Contractual rule

Rule defining the rights and obligations of the scheme with respect to members and those of members with respect to the scheme. In the case of a mutual organization or an association, the contractual rules are contained in the internal rules. In the case of a health micro-insurance scheme that does not provide for the participation of members in the scheme's management, the contractual rules are contained in the insurance contract.

Cooperative

An autonomous association of persons united voluntarily to meet their common economic, social and cultural needs and aspirations through a jointly owned and democratically controlled enterprise. (Excerpt from ILO Recommendation 193 concerning the Promotion of Cooperatives, 2002.)

Co-payment

The portion of the cost or the quantity utilized of a covered health service that is not borne by the health micro-insurance scheme.

Example: If the scheme covers 100 per cent of consultation fees up to a maximum of 400 Monetary Units (MUs) per consultation, and if the cost of a consultation is 600 MUs, then the amount borne by the scheme is 400 MUs and the amount of the co-payment is 200 MUs.

The introduction of co-payments enables a health micro-insurance scheme to reduce its costs, provided that the average amount for which the scheme is liable is lower as a result, and that insured persons, who must "pay out of their own pockets", are encouraged to limit their consumption of health care to what is strictly necessary. Notwithstanding, if the levels of co-payment are too high, the scheme may fail at ensuring the financial accessibility of health care for all persons.

For examples of co-payments ➔ see **Flat-rate benefit; Numerical deductible; Monetary deductible; Maximum number of days, cases or sessions; Percentage co-payment**

Cost recovery

A policy or practice used to obtain payment from patients for all or part of the cost of the health services provided to them.

Coverage

The financial compensation provided by the health micro-insurance scheme to insured persons for contingencies (or risks) defined in the insurance contract or the internal rules up to a prescribed limit. Compensation may be made through the reimbursement of members or through the application of a third-party payment mechanism.

Covered person

➔ see **Beneficiary**

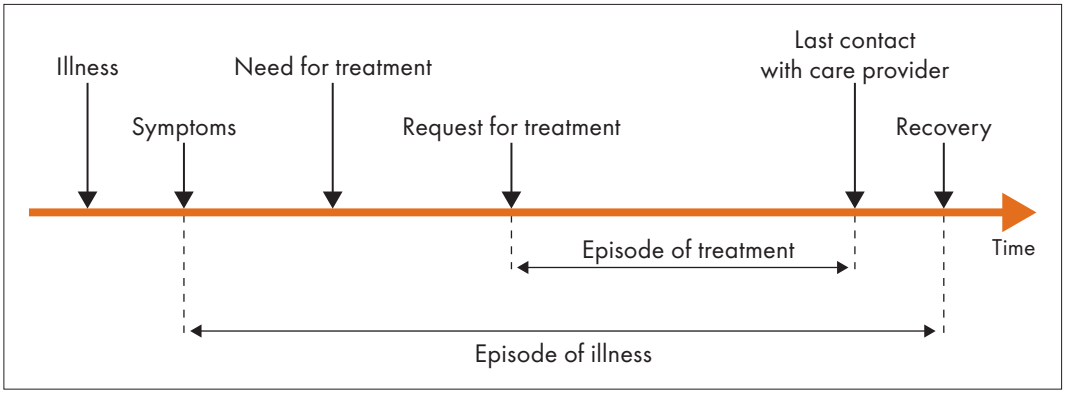
➔ Synonym: **Insured person**

Dependent

A person who, though not a member of a health micro-insurance scheme, benefits from the services it provides as a result of his or her family ties to a member. Some schemes accept as dependents the member's spouse (or spouses) and children up to a specified age; others also include ascendants (members' parents and grandparents) and even siblings (members' brothers and sisters). Members must register dependents upon enrolment in the scheme or, in the case of marriage or birth, subsequent to enrolment. When a person is no longer a member of the scheme, coverage is no longer provided to his or her dependents.

Episode of illness

A period beginning with the appearance of the first symptoms of an illness and ending with recovery from the illness. An episode of illness may consist of one or more episodes of treatment.



Episode of treatment

A period beginning with the first contact with a health care provider for a specific health need and ending with the last contact with the health care provider for the same need.

Essential drug

A medicine selected by the World Health Organization (WHO) for its importance in preventing or treating a disease that occurs with high frequency in a given country. Using the list of essential drugs helps to improve health care delivery, ensure the proper use of medicines and reduce health expenses.

Executive committee

The executive body of a health micro-insurance scheme generally consisting of members elected from among the board of directors. The executive committee is often the most active body in the scheme, given its responsibility for supervising and organizing all the scheme's activities.

Feasibility study

The first step in any project aimed at setting up or further developing a health micro-insurance scheme. Its objectives are to: (1) verify the relevance of the future health micro-insurance scheme, that is, to ensure that it offers a suitable response to the problems expressed and takes into account the particular context under consideration; (2) define the characteristics of the future scheme that would both ensure the scheme's viability and encourage its development; (3) describe an initial situation and use it for the subsequent evaluation of the scheme's impact on the health context and on access to health care.

Federation of schemes

An association of several schemes or unions of health micro-insurance schemes. Federations often assume the role of representing the schemes and promoting social protection.

➔ see **Union of health micro-insurance schemes**

Fee-for-service

A method of payment in which the health care provider is paid for each health service delivered and covered by the health micro-insurance scheme.

➔ see also **Methods of payment**

Flat-rate benefit

A benefit in which 100 per cent of health expenses are covered, up to a prescribed limit, which is expressed in monetary units.[1] The flat-rate benefit can be a maximum amount per prescription, consultation, session, episode of illness, hospital day, period or year. The amount of the flat-rate benefit is determined in advance and is independent of the expenses actually incurred by the patient. The use of flat-rate benefits helps to limit the expenses of the health micro-insurance scheme and to protect against catastrophic claims, which, owing to their exorbitant cost, could bankrupt the scheme.

➔ Synonym: **Maximum benefit**

Example: A "Consultations" benefit covers 100 per cent of expenses up to a maximum limit of 600 Monetary Units (MUs) per consultation. If the consultation fee is 500 MUs (<600 MUs), the scheme covers 100 per cent of expenses, or 500 MUs, and the member pays nothing. If the consultation fee is 800 MUs (>600 MUs), the scheme covers the maximum amount, or 600 MUs, and the member pays the difference between the consultation fee and the benefit, or 200 MUs.

Note: Some health micro-insurance schemes utilize the term "flat-rate benefit" when the maximum coverage is low – that is, far below the average cost of the health service – and the term "maximum benefit" when, on the contrary, it is relatively high. These two notions are nevertheless equivalent from the technical standpoint.

Frequency

The average number of cases of illness or utilization of a health service by a particular segment of the population over the course of a year.

Frequentation (rate)

An indicator that measures access to a health facility by the inhabitants of its catchment area. The frequentation rate is equal to the ratio of the number of new cases to the number of inhabitants. New cases are new episodes of illness or new pregnancies "seen" by the staff of the health facility for the first time. If a patient must return one or more times to undergo treatment in connection with a single episode of illness or a single pregnancy, these new visits are counted as old cases and are not taken into account in calculating the frequency rate. However, if a member uses a health facility five times over the course of a year for five different episodes of illness, all five visits must be counted.

[1] It should be noted that the use of flat-rate benefits in insurance differs from their use in other economic contexts. An insurance scheme cannot reimburse more than the amount actually spent by the beneficiary, such as in the case where a flat-rate travel allowance is granted independently of actual expenses.

General assembly

Refers to the main decision-making body of a health micro-insurance scheme when the latter is managed in a participatory fashion. In the case of a mutual organization, cooperative or association, the general assembly brings together members or their representatives; in the case of a joint stock company, it brings together shareholders. The general assembly determines the scheme's objectives and overall policy.

Generic drug

A medicine designated by the name of its main active ingredient and not by its commercial name. In general, the International Non-proprietary Name (INN) established by WHO corresponds to the generic name. Generic drugs are less expensive than brand-name drugs.

Global payment

A method of payment according to which health care providers are paid a fixed, comprehensive fee. It may consist of:

(1) A global fee per cluster of related health services

> **Example:** A fixed daily rate per hospital day may include charges for accommodation, consultations and examinations performed during the hospital stay.

(2) A global fee per episode of illness that includes all health services utilized in connection with a single episode of illness or maternity case.

> **Example:** A global maternity fee may include all health services utilized before delivery, during delivery (complicated or uncomplicated) and after delivery (follow-up).

(3) A global fee per "head", called a capitation payment. This is a comprehensive fee paid for each person covered and for a specified period – often one year – granting entitlement to unlimited utilization of all or some of the health services of a health facility.

➔ see also **Methods of payment**

Group contract

➔ see **Group insurance**

Group insurance (or group contract)

An insurance contract concluded between an insurer and a group of beneficiaries, such as the employees of an enterprise or the members of an association, cooperative, trade union, etc. Such contracts usually provide insurance coverage in the following areas: health care, retirement pensions, temporary or permanent disability, and death of the breadwinner.

Guarantee fund

A fund that a health micro-insurance scheme can call upon in the event of financial difficulty. Generally speaking, the assistance provided by the guarantee fund takes the form of a loan to the requesting scheme. The circumstances in which the guarantee fund may be used are usually specified in detail. The fund's assistance may be made conditional upon changes in the operation of the health micro-insurance scheme. Guarantee funds may be financed by member schemes, the State, financing institutions or support organizations.

Guarantee letter

A document proving that a patient is covered by a health micro-insurance scheme; that is, that he or she is registered as a member or dependent, is up to date with his or her premiums and has completed the required waiting period. The guarantee letter also indicates the level of coverage to which the patient is entitled. In certain schemes, the person protected by the scheme must obtain a guarantee letter before receiving treatment if he or she wishes to benefit from third-party payment. The guarantee letter helps to eliminate attempts at fraud, limit over-consumption and guarantee health providers that expenses relating to patients' treatment will be paid by the health micro-insurance scheme (third-party payment principle).

Health

The state of complete physical, mental and social well-being and not merely the absence of disease or physical disability (definition provided by the World Health Organization).

Health authorities

The public health establishments or officials responsible for a particular geographic area: province, region, country. Health authorities differ from public health care providers in that their mandate is not to offer health services, but, generally, to promote health and to regulate the health sector.

Health benefit (or medical benefit)

A health service delivered by the staff of a health facility. Such services may be dispensed in the context of basic health care, specialist treatment, home care, outpatient care, in-patient care, the provision of medicines, etc.

Health care facility (or medical facility)

An establishment or institution engaged in the field of health as a provider of health care to individuals: health centre, dispensary, doctor's office, hospital, etc.

Health care network

The grouping together of a certain number of health care providers within a particular region in order to increase the effectiveness of health care. Coordination among the members of the network allows for improving the transfer of information, in particular, as regards patients' medical records, and consequently, for providing more effective treatment for sick persons.

Health care provider

A person or a health facility that provides health care to a patient.

Examples: Doctors, pharmacists, surgeons, midwives, nurses, health centres, district hospitals, regional hospitals, national hospitals, dispensaries, traditional practitioners, etc.

Health care supply

The set of health services or health care providers available for a given population.

Health credit

A form of credit intended to finance health care expenses whose conditions of grant and repayment deadlines often differ from those of other forms of credit. An organization setting up a health micro-insurance scheme may also set up a health credit mechanism in order to provide financing for health costs either not covered by the scheme or whose coverage is subject to a maximum. It may also set up such a mechanism in order to enable insured persons to prefinance health expenses in the absence of a third-party payment.

Health insurance contract

An agreement concluded between a health micro-insurance scheme and an individual (member) or group of individuals (enterprise, trade union) in which the scheme agrees to cover prescribed health expenses incurred by the persons concerned in exchange for the regular payment of a premium. Health insurance contracts are clearly defined, limited in time, renewable and revocable. Only health micro-insurance schemes that do not provide for the participation of insured persons in the scheme's management conclude contracts with their members: schemes managed by health care providers, commercial insurance companies. Conversely, mutual health organizations do not conclude contracts with their members. Their relations with members are governed by the rights and obligations set forth in the statutes and internal rules of the scheme.

Health micro-insurance scheme

An insurance scheme – often set up by a civil society organization – whose purpose is to provide health insurance coverage to persons excluded from formal systems of social protection – mainly informal economy workers and their families. The term "micro" does not refer so much to the size of these schemes as to their social moorings. Even if such schemes are usually small in size, there are some, notably in Asia, that extend coverage to more than 100,000 persons. Others participate in networks or unions in which numerous schemes are linked together to form vast organizations. The term "insurance" refers to the financial mechanism utilized, which consists of pooling the risks and resources of an entire group in order to guarantee protection to all members against the financial consequences of health risks determined on a mutual basis. (➔ see D.M. Dror and C. Jacquier: "Micro-insurance: Extending Health Insurance to the Excluded", in *International Social Security Review*, Geneva, ISSA, 1999, Vol. 52).

Health pyramid

The organization of health services on a national scale, generally including several levels.

➔ see **Level of health infrastructure (or level of the health pyramid), Compulsory referral**

Health risk (or risk of illness)

Refers to contingencies that affect the health of individuals (illness, maternity). A distinction is made between major and minor risks. Major risks are those that entail considerable expense, such as hospitalizations, dystocic deliveries, surgical operations, etc. Such contingencies are rare and have a low probability of occurrence. Minor risks are those that entail more moderate expense, such as consultation with a general practitioner or the purchase of generic drugs. They are much more commonplace and have a high probability of occurrence.

	Probability	Cost	Example
Minor risk	+++	+	Consultation
Intermediate risk	++	++	Specialist treatment
Major risk	+	+++	Hospitalization

Health savings

A set of mechanisms that enable members to put aside funds in anticipation of a future health expense or to pay for future health care at a time when they have sufficient income available.

Examples: Individual health savings, subscription card, anticipated global payment (prepayment) for certain services, notably, mother and child health care.

These mechanisms can be worthwhile for persons with irregular incomes who, for that reason, are likely to be confronted with health expenses at a time when they lack sufficient resources to meet them. In the case of sickness or maternity, such persons would be able to utilize health services only up to the amount that they had saved or "prepaid". Risk management in such cases is individualized, and, contrary to an insurance plan, there is no pooling of resources to protect against risks. A health savings scheme may, however, be used to supplement an insurance plan. It may be applied to minor risks, for example, whereas the insurance plan is used to cover major risks.

➔ see **Prepayment**

Health service

A medical service provided by a health care worker (doctor, nurse, pharmacist, etc.) and "consumed" by a patient. Health micro-insurance schemes may cover individual health services or clusters of health services, provide flat-rate benefits per episode of illness, etc.

Examples of health services: medical consultations, biological analyses, "pharmaceuticals" (i.e. the provision of prescription medicines), vaginal deliveries, surgical operations.

Home care

Refers to health services delivered to the patient's residence. In some countries, doctors or nurses make home visits; however, fees for home care are higher in order to compensate for travel expenses.

Hospital care

Treatment provided during the hospitalization of a patient, that is, during a hospital stay including at least one night.

Insurance

A mechanism intended to provide coverage against the financial consequences of prescribed uncertain events, by spreading the anticipated costs resulting from the occurrence of those events – also known as risks – among several persons. Insurance is based on (1) the prior payment of premiums, i.e. before the occurrence of the risks; (2) risk sharing; and (3) the notion of guarantee. The premiums paid by insured persons are pooled together and used to cover the expenses of exclusively those persons affected by the occurrence of a certain number of clearly defined risks. In exchange for the payment of premiums, insured persons obtain the insurer's guarantee to provide this financial compensation. They give up ownership of the premiums paid, and consequently, any claim to them.

Insurance benefit

A health service whose utilization is covered by a health micro-insurance scheme, which undertakes to pay, in whole or in part, the expenses incurred in connection with the utilization of that service. This may refer to an individual health service, a cluster of health services, an episode of illness, a maternity case or a broader range of health services.

Insured person

➔ see **Member**

Internal rules

A document establishing the rules and operating procedures of an association or mutual organization that all members agree to follow. The internal rules complement the statutes and enlarge upon their description.

Juridical personality

Refers to the status of a natural person or legal entity that is the subject of rights and obligations. A natural person is a human being. A legal entity is a group of individuals to which the law attributes a juridical personality distinct from that of its members: an association, trade union, church, commercial enterprise, school, hospital, province, department, region, etc. The rights associated with juridical personality are, among others, the rights to own property, to institute legal proceedings and to assemble. Obligations include paying one's debts, paying taxes and paying wages to employees. A natural person acquires juridical personality upon birth and loses it upon death or disappearance. A legal entity acquires juridical personality upon registration with the competent authorities. Legal entities may be registered under a variety of forms: non-profit organization, cooperative, mutual organization, public limited company, limited liability company, etc.

Level of coverage

Refers to the level of health expenses – incurred in connection with the utilization of a given health service – for which the scheme agrees to assume responsibility. The level of coverage may be expressed as a percentage of the health expenses actually incurred (for example, 65 per cent of expenses incurred for medical tests) or as a maximum amount or number of utilizations (for example, coverage of consultations up to a maximum limit of 1,000 MUs for each consultation). It may also combine the two terms (for example, coverage of 80 per cent of expenses, up to a maximum of four consultations per person and per year).

Level of health infrastructure (or level of the health pyramid)

All health infrastructures that share the same functions. Dispensaries, health posts, health centres and doctors' offices generally constitute the first level; provincial or area hospitals make up the second level; and regional or university hospitals account for the third level. A compulsory referral system often exists for transfers from one level of the pyramid to the next, but is not applied in the case of emergencies.

➔ see **Health pyramid, Compulsory referral**

Loss

The difference between income and expenditure for a given accounting period, where expenditure exceeds income. Depending upon legislation and the legal status of the organization, other terms, such as "deficit", may be used.

Major risk

➔ see **Health risk**

Management

One of the principal functions of a health micro-insurance scheme. It includes:

- technical management, which deals with insurance-related activities: enrolment, collection of premiums and membership fees, claims settlement. It also deals with preventing the occurrence of insurance-related risks or limiting their effects: adverse selection, moral hazard, etc. Another of its functions is to establish relations with certain external actors, in particular with health care providers;
- internal control, which consists of verifying whether decisions have been implemented and whether the scheme's operating procedures and obligations, as defined in the statutes, internal rules, contracts, etc., have been properly respected;
- monitoring, which consists of monitoring the progress of the scheme's activities, and making adjustments if necessary;
- evaluation, which consists of assessing the scheme's operations, and determining whether its initial objectives have been met;
- internal organization, human resources management, accounting and financial management.

Maximum benefit

➔ see **Flat-rate benefit**

Maximum number of days, cases or sessions

A condition placed on a benefit in which coverage is limited to a maximum number of days, cases or sessions per person and per year.

Example: A "Prenatal consultation" benefit covers 100 per cent of expenses incurred, up to a maximum limit of three prenatal consultations per pregnant woman per year. If the patient undergoes two prenatal consultations, the scheme covers 100 per cent of the expense and the patient pays nothing. However, if the patient undergoes four prenatal consultations, the scheme covers 100 per cent of the expenses corresponding to the first three consultations and the patient pays for the fourth.

Medical adviser

A physician who works for the health micro-insurance scheme and provides advice to the scheme, as well as to its partner health providers and to patients. He or she advises the scheme concerning the conclusion of agreements with health providers, analyses requests for prior agreement and issues authorizations or refusals for coverage. The medical adviser monitors the appropriateness of the health services provided and the validity of and compliance with the rules of reimbursement. He or she may also play a role in activities relating to health education.

Member

A person who enrols in a health micro-insurance scheme, agrees to pay premiums and comply with the statutes and internal rules (in the case of a mutual organization) or the terms of the insurance contract (in the case of a health micro-insurance scheme that does not allow for the participation of insured persons in the scheme's management). Members are entitled to benefit from the services provided by the scheme, and may enable certain members of their family who depend upon them directly – known as dependents – to do so as well. Members and their dependents are the persons covered by the scheme, or its beneficiaries.

➔ see also **Dependent**

Members may also be referred to as "claimants", "policy holders" or "insured persons", depending upon the type of scheme concerned. The term "member" is most often used by health micro-insurance schemes that rely on the broad participation of insured persons in the scheme's management. The term "insured person" is a generic term that encompasses all other designations and is used primarily by commercial insurance companies. For the purposes of risk pooling, all the above-mentioned terms are equivalent.

Membership card

A document authenticating a person's membership in a health micro-insurance scheme. The membership card may contain the first and last names, dates of birth and, in some cases, photographs of the member and his or her dependents. By presenting the membership card, the person protected may benefit from fee agreements or third-party payment arrangements with the scheme's partner health care providers.

Membership fee

A sum of money paid to a health micro-insurance scheme by a new member upon enrolment. The membership fee covers administrative expenses and is not refundable in the event of withdrawal. The membership fee is also referred to as the enrolment, registration or initiation fee.

Methods of payment

The various methods used by the health micro-insurance scheme and/or patients, who are members of the scheme, to purchase medical services from health care providers. The main methods of payment are fee-for-service, payment per cluster of health services, payment per hospital day or per episode of illness and capitation payment (payment of an annual global fee for each covered person). Other methods involving mixed forms of payment (fee-for-service plus capitation payment) may also be used.

➔ see also **Fee-for-service, Global payment**

Minor risk

➔ see **Health risk**

Monetary deductible

A benefit in which 100 per cent of health expenses are covered, minus a fixed sum, expressed in monetary units, which is always borne by the member and is not proportional to the expenses actually incurred. The deductible may be applied to each health service utilized or totalled on an annual basis.

Example of monetary deductible applied to each health service utilized: A "Surgery" benefit covers 100 per cent of expenses incurred, minus a deductible of 2,000 Monetary Units (MUs). If surgery expenses are 1,500 MUs (<2,000 MUs), the scheme pays nothing and the member pays 1,500 MUs. If surgery expenses are 3,000 MUs, the scheme pays 1,000 MUs (3,000 – 2,000 MUs), while the amount of the deductible (2,000 MUs) is borne by the member.

Example of an annual monetary deductible: A "Consultations and treatment" benefit covers 100 per cent of expenses incurred, minus an annual deductible of 3,000 MUs. So long as the expenses accumulated over the year by the person protected are less than 3,000 MUs, the scheme pays nothing. However, the scheme covers 100 per cent of the patient's accumulated annual expenses in excess of 3,000 MUs.

Moral hazard (or risk of over-consumption)

A phenomenon according to which insured persons take undue advantage of the health services covered by the scheme because they know they are insured against the cost of such services. Their utilization of health care exceeds the standard used as an input for determining premiums. Some authors consider moral hazard also to include prescription abuse by health care providers, or the risk of over-prescription.

Mutual health organization

A health micro-insurance scheme characterized by the broad participation of members in the scheme's management. Mutual health organizations are democratic institutions founded on the principles of mutual assistance and solidarity. They are set up and managed by and for their members. The members of mutual health organizations participate in management through general assemblies and the election of officers. Mutual health organizations are the collective property of their members; the latter are at once the insurers and the insured. For this reason, no contract is concluded to formalize relations between mutual health organizations and their members (since one cannot conclude a contract with oneself). Rather, they are governed by the rights and obligations set forth in the statutes and internal rules of the organization. Mutual health organizations pursue objectives aimed at the promotion of social and individual well-being. They seek to reconcile the achievement of these objectives with the financial viability and competitiveness of the scheme as compared to other forms of health care financing, such as prepayment schemes, health micro-insurance schemes set up and managed by health providers, commercial insurance companies, etc.

Network

A grouping together of actors in the field of health micro-insurance (schemes, trade unions, support organizations, etc.) for the purpose of carrying out activities relating to information, training, promotion, etc.

Example: The "Concertation entre les acteurs du développement des mutuelles de santé en Afrique de l'Ouest et du Centre" (Coordination network between actors involved in the development of mutual health organizations in Western and Central Africa) maintains an Internet site (www.concertation.org) that lists support organizations which may be contacted by local promoters. The site also provides numerous bibliographical references, accounts of experiences and ongoing information on major events in the field of micro-insurance, including the organization of training courses.

Numerical deductible

A benefit in which 100 per cent of health expenses are covered, minus a specified number of sessions, cases or days, the cost of which is always borne by the member.

Example: A "Hospital accommodation" benefit covers 100 per cent of expenses incurred, excluding the first day of hospitalization, which is never covered. If the patient is hospitalized for three days, the expenses corresponding to the first day are borne entirely by the member, while the second and third days are covered by the health micro-insurance scheme.

Observation period, probationary period

➔ see **Waiting period**

Outpatient care

Treatment provided in a hospital or clinic, but without involving hospitalization of the patient. The patient returns home after receiving treatment.

Patient

An individual who utilizes health services: medical consultations, medicines, laboratory tests, surgical operations, deliveries, etc.

Percentage co-payment

The share of the cost of a covered health service that is not borne by a health micro-insurance scheme and is always expressed as a percentage. The percentage co-payment helps moderate the consumption of health care and reduces the scheme's expenses. It is an effective means of combating moral hazard, but, when too high, may have the effect of limiting the accessibility of health care.

Premium

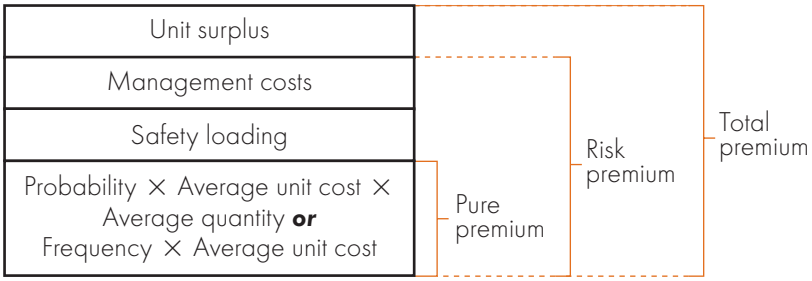
A fixed sum paid periodically by a member of a health micro-insurance scheme in order to benefit from the services provided by the scheme and to enable his or her dependents to benefit from them. The amount of the premium paid by a family may depend upon the number of persons protected, their characteristics (age, sex, place of residence, occupation) and the level of their family income. Premiums constitute the chief financial resource of the scheme and must enable it to cover its costs. These include expenditures related to the coverage of health expenses, operating costs, accumulation of financial reserves, etc.

The premium paid by a member is equal to the sum of the premiums calculated for each health service. The individual premium corresponding to a given health service is itself the sum of several elements, including the adjusted pure premium, the safety loading, the unit operating costs and the unit surplus.

Premiums (pure premium, risk premium, commercial premium, total premium)

The following terminology will be used in this guide:

- the term "pure premium" refers to the average amount of health expense, that is, the statistical cost of the risk before applying the safety loading;
- the term "risk premium" refers to the sum of three elements: the adjusted pure premium, the safety loading and unit operating costs (or management costs);
- the term "total premium before tax" refers to the sum of the risk premium and the unit surplus;
- the term "total premium inclusive of tax" refers to the sum of the total premium and taxes. Inasmuch as health micro-insurance schemes generally do not pay taxes on insurance, the total premium inclusive of tax is equal to the total premium before tax.



Prepayment

A set of mechanisms enabling individuals to pay for future health services at a time when they have sufficient resources available.

➔ see **Health savings**

Prevalence rate

The number of cases of a given disease as compared to all cases of disease and expressed as a percentage.

Example: If 15 per cent of the cases of disease registered by a health facility correspond to cases of malaria, then the prevalence rate of malaria is 15 per cent.

Primary health care

A health development strategy based on improving the quality of health services at the first level of the health pyramid, extending health services (from curative treatment to prevention and promotion) and encouraging the public to participate in the management and cost of health services.

Prior agreement

A control mechanism applied prior to the receipt of health services by patients who are members of a health micro-insurance scheme. Before receiving care, patients must ask health providers to complete a request for prior agreement, which specifies the type of care and its cost. Patients must then submit this request to the health micro-insurance scheme, which considers the case and issues either an agreement or a refusal to provide coverage. This procedure enables schemes to exercise a degree of control over the services provided and the fees charged by health care providers, inasmuch as schemes reserve the right to refuse requests. The prior agreement is generally used for costly but non-urgent services, such as the provision of eyeglasses or planned surgical operations.

Probability

The odds that an individual in a given population will fall ill at least once in the course of a year (probability of falling ill) or of using a particular health service at least once in the course of a year (probability of utilizing a service). The probability of an occurrence is always greater than or equal to zero and less than or equal to one. The closer the probability of an event is to zero, the more rare the event (illness, utilization of a health service). Conversely, when the probability of an occurrence approaches one, that occurrence is commonplace. A probability of one corresponds to a certain occurrence.

Procedure

A rule or a set of rules followed in order to conduct all or part of a process. There are different types of procedures, including management and monitoring procedures.

Example of a management procedure: Prior to accepting an application for membership, it is important to verify that the applicant, that is, the future member, has not already been terminated by the health micro-insurance scheme in the past.

Process

An operation involving several steps.

Example: The process of enrolment may include the following steps: application for membership, acceptance or rejection of the application, payment of membership fees and the first premium, completion of the membership sheet, entering the new member and his/her dependents in the membership register, collection of membership fees and the first premium, recording the payment in the premiums register and issuing a membership card.

Pure premium

The estimated average health expenses covered by a health micro-insurance scheme that correspond to each individual. The pure premium is used as an input in determining the insurance premium.

The pure premium may be calculated by applying the following general formula: Pure premium (health service) = Probability of using the service × Average quantity covered × Average unit cost. It may also be calculated by applying the specific formula: Pure premium (health service) = Frequency of utilization of the service × Average unit cost.

Qualifying period

➔ see **Waiting period**

Quality assessment

The act of periodically evaluating the objective quality of health facilities on the basis of standards established by the national health policy in terms of equipment, staffing, compliance with treatment protocols, availability of medicines, etc.

Reinsurance

A mechanism through which an insurer obtains insurance from a third party (the reinsurer) for all or a part of the risks it has undertaken to cover, in exchange for the payment of a premium. The contract concluded between an insurer and a reinsurer is called a reinsurance contract and may be thought of as the insurer's insurance coverage, or second-degree insurance. Reinsurance allows for the diversification of risks and their redistribution over a broader base, thereby reducing the insurer's risk of bankruptcy.

Representative sample

A group of persons belonging to a segment of the population that displays the same characteristics as the overall population: same proportion of men and women and the same proportion of young, elderly, actively employed and unemployed persons, etc. The size of the representative sample must conform to minimum requirements, which depend upon the size of the target population and its homogeneity.

Reserve fund

Own capital accumulated by the health micro-insurance scheme to meet future expenses, particularly those arising from unforeseen circumstances. The level of such funds is usually subject to regulatory provisions.

➔ Synonym: **Reserves**

Reserves

➔ see **Reserve fund**

Risk

Refers to the probability that an uncertain event will occur, and, by extension, to an uncertain event that, when it does occur, may have adverse financial consequences. This is why individuals seek insurance against the financial consequences of certain risks. Insurance cannot prevent risks from occurring, but it can reduce their financial impact. The main social risks are sickness, disability, old age, unemployment, death, etc.

Risk management

An approach that consists of taking certain precautionary measures and organizing oneself in order to deal with the future occurrence of a risk.

Example: Stocking food supplies in anticipation of a drought or a shortage, saving for a wedding, etc.

Risk of over-prescription

A phenomenon according to which health providers adjust their prescriptions to correspond to patients' maximum level of coverage, without opposition from patients, given the fact that the latter know they are covered. Health providers may have a tendency to prescribe more medicines than necessary, lengthen hospital stays, systematically use diagnostic services, such as laboratory tests, X-rays, etc.

Risk pooling

The principle according to which the financial consequences of individual risks are not borne by each individual but by an entire group. Risk pooling refers to the sharing of risks, which is the basic premise underlying insurance mechanisms.

Risk portfolio

The whole group of covered persons, whose individual levels of coverage and consumption of health services vary from one person to the next and represent costs for the scheme. Schemes must ensure that their risk portfolio is well-balanced, that is, that the presence of high risks (persons who consume more health services than the average) is compensated by low risks (persons who consume fewer health services than the average).

Risk selection

A measure or a set of measures that consist of giving priority to persons who represent a low risk of illness and excluding those with a high risk of illness. Risk selection may be practiced by certain insurers, particularly when they are unable to set rates that reflect individual risks.

Example: When an insurer establishes an age limit on enrolment or when it excludes members who have reached a certain age, it is practising risk selection.

Within the context of a capitation system (➔ see **Global payment**) some providers may have a tendency to give priority, in terms of treatment, to patients who represent a low risk of illness, who they know will not consume excessive amounts of health care, and to discourage those who represent a high risk. Health micro-insurance schemes must, of course, see to it that such practices do not arise.

Scope of a health facility

Refers to the persons actually served by a health facility. The scope or radius of a health facility is to be distinguished from its catchment area (or administrative area), within which it is responsible for administering curative, preventive and promotional health care.

Example: In theory, a district health centre covers all the inhabitants of the villages and hamlets in the district. In practice, the inhabitants actually served by the centre make up only part of the total population of the district and/or sometimes extend beyond its limits, owing mainly to geographic factors and to users' perception of the health centre.

Social control

An internal control mechanism arising from the existence of social relations between members.

Example: The fact that members know each other and live in close proximity to one another helps to limit fraud and abuse, as well as to reduce the unjustified consumption of health care.

Social movement

An organized social group that carries out actions to benefit its members and society in general.

Examples: Associations of individuals, trade unions, trade union federations, groupings, mutual organizations, cooperatives, etc.

Social protection

A generic term covering all guarantees against reduction or loss of income in cases of illness, old age, unemployment or other hardship, and including family and ethnic solidarity, collective or individual savings, private insurance, social insurance, mutual benefit societies, social security, etc. (Excerpt from *ILO Thesaurus*, Geneva, 1991.)

Social security

The protection which society provides for its members, against the economic and social distress that otherwise would be caused by the stoppage or substantial reduction of earnings resulting from sickness, maternity, employment injury and occupational diseases, unemployment, invalidity, old age and death. To this must be added the provision of medical care and the provision of subsidies for families with children.

Such protection may be provided by different mechanisms: statutory social insurance schemes, universal benefits and services financed from the general budget, social assistance, insurance schemes and micro-insurance schemes. (Adapted from *Social security: A new consensus*, Geneva, ILO, 2001).

Specialist treatment

Consultations with specialist physicians (gynaecologists, paediatricians, surgeons, etc.) and technical medical procedures (X-rays, clinical biology, etc.).

Statutes

A reference document describing, in particular, the aim and organization of the health micro-insurance scheme, and the relationship between the various internal bodies and their functions. Once approved by the competent authorities, the statutes confer a legally recognized juridical personality upon the scheme. Moreover, they determine the rhythm of its activities, such as the frequency with which general assemblies are held, annual reports and financial statements are submitted and approved and officials stand for re-election, etc. Depending upon the legal nature of the scheme, they may also lay down the rights and obligations of members (in the case of mutual organizations) or of shareholders (in the case of commercial insurance companies).

Steering committee

The team responsible for determining the strategic and technical guidelines of a project and monitoring its progress.

Supervisory committee

The supervisory body of a health micro-insurance scheme responsible for overseeing the scheme's administration and compliance with procedures, as well as for reporting on these matters to other bodies within the scheme.

Note: Oversight may also be carried out by an external body: commissioner of audits, external auditor, etc.

Supplementary health insurance

An optional scheme that assumes responsibility for health expenses not covered by social security schemes. Supplementary health insurance is organized at private initiative, most often by a mutual organization or insurance company.

Surplus

The difference between income and expenditure for a particular accounting period when income exceeds expenditure. Depending upon legislation and the legal status of the organization, other terms, such as "profit" or "earnings", may be used.

Target population

The population that the future scheme plans to cover, including all *potential* members and their dependents. The target population may be defined on a geographic basis: the inhabitants of certain neighbourhoods or villages, the catchment area of certain health facilities, etc. Alternatively, it may be defined on a socio-economic or socio-occupational basis: the members of a trade union, trade union federation or agricultural cooperative; the clients of a micro-finance institution; the employees of an enterprise, etc.

Third-party guarantor

A mechanism according to which patients covered by a health micro-insurance scheme pay the total amount of health expenses at the time services are utilized, subsequently claiming reimbursement for the share covered by the scheme. The health micro-insurance scheme guarantees reimbursement of the expenses paid.

➔ Opposite: **Third-party payment**

Third-party payment

A mechanism according to which patients covered by a health micro-insurance scheme are not required – at the time health services are consumed – to pay for health expenses covered by the scheme; they pay only the co-payment, if any. The health micro-insurance scheme (the third party) subsequently pays the health facility for the expenses it incurred on behalf of the patient.

➔ Opposite: **Third-party guarantor**

Treatment certificate

A document issued to a patient by a health care provider certifying that the patient was treated and indicating, in particular, the amount paid by the patient and the amount covered by the health micro-insurance scheme. The treatment certificate is used by the health care provider in the context of a third-party payment mechanism as proof that treatment was delivered to the patient and that the patient benefited from third-party payment for the portion of health expenses covered by the health micro-insurance scheme.

Treatment protocol

A standardized procedure of treatment, defining, for each type of pathology, the diagnostic interventions (laboratory tests, X-rays or others), medical care and medicines to be prescribed. When followed, treatment protocols make it possible to deliver health care to patients at the lowest cost and with a guaranteed level of quality. The use of treatment protocols also makes it easier to estimate the cost of benefits.

Union of health micro-insurance schemes

An association of several health micro-insurance schemes that pool part of their resources in order to provide and/or finance a number of services. These may include support and advice; training; financial services, such as establishing a guarantee fund; and the promotion of social protection with regard to health care. Several unions may form a federation.

Unit of service

The parameter (day, session, prescription, etc.) used to describe the quantity of a health service utilized. The selection of a particular unit is the basis for calculating the average number of units consumed in a given year and the average unit cost, and thus for calculating premiums.

Example: If it is assumed, in the case of a hospitalization, that the unit of service is the number of hospital days, then the relevant information is the number of hospital days and the cost of one hospital day (not the total cost of hospitalization). Additional example: in the case of the provision of medicines, the unit of service employed is often the number of prescriptions. Thus, the relevant information is the number of prescriptions issued (not the number of medicines) and the cost of each prescription (not the individual cost of each medicine).

Utilization (rate of)

An indicator used to measure the utilization of health services over the course of a single episode of illness or a single pregnancy, and to determine whether patients are receiving proper treatment as compared to standard practices.

Example: A utilization rate of 3.5 for prenatal consultations means that, on average, pregnant women undergo 3.5 prenatal consultations per pregnancy. Additional example: a utilization rate of 1.1 for consultations means that, on average, patients undergo 1.1 consultations over the course of a single episode of illness.

The utilization rate is equal to the number of new cases plus the number of old cases divided by the number of new cases. New cases may be defined as new episodes of illness or new pregnancies "seen" by the health facility staff for the first time. If a patient must return one or more times to undergo treatment in connection with a single episode of illness or pregnancy, these new visits fall under the category of old cases.

➔ see **Episode of illness**

Waiting period

A period of one or more months following enrolment, during which new members pay premiums to the scheme but are not entitled to receive benefits, whether for themselves or for their dependents. The waiting period is primarily aimed at discouraging opportunistic behaviour in persons who might enrol only in time of need (such as immediately prior to a delivery or planned surgical operation) and subsequently withdraw from the scheme. The waiting period also enables health micro-insurance schemes to accumulate financial reserves as from the scheme's inception. The length of the waiting period often varies depending upon the type of health services covered.

Example: The waiting period for maternity benefits may be nine or 10 months, but only one to three months for consultation, hospitalization and medicines.

➔ Synonyms: **Qualifying period, Observation period, Probationary period**

Willingness to pay

The amount a person is willing to pay in order to obtain insurance coverage. An individual's willingness to pay depends both on his or her level of income and perception of the risks involved: the greater a person's aversion to risk, the greater will be his or her willingness to pay to obtain insurance coverage for a particular risk. Willingness to pay is always less than or equal to ability to pay. However, in the case of poverty, ability to pay and willingness to pay are both very weak and tend to be indistinguishable from one another.

➔ see **Ability to pay**

2. Tools used to prepare for and plan the feasibility study

The tools used to prepare for and plan the feasibility study include:

Guidelines for conducting discussion sessions	→	**Tool 2.1** Recalls the objectives of discussion sessions, provides suggestions for organizing the sessions and proposes topics for discussion
An example of planning a feasibility study	→	**Tool 2.2** Describes the components and process of planning using a practical example
A sample budget estimate of a feasibility study	→	**Tool 2.3** Provides a sample format and the line items of a budget estimate

2.1 Discussion sessions

Objectives of the discussion sessions

The discussion sessions are used for actions 1, 2, 3 and the ongoing action of the initial phase. They also serve to prepare for the next phase, which is the data-collection and analysis phase.

Action 1: Verify that the preconditions for setting up the scheme have been met

The discussions may be used to collect information concerning the risk of sickness, the quality of health facilities, the level of economic dynamism and traditions of risk management and mutual aid. This information is used to verify that the preconditions have been met.

Action 2: Confirm the possibility of establishing a health micro-insurance scheme and begin the feasibility study

Once the preconditions have been met, the start-up of the feasibility study may be announced during the discussion sessions.

Action 3: Set up a steering committee

The discussion sessions also provide an opportunity to identify key actors who might play an active role in conducting the feasibility study and possibly serve on the steering committee.

Ongoing action: Enter into dialogue with the target population and the other actors

The discussions provide a means of entering into dialogue with the various actors concerning problems related to health and access to health care. They may be used to encourage actors to examine the current health situation, engage in reflection and undertake actions to address the problems identified.

Prepare for the subsequent data-collection phase

Lastly, the discussions provide a means of collecting data concerning the characteristics of families, the organization and operation of the health services and the difficulties associated with illness. These data will be helpful for developing the collection materials to be used during the data-collection phase.

The order of these actions is provided for information purposes. In practice, some actions may overlap, be repeated or be carried out in a different order.

Organization of discussion sessions

A number of successive sessions may be held, depending on the objectives sought. In particular, it is recommended that sessions aimed at verifying that preconditions have been met should be held prior to those organized in order to announce the start-up of the feasibility study.

The discussion sessions may involve encounters with individuals, small groups or larger bodies.

Talks with individuals or small groups are usually held with those concerned in their place of residence or work: neighbourhood or village talks; encounters with grassroots organizations and associations; or individual interviews with health care providers and local authorities. Holding talks with individuals or small groups encourages all participants to express themselves freely; however, it is time-consuming.

Collective talks held at a large meeting with "all" the actors have the advantage of increasing the visibility of the start-up of the study and accelerating talks with the various interlocutors. However, such talks do not allow for hearing everyone's point of view. Moreover, they run the risk of turning into formal presentations.

Regardless of the form that the discussion sessions take, it is important:

- to avoid allowing these sessions to become extravagant affairs, which may lead people to believe that the promoters have access to substantial resources (schemes will have to rely principally on the premiums paid by members in order to ensure their operation and sustainability);
- to hold these talks during a period when the actors – notably the target population – are available. Efforts should be made to ensure that the establishment of a health micro-insurance scheme is not perceived as a constraint at a time when the objective is to get these actors involved.

Sample topics of discussion

These topics are presented in the form of questions in order to emphasize the fact that these meetings are aimed at fostering dialogue; they should therefore not be seen as an opportunity for the facilitator or for one of the participants to give a formal presentation.

Topic 1: Risks perceived by families

Sample questions to be put to the population:

What are you especially fearful about? Not having enough money for food? Housing? Children's schooling? Health? Childbirth? Ceremonies (marriage, baptism, etc.)? Clothing?

Topic 2: Difficulties related to access to health care

Sample questions to be put to the population:

What did you do the last time someone in your family was ill? Did you have trouble getting to the health facility you had chosen? Did the facility have the necessary staff and equipment? Did you find all the medicines you needed? Did you have any trouble paying for treatment? or medicines? Where did the last childbirth in your family take place? At the hospital/health centre/at home? What were the reasons for this choice?

Sample questions to be put to local authorities, health authorities or health care providers:

What difficulties do people encounter when faced with sickness or maternity? Do people have trouble paying for medical care? Are all the necessary health infrastructures available?

Topic 3: Main illnesses and most difficult periods in terms of health

Sample questions to be put to the population:

What are the most frequent illnesses affecting adults and those affecting children? What do you do to deal with these illnesses: seek consultation at a health centre, seek consultation with a private doctor, self-medicate, etc.? Are there certain periods of the year when you are more frequently ill?

Sample questions to be put to health care providers:

What are the most frequent illnesses affecting adults and those affecting children? What means of treatment are habitually used to deal with each illness? What are the most difficult periods of the year in terms of health?

Topic 4: Financial difficulties related to health (sickness, maternity)

Sample questions to be put to the population:

Do you sometimes have trouble finding the money needed for health care in the event of sickness or maternity? What types of health care or treatment do you find to be particularly expensive? Where do you purchase your medicines and why? Do you ever put off a consultation or a hospital stay because you are short of money? Are these difficulties more acute at certain times of the year? What do you do when you do not have enough money?

Sample questions to be put to health care providers:

Do certain users sometimes find it difficult to pay for health care? Which treatments or health services in particular? What solutions are considered in such cases: credit, putting off certain treatments, mutual aid, etc.?

Topic 5: Existence of health care providers and how they are perceived

Sample questions to be put to the population:

What health care providers do you call upon? Are these providers located near your home or place of work? Are their fees affordable? Do medicine stock shortages ever occur? Are

there sufficient numbers of staff? Are staff members available and present? Are they sufficiently competent? Do you have to wait a long time before you can get an appointment or be seen for consultation? Are there health care providers you never call upon? Why not?

Sample questions to be put to the local authorities and the health authorities

What health facilities does the population use at different levels of the health pyramid? How is the staff of the hospital/health centre/clinic/maternity ward perceived from the standpoint of competency, availability, kindness, honesty?

Topic 6: Mutual aid practices

Sample questions to be put to the population:

What do you do when you have trouble finding the money needed to obtain health services? From whom do you request help? Is the help provided always sufficient? Are there associations that have set up a mutual aid fund in the event of sickness? If yes, how does this fund work?

Sample questions to be put to the health authorities and to the local authorities:

What do families do when they encounter difficulty paying for health services? Do mutual aid practices exist in the event of sickness? Is this mutual aid spontaneous? Is there an organized form of mutual aid? Do you know of any associations that have set up a provident fund?

Topic 7: Previous experience with projects to pool resources

Sample questions to be put to the local authorities or to the population:

Have other projects based on the collection of funds already been undertaken in the region: savings and credit funds, cooperatives, etc.? Have these projects met with success or failure? Have there ever been any problems concerning the misappropriation of funds?

Topic 8: Examples of existing health micro-insurance schemes and the principles of insurance

Sample questions to be put to the population:

Are you aware of any health micro-insurance schemes that have been organized by hospitals, cooperatives, associations, etc.? Have you heard of the "NAME" scheme? Have you met any members of these schemes?

Note: If the facilitator is asked to speak more specifically about an existing scheme, he or she may mention the promoter of the scheme, the date of the scheme's inception and the number of members and dependents it accounts for. He or she may also briefly explain the principles governing the functioning of this type of scheme, but should refrain from talking too much about its operating rules or giving details about its benefits or its premium levels so as to avoid proposing ready-made solutions that may limit the input of the actors.

Topic 9: Launching the study once the preconditions have been met

Once the preconditions have been met, the facilitator may announce the launch of the feasibility study, indicating the date of its start-up and its expected duration. He or she must also recall the objective of the study: to design the health micro-insurance scheme and to prepare for setting it up. It is also a good idea to specify how the process of conducting the study will be organized: who will be in charge and what the role of the population will be (active participation in working groups, consultation for certain decisions, role in terms of surveys).

2.2 Planning the feasibility study

Practical example: The National Federation of Coffee Producers (NFCP)

The NFCP has decided to set up a health insurance scheme for its members. The NFCP covers the entire country and is subdivided into regional branches, which, in turn, cover several community-based cooperatives and savings and credit funds.

The NFCP wishes to carry out an in-depth feasibility study at one of its regional branches for the purpose of setting up a pilot health micro-insurance scheme. The latter will then be replicated in the other regions after any necessary adjustments have been made.

Identification of the various phases, activities and tasks of the study

The NFCP, with the support of an external technical partner, has identified the following activities as needed for carrying out this study and implementing the pilot project:

- hold information sessions and talks with members of cooperatives, local authorities and health care providers, and enter into dialogue with the various actors concerning problems related to access to health care;
- set up a steering committee;
- conduct a survey of members of cooperatives in order better to understand their problems and needs in terms of financing health care expenses, and collect information that may be used to calculate premiums;
- interview health care providers in order to ascertain, in particular, the cost of health services;
- analyze the data collected and summarize the findings;
- organize working groups and working group sessions with members of cooperatives in order to define the various aspects of the health micro-insurance scheme: services covered, partner health care providers, benefit/premium combination(s);
- define the operating rules and organization of the health micro-insurance scheme, and draft the procedures manual;
- prepare agreements with selected health care providers;
- organize a general assembly of cooperatives that are members of the branch in order to confirm the results of the feasibility study and officially launch the health micro-insurance scheme;
- sign agreements with health care providers;
- train the various actors: supervisors, managers, providers;

- carry out an information campaign aimed at members of cooperatives;
- begin the process of enrolment and the collection of premiums.

The activities presented above have been summarized. In reality, each one consists of a set of tasks whose details are not specified here.

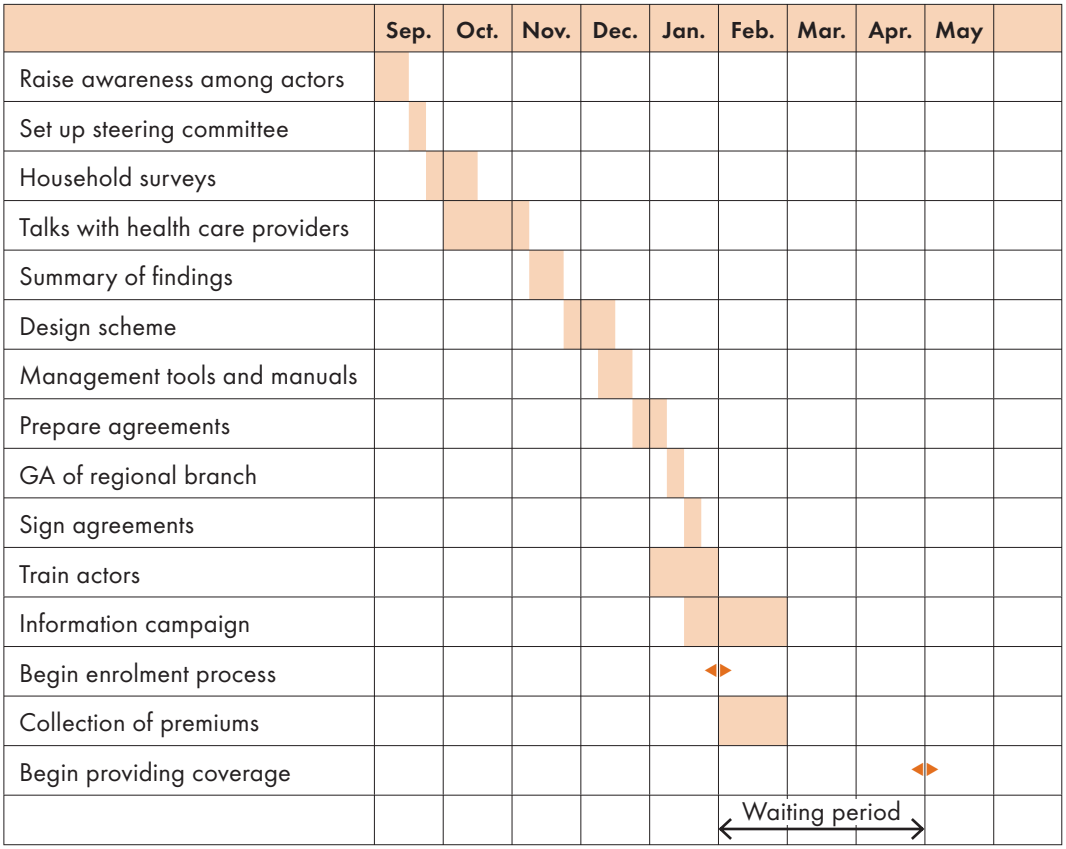
Estimate of the length of time needed for each activity and each task

The steering committee estimates that efforts to raise awareness among actors will be carried out over the course of two weeks. The task of setting up a steering committee and training its members will be completed in one week. The household surveys will be spread out over the course of three weeks, etc.

Organization of the activities and tasks in a timetable

The start-up of the scheme's activities should be planned for the period of the year when coffee producers have the highest incomes and are thus particularly inclined to paying membership fees and premiums. The feasibility study must be carried out before this period and at a time when cooperative members are available to participate in working group sessions and surveys.

The agricultural calendar provides the following information: the harvest and sale of coffee takes place from late January to early February, and the period of low liquidity and agricultural activity is from June to September. Consequently, the feasibility study may be conducted from September to January. The scheme could start up operations in early February. If the scheme plans to institute a waiting period, this could be scheduled for the period from February to April/May, which would place it before the beginning of the low liquidity period.



2.3 Preparing the budget estimate for the feasibility study

Sample budget estimate of a feasibility study

Expenses

	Amount (MUs)
Allowances	
Researchers	230 000
Travel expenses	
Local	60 000
Regional	80 000
Office supplies	
Photocopies	10 000
Paper, pencils	2 000
Total	**382 000**

Income

	Amount (MUs)
Funding	
Cooperative	232 000
NGO	150 000
Total	**382 000**

3. Tools used to carry out the data collection and analysis

The tools used to carry out the data collection include:

Suggestions of information to be compiled in order to meet the various data-collection objectives (objective 1, objective 2 ... objective 10)	**Tool 3.1** (3.1.1, 3.1.2, ...) ● List of data to be collected for objective 1 ● ...
Sample data-collection materials	**Tool 3.2** (3.2.1, 3.2.2, ...) ● Data-entry forms ● Survey questionnaires ● Interview forms
Examples of the minimum size of a representative sample	**Tool 3.3** Size of sample for conducting household surveys
Examples of processing collected data to produce usable information	**Tool 3.4** (3.4.1, 3.4.2, ...) Raw data ▶ Processing data (if necessary) to produce indicators ▶ Utilization

3.1 Lists of information to be collected by objective

Description of the lists of information to be collected by objective: content and purpose

There are ten lists of information by objective, one for each objective: list 3.1.1 corresponds to the first objective: "To understand the context"; list 3.1.2 corresponds to the second objective: "To establish a basis for selecting the target population" and so forth.

Each list provides suggestions of information to be collected and the sources from which this information may, a priori, be obtained, regardless of whether the sources are static (census, study, fee schedules, etc.) or dynamic (households, health care staff, etc.).

The lists of information by objective assist in defining the data-collection procedure and, more specifically, in drawing up the data-collection strategy chart. The strategy chart contains three columns. The first column is used to record the objectives sought; the second, to record the information to be collected; and the third, to record the sources from which the information sought may be obtained. For more details concerning the strategy chart, please refer to:

▶ *Action 1: Complete the strategy chart, Step 1: Define the data-collection procedure,* Volume 1, Chapter 3, page 31.

Certain items of information are common to several lists and have been repeated in each of the corresponding lists. This manner of presentation obviates the need to refer the reader from one list to the other and is consistent with the tool-box format of Volume 2.

PRECAUTIONS FOR USE

Precaution No. 1: All the lists are not useful to the steering committee. In most cases, the steering committee pursues only a few of the 10 objectives. Moreover, if it chooses to carry out the data collection in several stages, each stage will consist of compiling the information needed to meet even fewer objectives. The steering committee will therefore use only a small number of lists.

Precaution No. 2: All the information listed does not necessarily have to be searched. Each list provides a large quantity of information. This does not mean that, in order to meet a particular objective, all of it must be collected. In certain cases, the information listed is not relevant to the context in question, or is simply not available. One or two items of information may sometimes be sufficient to meet certain objectives. The steering committee may select from the lists only that information that it finds useful or necessary.

Precaution No. 3: The lists are by no means exhaustive. They would benefit by being enlarged. Each user may personalize the lists and modify them by adding objectives and information, with the sole condition that the information added be helpful, usable and "no more than sufficient" in quantity.

3.1.1 Lists of information to be collected for objective 1: "To understand the context"

This objective is of interest primarily to promoters who are unfamiliar with the context, such as international non-governmental organizations (NGOs), cooperation programmes, etc.

Note: Efforts to become familiar with the context should not take too much time, inasmuch as the information collected is mainly intended to provide a background for analysis.

Demographic information

Information	Sources
● Size and growth rate of the population in the area ● Breakdown of the population in the area according to age bracket and gender ● Percentage of the population living in urban, peri-urban and rural areas ● Existence of migratory movements ● Average number of members per family or per household ● Composition of families: men, women, children, other dependents	● National or regional censuses taken by the State or other institutions: producer support centres, NGOs, etc. ● Socio-economic studies

Economic information

Information	Sources
● Principal sectors of economic activity of the population in the area, and employment generating sectors ● Unemployment and underemployment rates in the area, and their relation to national rates ● Percentage of jobs in the informal sector, and mobility between the informal and formal sectors ● Average income per inhabitant, income disparities between rural and urban areas and between the various sectors of economic activity ● Seasonal variations in income ● Contributions from nationals living abroad ● Projects under way in the region	● National or regional censuses ● Socio-economic studies ● Interviews with local authorities
● Evolution of purchasing power: trend, examples, inflation rate	● Interviews with local authorities ● Economic yearbooks and reports
● Minimum wage in the region, if legally established	● Economic yearbooks and reports

Information on the health care supply

Information	Sources
● Organization of health care supply: health pyramid, role of regulatory bodies ● For each level of the pyramid: number of health care providers available; types of care dispensed; share of public or private health care supply, or set up under special programmes ● Geographic distribution of the health care supply: districts, distances between providers	● Health coverage plan ● Studies concerning the health situation
● How the various providers are perceived by the population ● Adequacy or inadequacy of health care supply	● Interviews with local authorities ● Interviews with health authorities

Health context

Information	Sources
● Health indicators: life expectancy; mortality rate – overall and by disease; morbidity rate – overall and by disease; infant and maternal mortality rates; undernutrition rate ● Main diseases and causes of death – in general, and according to age and sex – for men, women, adolescents and children ● Problems relating to sanitation, access to drinking water ● Seasons that are the most difficult in terms of health ● Problems concerning access (whether geographic, cultural or financial) to health care ● Health costs: methods of functioning and financing ● Health care financing initiatives	● Studies concerning the health situation ● Interviews with health authorities ● Interviews with health care staff and managers of health facilities ● Interviews with local authorities

Social aspects

Information	Sources
● Level of education and literacy ● Types of organization of the population: associations, tontines, groupings, cooperatives, etc. ● Examples of the most representative recently established organizations ● Practices of mutual aid and solidarity, particularly those intended to address health problems; their extent (whether they reach the entire population) and their trend (increasing or decreasing)	● Socio-economic studies ● Interviews with local authorities

Political and institutional environment in terms of health and social protection

Information	Sources
● Main features of national health policy: privatization of health care supply, health sector financing, role accorded to population, medication policy ● Extent to which this policy is applied ● Mechanisms set up by State to monitor and improve quality of health care at local level, improve financial accessibility of health care services ● Existence of mutual benefit insurance code, insurance code, social security code ● Current organization of social protection: percentage of population covered, characteristics of persons covered (conditions of access), instruments and institutions involved; health care benefits, contribution levels, existence of social security reform, etc. ● Legal framework governing contractualization with health care providers	● Political and legal framework: texts of acts, decrees, codes ● Interviews with local authorities ● Interviews with health authorities

3.1.2 Lists of information to be collected for objective 2: "To establish a basis for selecting the target population"

This objective will be of interest, in particular, to promoters responsible for selecting the target population of the future scheme. The target population may be defined on a geographic basis: the inhabitants of certain neighbourhoods or villages, the catchment area of certain health facilities, etc. It may also be defined on a socio-economic or socio-occupational basis: members of a trade union or agricultural cooperative, clients of a microfinance institution, employees of an enterprise, etc.

Selecting the target population generally involves taking into account both the needs of various population groups (by giving priority to those whose needs for coverage are greatest) and the project's likelihood of success (by giving priority to population groups that offer the project the best chances for success). A compromise is often made, given that, these criteria may to some extent be contradictory. All feasibility criteria must be taken into account. Only the main ones are included here.

The information collected also aids in understanding the means of treatment sought in terms of health services and the means used to finance health care expenses prior to the establishment of the health micro-insurance scheme. This information on the initial situation may be used later to measure the impact of the scheme.

Objective quality of the health facilities utilized by the target population

It is preferable for the selected target population to have access to a health care supply of acceptable quality. The quality of the health facilities must conform to the standards set by the national health policy.

Information	Sources
● Extent to which condition of buildings, equipment and qualifications of health care staff conform to standards ● Actual coverage = Percentage of patients treated in accordance with flowchart ● Availability of medicines = Percentage of days without stock shortages of essential drugs ● Opening hours ● Existence of an on-duty system outside of opening hours ● Average waiting time ● Overload for a given service = Percentage of time spent by physicians on a given service relative to total time spent on all services ● Average bed occupation rate = 100 × Number of hospital days / (Number of beds × Number of days in period under consideration)	Quality assessment

Access to the health facility

Access to the health facility is measured by the frequentation rate for each residential zone. This is calculated on the basis of the number of new cases attributable to users from a given residential zone and the total number of people in this residential zone who fall within the catchment area of the health facility.

Information	Sources
● Number of new cases by residential zone	● Annual reports or registers of health facilities
● Size of the population of each zone	● Regional censuses

Trend of socio-economic development among the target population

Information	Sources
● Monetary income generating activities: marketing of agricultural products, trade, etc. ● Income levels	● Socio-economic studies ● Interviews with local authorities

Social and organizational aspects

Information	Sources
● Levels of education and literacy ● Types of organization of population: associations, tontines, groupings, cooperatives, etc. ● Examples of the most representative recently established organizations	● Socio-economic studies ● Interviews with local authorities
For each organization identified: ● Size: number of members and dependents ● Existence (or lack) of a system of contributions or premiums ● Existence (or lack) of a common fund	● Interviews with leaders of civil society organizations

Practices of mutual aid in the event of illness

Information	Sources
For each organization or group identified: ● Existence of a form of mutual aid in the event of illness ● Type of resource pooling carried out in the event of illness: spontaneous, systematic or organized ● Type of assistance: donation, interest-free loan, loan with interest ● Amount of assistance: obligation extends to means available or to amount needed by recipient ● Methods of supplying the provident fund, when the latter exists: contributions or premiums, replenishment after each outlay, interest rates	● Interviews with leaders of civil society organizations

Means of treatment sought and methods of financing access to health care [2]

Information	Sources
● Means of treatment sought in terms of health services ● Methods of financing health expenses	● Household surveys

[2] Understanding the means of treatment sought by the population (self-medication, use of traditional practitioners, etc.) prior to the start-up of the health micro-insurance scheme allows subsequently for measuring the impact of the scheme on these responses. Likewise, understanding people's means of financing health care expenses (liquidation of savings, sale of possessions, reliance on family assistance, reliance on credit, etc.) allows for measuring the scheme's impact on financial problems related to health. Nevertheless, these data on the initial situation are not, a priori, utilized as criteria for selecting the target population.

3.1.3 Lists of information to be collected for objective 3: "To establish a basis for selecting the partner health care providers"

This refers to providers whose health services will be covered by the scheme.

This objective will be of interest to promoters who wish to conclude agreements with health care providers: fee agreements, patient reception procedures for insured persons, treatment protocols, methods of payment (fee-for-service or global payment) or third-party payment agreements.

This objective is also of interest to promoters who, without concluding any particular agreement with providers, wish to select those whose services will be covered by the scheme. This prior selection helps to avoid the escalation in costs that occurs when insured persons give precedence to the most expensive providers and to ensure that the health services covered by the health micro-insurance scheme are of acceptable quality.

In a situation in which several health facilities are in competition with one another, the selection of partner health care providers is generally made on the basis of criteria relating to availability, quality and cost.

Note: When there is a monopoly on the health care supply, the question of making a selection does not arise. When the health care supply is inadequate, the organization promoting the scheme or the support structure may consider setting up new health facilities.

The information collected may also be used to take a quick inventory of the health care supply, which may serve as a basis for measuring the subsequent impact of the scheme.

Information on the health care supply

Information	Sources
● Geographic distribution of health care supply: districts, distances between providers	● Health coverage plan ● Studies concerning the health situation
Monograph of each health care provider: ● Level of the health pyramid ● Type: public or private health care provider, or set up as part of a special programme ● District ● Type of care dispensed ● Fees	● Studies concerning the health situation

Objective quality of health facilities

The objective quality of health facilities must respond to standards set by the national health policy.

Information	Sources
● Extent to which condition of buildings, equipment and qualifications of health care staff conform to standards ● Actual coverage = Percentage of patients treated in accordance with flowchart	● Quality assessment

Objective quality of health facilities *(continued)*

Information	Sources
● Availability of medicines = Percentage of days without stock shortages of essential drugs ● Opening hours ● Existence of an on-duty system outside of opening hours ● Average waiting time ● Overload for a given service = Percentage of time spent by medical staff on a given service relative to total time spent on all services ● Average bed occupation rate = 100 × Number of hospital days / (Number of beds × Number of days in period under consideration)	● Quality assessment
● Rationalization of treatment protocols	● Interviews with health care staff and managers of health facilities

Perceived quality of health facilities

This refers to the quality of health facilities as perceived by users; it may differ significantly from the objective quality.

Information	Sources
● Quality of patient reception ● Medical staff: competency, ability to listen and empathize, existence of female medical staff ● General staff: honesty, confidentiality ● Average waiting time ● Opening hours ● Actual presence of staff during opening hours / sufficient numbers of staff ● Availability of medicines	● Household surveys ● Patient surveys

Frequentation

The higher the frequentation of a health facility, the more likely it is that the health services of that facility are accessible, of good quality and well regarded by users.

The frequentation of a health facility is measured by means of the frequentation rate, which is calculated on the basis of the number of new cases and the size of the population of the catchment area: Frequentation rate = 100 × Number of new cases/Population.

Information	Sources
● Number of new cases	● Annual reports or registers of health facilities
● Size of population in catchment area	● Regional censuses

Setting up selected health services in the event of an inadequate health care supply

When the supply of certain services is inadequate, the organization promoting the scheme or the support organization may consider taking a role in setting up selected health services, if the latter correspond to real or expressed needs on the part of the target population: establishment of a pharmacy, purchase of an ambulance, etc.

These activities do not, strictly speaking, pertain to the field of micro-insurance. They require specialized skills and a considerable financial investment. It is therefore preferable for them to be managed by a legal entity that is separate from the health micro-insurance scheme and for their establishment to be financed through specific mechanisms.

Information	Sources
● Estimated cost of setting-up and operating health services ● Local resources; in particular, available health care staff ● Administrative aspects (authorizations)	This Guide does not address efforts to set up this type of operation. For more information, please refer to the following guide and manual: ▶ *Evaluer la viabilité des centres de santé*, co-published by Afvp, CIDR, ReMeD, Medicus Mundi and the Ministry of Cooperation of France, 1997

3.1.4 Lists of information to be collected for objective 4: "To establish a basis for selecting the health services to be covered"

This objective is of interest to all types of promoters. The selection criteria may vary depending upon the type of organization in question. Civil society organizations and their support structures often give precedence to services that meet the health needs of households – regardless of whether or not such needs are felt or expressed – and whose utilization may pose financial difficulties. These organizations must strive to take into account the general needs of the population, but also the specific needs of the various groups that make up this population: women, men, children, adolescents, workers in certain sectors, residents of certain villages, etc. Health care providers may give precedence to the services that pose the most problems from their perspective in terms of cost recovery and/or financing.

Overview of health services

Information	Sources
● List of services dispensed by health facilities ● Official fees	● Fee schedules of health facilities

Priority health services in terms of health needs (real, felt) and services difficult to access for financial reasons

Information	Sources
● Real needs: preventive and curative health services that contribute significantly to lowering morbidity rates of certain illnesses and mortality rates ● Current means of evacuating patients to higher levels, and needs in this area	● Studies concerning the health situation ● Interviews with health care staff and managers of health facilities
● Needs expressed by population: preventive and curative services, but also transport fees, purchase of minor medical supplies, etc. ● Difficulties expressed by population: temporary, partial or total exclusion from a particular health service ● Difficulties expressed by population regarding differing levels of health expenses	● Household surveys

Specific needs of certain sub-groups of the population

A scheme may provide optional coverage for certain services if these services are of interest to only a segment of the target population.

Example: The service of evacuating patients to the nearest hospital is of interest, a priori, to people living far from the hospital.

Information	Sources
● Identification of sub-groups of the population with specific needs	● Interviews with health care staff and managers of health facilities
● Identification of the specific needs of these sub-groups Identification of priority services for homogeneous groups, such as residents of a particular village, individuals in a particular age bracket, etc. **Example of findings:** The emergency transport service registers a particularly high score among persons living more than 15 kilometres from the hospital.	● Household surveys

Health services considered a priority because of problems they pose in terms of cost recovery and/or financing

Information	Sources
● Problems regarding outstanding payments	● Annual reports or registers of health facilities ● Interviews with health care staff and managers of health facilities
● Under-utilization of certain services or equipment	

3.1.5 Lists of information to be collected for objective 5: "To establish a basis for determining methods of coverage: direct payment or third-party payment"

This objective is of interest to all types of promoters. A system of third-party payment is certainly more convenient for patients, but it presupposes the establishment of specific management mechanisms. Moreover, it contributes to raising patients' medical consumption: inasmuch as patients are required to disburse less, they are tempted to consume more. This results in a higher premium level. In order to keep premiums at an acceptable level, schemes may offer third-party payment for only a limited number of services.

The health services to be covered by third-party payment may be selected on the basis of criteria relating to the cost of these services and to the degree of urgency and/or unpredictability characterizing their utilization.

Example: The hospitalization of a wounded person following an accident is at once urgent and unpredictable.

Selection criteria for services to be covered by third-party payment

Information	Sources
• Real needs: cost of services, degree of urgency and / or unpredictability characterizing utilization of these services	• Interviews with health care staff and managers of health facilities
• Needs expressed by population	• Household surveys

3.1.6 Lists of information to be collected for objective 6: "To establish a basis for calculating premiums based on the health expenses of the target population"

In order to be covered by a health micro-insurance scheme and to enable their dependents to benefit from such coverage, members must pay premiums. In order to calculate an individual's total premium, the individual premium corresponding to each covered service must first be calculated. These premiums are then added together to obtain the total premium corresponding to an individual.

The individual premium corresponding to a given service is the sum of several components:

- the pure premium (for the service)
- the safety loading (for the service)
- the unit operating costs
- the unit surplus

For more details, please refer to:

▶ Premium calculation diagram, *Step 5: Select the benefit plans and calculate the corresponding premiums*, Volume 1, Chapter 4, page 55.

The data collection is aimed exclusively at obtaining information to be used in calculating the pure premium. There are two formulas for calculating the pure premium: the general formula and the specific formula. These formulas are as follows:

General formula

Pure premium (for a health service)

=

Probability of utilizing this service ×
Average quantity covered ×
Average unit cost

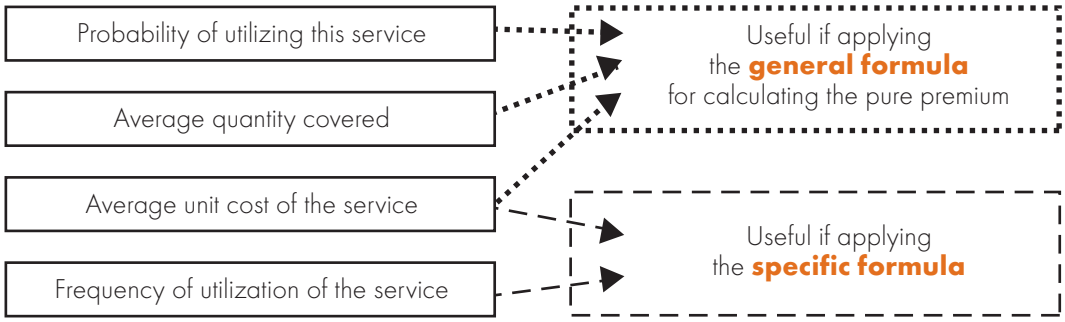
Specific formula

Pure premium (for a health service)

=

Frequency of utilization of this service ×
Average unit cost

This tool (3.1.6) lists the information to be collected in order to calculate, for each health service, the indicators to be used as inputs in calculating the pure premium:



Comparative advantages of the two formulas

The general formula may be used to calculate the pure premium regardless of the level of coverage: 100 per cent of expenses incurred, percentage co-payment, deductible, maximum benefit, etc. The specific formula may not be used to calculate the pure premium when the benefit places a limit on the quantity of health services covered, such as a prenatal consultations benefit subject to a maximum of three consultations per person per year, or a hospital accommodation benefit subject to a deductible for the first hospital day. On the other hand, the specific formula is easier to apply.

The general formula is based on the probability of consuming the health service in question. As will be seen, probability is also used as an input in making a precise calculation of the safety loading. Consequently, the use of the general formula presents the additional advantage of being able to calculate the safety loading precisely.

Important. The collected data relate to the past utilization of health services by a population, which, in most cases, does not enjoy any health insurance coverage. If the collected data are used as is, the figure obtained for the pure premium runs the risk of being undervalued in the first year. For this reason, when calculating the probability or the frequency of utilization of a health service, the input used is the proportion of patients **expected** to use the health facility – not the current proportion.

List of information needed to calculate probability
(→ useful if applying the general formula)

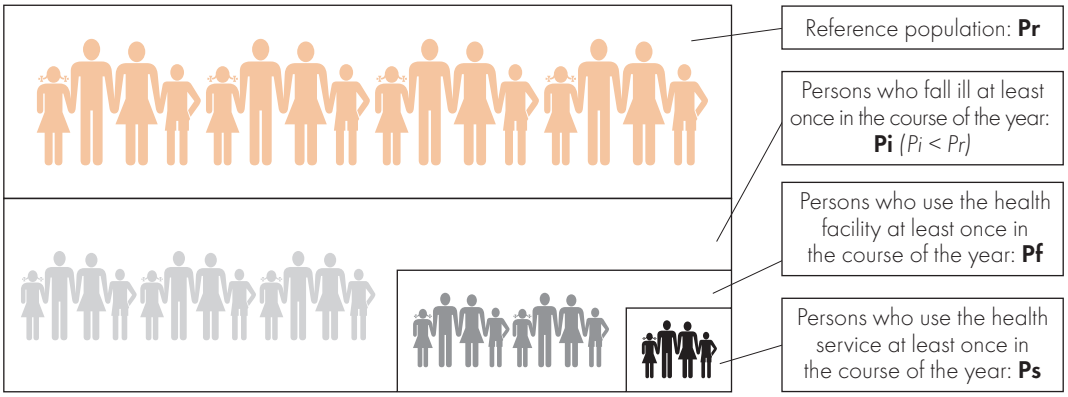
1. Recommended method of data collection and calculation: Based on household surveys and data supplied by health facilities

The probability of utilizing a given health service is equal to the number of persons utilizing the health service at least once in the course of the year, divided by the reference population = Ps/Pr.

The probability ratio (Ps/Pr) may, in reality, be broken down in the following manner:

$$Ps/Pr = Pi/Pr \times Pf/Pi \times Ps/Pf$$

- Pi/Pr is the number of persons who fall ill at least once in the course of the year, divided by the reference population. It thus expresses the probability of falling ill. Pi/Pr is always less than or equal to 100 per cent;
- Pf/Pi is the **expected** proportion of patients that will use the health facility. (Note: The expected proportion is higher than the current proportion when it is assumed that the establishment of a health micro-insurance scheme helps to reduce financial exclusion.);
- Ps/Pf is the proportion of health facility users who use the health service.



In order to calculate the probability of using a given health service, the following information must be collected:

- the probability of falling ill (Pi/Pr);
- the **current** proportion of sick persons who have used the health facility. (An analysis of the means of treatment sought or not sought in response to illness may be used to estimate the expected proportion on the basis of the current proportion.);
- the proportion of health facility users who use the health service (Ps/Pf).

Sources of information:

- the probability of falling ill may be determined on the basis of household surveys containing a question on the number of family members who fall ill at least once in the course of a given period;
- likewise, the current proportion of sick persons who have used the health facility may be obtained from household surveys containing a question on the means of treatment sought in response to illness;
- the proportion of health facility users who use the health service may be obtained from the registers or annual reports of the health facilities.

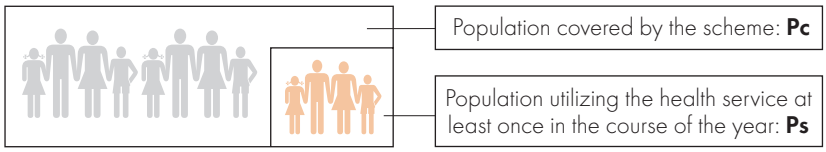
Summary table of information and sources

Information	Sources
● Probability of falling ill (Pi/Pr), i.e. the number of persons who fall ill at least once in the course of the year, divided by the size of the population surveyed	● Household surveys
● The current proportion of sick persons who have used the health facility	
● The proportion of health facility users who have used the service (Ps/Pf)	● Annual reports and registers of health facilities

2. *Alternative method of data collection and calculation of probability: Based on the management data of pre-existing health micro-insurance schemes*

The probability of using a given health service may also be obtained from the management data of pre-existing health micro-insurance schemes, when the latter have been set up to serve similar target populations.

The probability of using a given health service is equal to the number of persons utilizing the health service at least once in the course of the year, divided by the number of persons covered by the scheme (members and their dependents) = Ps/Pc



In order to calculate the probability of consuming the health service, the following information must be collected:

- size of the total population covered by the scheme (Pc);
- number of persons who have used the health service at least once in the course of the year (Ps).

Sources of information: information system of the health micro-insurance scheme; in particular, registers and indicators relating to claims and membership.

Summary table of information and sources

Information	Sources
● Total population covered by the scheme (Pc)	● Information system of a pre-existing health micro-insurance scheme
● Number of persons who have utilized the health service at least once in the course of the year (Ps)	

List of information needed to calculate the average quantity covered (→ useful if applying the general formula)

Among the persons who use the health service at least once in the course of the year, some use it once, others twice, others three times, etc.

In order to calculate the quantity consumed, it is necessary to determine the number of times the service was utilized by each patient.

This information may be obtained by:

- analyzing the registers and annual reports of the health facilities; or
- tracking a sample of patients; or
- examining the management data of a pre-existing health micro-insurance scheme.

Regardless of the source of information, a summary table – indicating on one row, either the number of times the service was utilized (once, twice, etc.) or the number of units consumed (one hospital day, two hospital days, etc.), and on the other, the number of patients concerned – is drawn up during the data collection.

Number of times the service was utilized	1	2	3	4	5	...
Number of patients concerned						

This form of detailed presentation, indicating the number of patients concerned for each number of times the service was utilized, makes it possible to calculate the average quantity covered.

The average quantity covered is calculated when determining the pure premium during the scheme design phase (see 4.5.2(a), page 132).

Summary table of information and sources

Information	Sources
● Number of utilizations of the health service per user and per year	● Annual reports and registers of the health facilities or ● Tracking a sample of patients or ● Information system of a pre-existing health micro-insurance scheme

List of information needed to calculate the average unit cost (→ useful regardless of which formula is applied)

The cost of utilizing a particular health service may vary. Thus, the cost of a consultation at a public health facility (generally low in cost) may differ from that of a consultation with a private provider. The cost of a medical prescription may also vary, depending upon the number of medicines prescribed and the price of each.

In order to calculate the average unit cost, it is therefore necessary to collect the unit cost corresponding to each utilization of the health service.

This information may be obtained by:

- analyzing the registers and annual reports of the health facilities; or
- tracking a sample of patients; or
- examining the management data of a pre-existing health micro-insurance scheme.

Regardless of the source of information, a summary table – containing the cost of the service (1,000 monetary units (MUs), 1,200 MUs, 1,500 MUs, etc.) and the number of times this cost was noted – is drawn up at the time of the data collection:

Cost of the service	1000	1200	1500	1800	2000	...
Number of utilizations	10	25	50	10	5	

This form of detailed presentation, indicating the number of utilizations for each cost level (or increment), allows for calculating the average unit cost covered, regardless of the benefit terms used (including flat-rate benefits/maximum benefits and monetary deductibles).

When the prevalence rate* for each pathology and the cost of the service for each pathology are known, the following summary table may be drawn up (the figures used are entirely fictitious):

Pathology	Malaria	Respiratory problems	Diarrhoea	...
Prevalence rate	10%	15%	9%	
Average cost of a consultation	500	500	500	
Average cost of a prescription	700	1 000	300	
Average cost of laboratory tests	500	600	500	

This form of presentation does not, however, allow for calculating the average unit cost for all benefit terms (it is ill-suited to flat-rate benefits/maximum benefits and monetary deductibles).

The average unit cost covered is calculated when determining the pure premium during the scheme design phase (see 4.5.2(a), page 136).

Summary table of information and sources

Information	Sources
● Unit cost of utilizing the health service	● Annual reports and registers of health facilities or ● Tracking a sample of patients or ● Information system of a pre-existing health micro-insurance scheme

List of information needed to calculate frequency (→ useful if applying the specific formula)

1. Recommended method of data collection and calculation: Based on household surveys and data supplied by health facilities

The frequency of utilization of a given health service is equal to the number of times the service is utilized in the course of the year, divided by the reference population = Ns/Pr.

The information needed to calculate the frequency of utilization may, in principle, be obtained from the registers and annual reports of the health facilities concerned. In this case, the reference population is that corresponding to the scope of the health facility, which may, in fact, be different than the population of its catchment area.

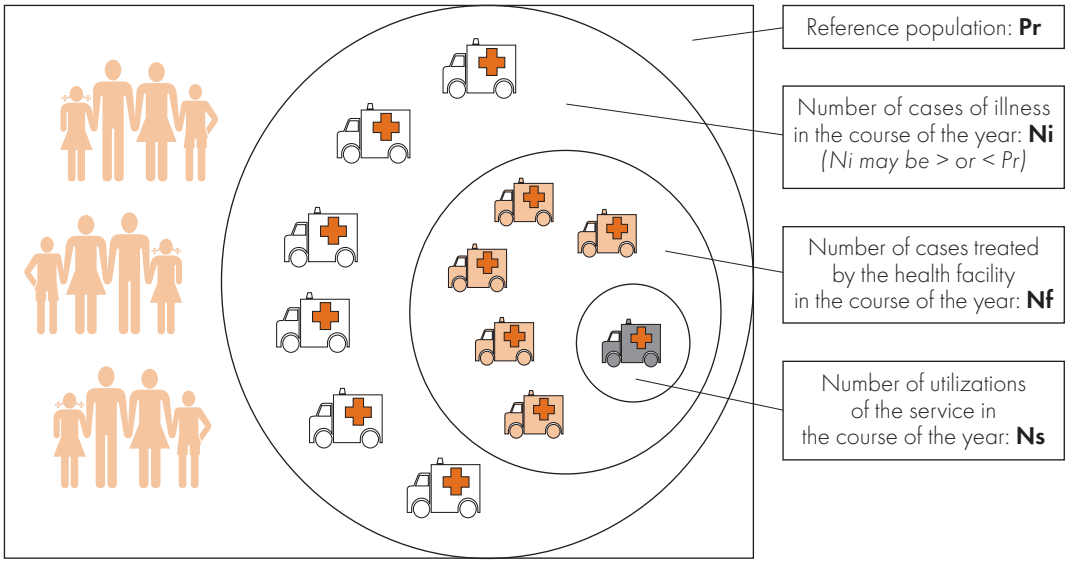
However, the frequency of utilization of a service, calculated on the basis of data supplied by health facilities, runs the risk of being underestimated. This is because the establishment of a health micro-insurance scheme will very likely contribute to increasing the utilization of the

covered services by reducing financial exclusion. In order to estimate the **expected** frequency of utilization of the health service, it is therefore necessary to take into account the means of treatment sought or not sought by the target population in response to illness. This requires that part of the data be collected from households.

The frequency ratio (Ns/Pr) may, in reality, be broken down in the following manner:

$$Ns/Pr = Ni/Pr \times Nf/Ni \times Ns/Nf \text{ where:}$$

- Ni/Pr is the number of cases of illness in the year, divided by the reference population, which equals the frequency of illness among the reference population. Ni/Pr may be less than or greater than 100 per cent;
- Nf/Ni is the **expected** proportion of cases of illness to be treated by the health facility relative to the total number of cases of illness. (Note: It is conceivable that the expected proportion will be greater than the current proportion, given the reduction in financial exclusion resulting from the establishment of a health micro-insurance scheme.);
- Ns/Nf is the share accounted for by the health service in the total number of cases treated by the health facility.



In order to calculate the frequency of utilization of the health service, the following information must be collected:

- number of cases of illness among the reference population (Ni and Pr);
- **current** proportion of cases of illness treated by the health facility. (An analysis of the means of treatment sought or not sought in response to illness may be used to estimate the expected proportion on the basis of the current proportion.);
- share accounted for by the health service in the total number of cases treated by the health facility (Ns/Nf).

Sources of information:

- the number of cases of illness among the reference population may be obtained from household surveys requesting information on the number of cases of illness among family members within a given period;
- the proportion of cases of illness treated by the health facility may also be obtained from household surveys containing a question on the means of treatment sought in response to illness;

- the share of the health service in the total number of cases treated by the health facility may be obtained from the registers or annual reports of the health facilities.

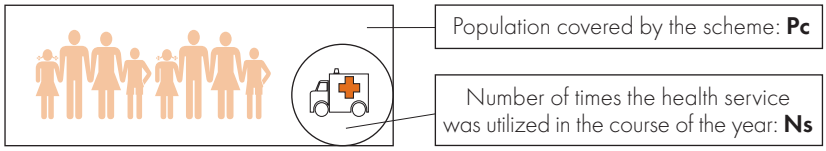
Summary table of information and sources

Information	Sources
● Number of cases of illness among the population surveyed (Ni/Pr)	● Household surveys
● Proportion of cases of illness treated by the health facility	
● Share accounted for by the health service in the total number of cases treated by the health facility (Ns/Nf)	● Annual reports and registers of health facilities

2. *Alternative method of data collection and calculation of frequency: Based on the management data of pre-existing health micro-insurance schemes*

The frequency with which a health service is utilized may also be determined on the basis of the management data of pre-existing health micro-insurance schemes, provided that such schemes have been set up to serve similar target populations.

The frequency of utilization of a health service is the number of times the service was utilized in the course of the year by the persons covered by the scheme (members and their dependents) = Ns/Pc



In order to calculate the frequency of utilization of the health service, the following information must be collected:

- total population covered by the scheme (Pc);
- number of times the health service was utilized in the course of the year (Ns).

Sources of information: information system of the scheme, in particular, registers and indicators relating to claims and membership.

Summary table of information and sources

Information	Sources
● Total population covered by the scheme (Pc)	● Information system of a pre-existing health micro-insurance scheme
● Number of times the health service was utilized in the course of the year (Ns)	

3.1.7 Lists of information to be collected for objective 7: "To establish a basis for calculating premiums based on the operating costs of health facilities"

The individual premium must enable the scheme to cover (in whole or in part) the share of the health facilities' operating costs that correspond to each individual. This is determined by estimating the total operating costs of the health facilities and dividing these costs by the expected number of users.

Note: In some cases, it is possible to estimate the operating costs of each branch of activity of a health facility. Estimating costs according to branch allows for more refinement and a greater number of possibilities when choosing the health services to be covered. The scheme may thus decide to cover only some of the services offered by a health facility.

Example: In the case of a hospital, it is possible to estimate the operating costs of the following services: "Maternity/obstetrics", "Surgery", "Outpatient consultations", etc.

Estimated fixed costs of a health facility

Estimated fixed costs are determined on the basis of current fixed costs and any additional expenses contemplated for the next accounting period: investments, recruitments, etc.

Information	Sources
● Current fixed costs: amortization of equipment, maintenance of buildings and equipment, payroll costs, training costs, etc.	● Accounting data of health facilities

Estimated variable costs of a health facility[3]

Estimated variable costs are determined on the basis of current variable costs, estimates of the scheme's population penetration rate and various growth rates linked to the establishment of the scheme.

Information	Sources
● Current variable costs, i.e. those related to the number of users: purchase of medicines, consumable supplies, etc.	● Accounting data of health facilities

Estimated number of users

Premiums are calculated on the basis of the estimated fixed and variable costs, and the expected number of users. The expected number of users is based on the number of current users (each user being counted only once, even if he or she uses the health facility several times in the course of the year) and the estimated growth rate in the number of users.

Information	Sources
● Number of current users, each user being counted only once	● Annual reports and registers of health facilities

[3] In health micro-insurance schemes set up by health care providers, insurance coverage is, in many cases, not provided for variable costs such as medicines or consumable supplies, which remain at the user's expense.

3.1.8 Lists of information to be collected for objective 8: "To evaluate the target population's willingness to pay"

This objective is of interest to all promoters. The target population's willingness to pay (in other words, what individuals are prepared to pay) may be used to define a maximum premium amount not to be exceeded. When income is seasonal in nature, people's willingness to pay may be high at certain times of the year and little or nothing at others. It is preferable to adapt premium payments to these variations. Taking the level of willingness to pay into account in choosing the amount and periodicity of premium payments is a determining factor in the success of the scheme as far as enrolments and the collection of premiums are concerned.

Note: The goal at this point is not to determine the amount of the premium. Rather it is to identify a range of premium amounts that could serve as a reference when defining various scenarios within the context of financial feasibility. Moreover, the stated intentions of the target population regarding premium levels must be treated with precaution. Thus, the fact that 90 per cent of the persons surveyed suggest a premium of 50 MUs per person per month does not mean that they would necessarily join an insurance scheme whose premiums were set at that level. Other factors also have a bearing on individuals' enrolment in a particular scheme, such as the advantages offered by the proposed services, the level of understanding of the scheme, the quality of the covered health services, the degree of confidence, etc.

Premium level and seasonal nature of willingness to pay

Information	Sources
● Stated intentions of population regarding premium levels ● Seasonal nature of willingness to pay in relation to seasonal nature of income ● Homogenous groups, in terms of willingness to pay, including level of willingness to pay of each group	● Household surveys
● Current contribution or premium levels in civil society organizations functioning on the basis of periodic contributions or premiums (cooperatives, associations, health micro-insurance schemes) and periodicity of the payment of these contributions or premiums (monthly, during harvest season, etc.)	● Socio-economic studies ● Interviews with leaders of civil society organizations ● Other health micro-insurance schemes

3.1.9 Lists of information to be collected for objective 9: "To establish a basis for negotiating with health care providers, negotiating with transport operators, collaborating with prevention programmes, and obtaining information on public aid"

This objective is of interest to promoters who plan to negotiate partnership agreements with health care providers. These may concern fees, patient reception procedures for insured persons, treatment protocols or the method to be used to pay for health services (fee-for-service or global payment). They may also concern third-party payment agreements. In the case of the latter, an understanding must also be reached regarding verification procedures to be followed and rules pertaining to invoicing and payment. Experience has shown that such agreements are often informal; they may be formalized through written agreements. This requires knowing who the interlocutors of the scheme will be at the time the agreements are prepared and what specific aspects the agreements will address: fees, quality standards, etc.

This objective is also of interest to promoters who plan to finance patient evacuations from one level of the health pyramid to another and who consequently wish to conclude a fee agreement with an association or trade union of transport operators.

Lastly, this objective is of interest to promoters who wish to promote health education and prevention among their members by having them participate in a prevention programme organized by the State, an NGO or a support organization. Such activities complement the efforts of micro-insurance, since prevention and health education help to reduce the prevalence of certain diseases and, consequently, the costs of the health micro-insurance scheme.

In certain countries the State grants financial assistance to health micro-insurance schemes: premium subsidies, supply of support services at advantageous rates, financing of guarantee funds*, etc. It is important to obtain information on whatever possibilities may exist.

Legal framework governing contractual arrangements with health care providers

Information	Sources
● Existence of a legal framework, provisions of this framework	● Interviews with health authorities ● Political and legal framework

Identification of interlocutors for concluding agreements with health care providers

Information	Sources
● Organisation of the health pyramid ● Respective responsibilities of the health facilities and regulatory bodies in the day-to-day operation of the health facilities: fee setting, patient reception procedures, rules concerning procurement of medicines, treatment protocols, organization of management	● Health coverage plan ● Interviews with health care staff and managers of health facilities ● Interviews with health authorities
● Method used to manage the health facility: existence of a management committee, self-management, etc.	● Interviews with health care staff and managers of health facilities

Estimation of fees with a view to defining contractual fees

Information	Sources
● Official fees ● Current method of fee-setting for health services: fee-for-service; fee per cluster of health services (including one or more health services depending on patient's needs); per hospital day	● Fee schedules of health facilities
● Estimates of overcharging, if any	● Patient surveys ● Interviews with health care staff and managers of health facilities ● Interviews with local NGOs working to eliminate corruption
● Fees negotiated by other health micro-insurance schemes in the region with comparable health facilities: discounts, advantageous rates	● Other health micro-insurance schemes

Levels of quality and operations of health facilities with a view to defining quality standards

Information	Sources
● Condition of infrastructure and equipment, needs for equipment ● Average waiting time (objective, perceived), actual presence of medical staff (perceived), sufficient numbers of staff ● Availability of medicines (objective, perceived)	● Quality assessment ● Patient surveys ● Interviews with health care staff and managers of health facilities
● Procedures applied to ensure confidentiality of medical records	● Patient surveys ● Interviews with health care staff and managers of health facilities
● Rationalization of treatment protocols ● Treatment protocols utilized	● Interviews with health care staff and managers of health facilities

Methods of payment of health care providers

Information	Sources
● Current method of fee-setting for health services: fee-for-service, fee per cluster of health services; per hospital day, etc.	● Fee schedules of health facilities
● Method of payment preferred by health facility: fee-for-service, fee per cluster of health services, per hospital day, per episode of illness, capitation (annual global fee for each insured person) ● Preferred frequency of payment in the context of a third-party payment mechanism	● Interviews with health care staff and managers of health facilities

Agreements with transport operators

Information	Sources
● Possibility of an agreement ● Estimated fees for journeys to evacuate patients ● Possibility of a third-party payment mechanism	● Interviews with transport operators

Participation in health education and prevention programmes

Information	Sources
● Existence of health education and prevention programmes, programmes to provide medicines and screening ● Activities carried out by programmes (screening, prevention, access to treatment) and diseases involved (HIV infection, tuberculosis) ● Methods of collaboration	● Interviews with health authorities ● Interviews with officials in charge of prevention programmes

Existing public financial aid and grant conditions

Information	Sources
● Survey of financial aid available ● Conditions of grant (conditions to be met)	● Political and legal framework

3.1.10 Lists of information to be collected for objective 10: "To establish a basis for defining the organization and operation of the scheme"

This objective is of interest to all types of promoters.

It involves identifying among the existing civil society organizations – including health micro-insurance schemes, if applicable – intelligent forms of organization or effective systems of management. It also involves assessing the extent of any networks that may have been set up by these organizations.

Moreover, information concerning the population penetration rates achieved by other health micro-insurance schemes or concerning the percentages of management costs may be used as references when calculating premiums or drawing up the budget estimate of the health micro-insurance scheme.

The idea is therefore to take advantage of local know-how and experience.

Formation of networks

Information	Sources
● Existence and characteristics of the network, number of branches and locations, activities of branches, numbers of staff at each branch	● Interviews with leaders of civil society organizations

Methods of organization

Information	Sources
● Legal status of organization ● Decision-making, executive and supervisory bodies ● Role of members in organization	● Other health micro-insurance schemes ● Interviews with leaders of civil society organizations

Principal rules of management

Information	Sources
● Membership rules ● Mechanism used to collect premiums, level of premium collection obtained	● Other health micro-insurance schemes ● Interviews with leaders of civil society organizations

Other indicators

Information	Sources
● Population penetration rates, percentage of management costs	● Other health micro-insurance schemes

3.2 Sample data-collection materials

Suggested procedure for developing data-collection materials

Before developing the data-collection materials for a particular source of information, it is essential to have first identified the information to be collected from that source.

In determining the list of data to be collected from each source, the steering committee may refer to the implementation chart that was drawn up during the definition of the data-collection procedure. The first two columns of this chart contain, for each source of information the steering committee plans to consult, the list of data to be collected from this source. For more information on the implementation chart, please refer to:

▶ *Complete the implementation chart, Step 1: Define the data-collection procedure,* Volume 1, Chapter 3, page 37.

Once it has been determined which data are to be obtained from each source, data-collection materials may be developed. In developing these materials, the steering committee may refer to the sample data-collection materials provided below.

Description of sample materials

Five samples (tools) are provided:

- 3.2.1 Sample data-entry form for collecting data from the annual reports and registers of health facilities;
- 3.2.2 Sample tracking form for a sample of patients;
- 3.2.3 Sample interview form for health care staff and managers of health facilities;
- 3.2.4 Sample interview form for health authorities;
- 3.2.5 Sample household survey questionnaire.

A brief reminder of the steering committee's objectives and the data it wishes to collect in order to meet these objectives is included for each sample.

PRECAUTIONS FOR USE

The sample data-collection materials provided are tools that the steering committee may use to develop its own data-collection materials.

Precaution No. 1: They should not, in any circumstances, be used as models. The samples provided here meet some (but not all) of the objectives and make it possible to collect a selection of useful and pertinent data in a given context. In order to develop appropriate data-collection materials, it is therefore preferable not to "copy" existing data-collection materials and/or those that have been used with success, but rather to begin by listing the data one wishes to collect (see above-mentioned procedure).

Precaution No. 2: They are not exhaustive. Only five samples of data-collection materials (corresponding to five sources of information) are provided. All the other necessary materials may be devised in a similar fashion.

3.2.1 Sample data-entry form for collecting data from the annual reports and registers of health facilities

Objectives of the steering committee

The annual reports and registers of health facilities may be used to collect data that meet various objectives: objective 2 (to establish a basis for selecting the target population); objective 3 (to establish a basis for selecting the partner health care providers); objective 4 (to establish a basis for selecting the health services to be covered); objective 6 (to establish a basis for calculating premiums based on the health expenses of the target population); and objective 7 (to establish a basis for calculating premiums based on the operating costs of health facilities).

In the following sample, the steering committee pursues only objectives 3 and 6. It has not yet pre-selected the scheme's partner health care providers and is seeking data to be used in making this selection (objective 3). It wishes to establish a basis for calculating premiums based on the health expenses of the target population (objective 6). It does not yet know which formula for calculating the pure premium (general formula or specific formula) it will use.

SAMPLE DATA-ENTRY FORM

Source: **Annual reports and registers**

Health facility: _____

District, Address: _____

Date of collection: _____

Frequentation and utilization of health facility

Reference population		*Year*	
Number of new cases		*Year*	
Total number of utilizations		*Year*	
Number of users (each one counted once)		*Year*	

Calculate frequentation rates to use in preparing selection of partner health facilities (objective 3)

Probability, frequency and average quantity covered

Name of service	*Number of utilizations*	*Number of users (each one counted once)*	*Number of units consumed*

Calculate the **frequency of utilization** of the health service (objective 6 – specific formula)

Calculate the **probability of consuming** the health service (objective 6 – general formula)

Calculate the **average quantity** covered (objective 6 – general formula)

Average unit cost

Names of pathologies			
Prevalence rate			
Average cost of a consultation			
Average cost of a prescription			
Average cost of laboratory tests			

Calculate the **average unit cost** of each service (objective 6 – regardless of which formula is used)

List of information to be collected

If the steering committee has already drawn up an implementation chart, the list of information to be collected from the annual reports and registers of the health facilities has already been established.

The various items of information to be retrieved from the annual reports and registers may be used to calculate the frequentation rates of the health facilities. These rates may serve as criteria to be applied in the process of selecting the health facilities (objective 3). The following information is required:

- the number of new cases registered by the health facility;
- the population of the catchment area of the health facility (if unavailable from the health facility, this item of information may be obtained from the health coverage plan).

The annual reports and registers may be used to collect various items of information that will serve as inputs in calculating the probability, average quantity covered, average unit cost and frequency of utilization of each health service.

In order to calculate the probability, the following information must be collected:

- the proportion of health facility users who use the service.

In order to calculate the average quantity covered, the following information must be collected:

- the number of utilizations of the health service (or number of units consumed) per user and per year.

In order to calculate the average unit cost, the following information must be collected:

- the average unit cost of utilizing the health service for each pathology, and the prevalence rate of each pathology.

In order to calculate the frequency of utilization, the following information must be collected:

- the share accounted for by the health service in the total number of cases treated by the health facility, i.e. the number of utilizations of the health service divided by the number of utilizations of the health facility.

3.2.2 Sample tracking form for a sample of patients

Objectives of the steering committee

Tracking a sample of patients is a means of collecting data that may, in turn, be used to calculate the average quantity covered and the average unit cost (objective 6).

List of information to be collected

If the steering committee has already drawn up an implementation chart, the list of information to be collected from tracking a sample of patients has already been established. The information to be collected is as follows:

- the number of utilizations of the health service per user and per year (which may be used to calculate the average quantity of units consumed);
- the unit cost of utilizing the health service (which may be used to calculate the average unit cost).

The patient being tracked "consumed" one consultation. He or she was also hospitalized for three consecutive days.

The patient did not purchase all the prescribed medicines and consumables. In order to calculate the average unit cost of the "Medicines and medical consumables" service, the cost of the prescribed items – not the actual purchase amount – must be taken into account.

Two medical prescriptions were issued, one for medicines available at the health centre, the other for medicines available only from private pharmacies.

In many cases, providers do not limit their prescriptions to products available from the pharmacy of their health centre, adding speciality items or brand-name products that patients must purchase from private pharmacies, in particular.

This form may be used to estimate the share accounted for by these products in the total average expenses of patients. A health micro-insurance scheme may provide coverage for these products, but any decision to do so must be examined carefully, as it may lead to the over-prescription (most often at the request of the patient) of brand-name – as opposed to generic – products.

SAMPLE TRACKING FORM

Source: **Tracking a sample of patients**

Health centre: _____

District, Address: _____

Date of collection: _____

Service concerned

- ☐ Curative consultation
- ☐ Prenatal consultation
- ☐ Post-natal consultation
- ☐ Care for children aged 0-5 years
- ☐ Minor hospitalization
- ☐ Minor surgery
- ☐ Delivery

Health services

	Quantity consumed	*Unit cost*
Curative consultation	*1*	*400 MUs*
Prenatal consultation		
Post-natal consultation		
Minor surgery		
Minor hospitalization (number of days/cost of one day)	*3 days*	*800 MUs per day*
Care for children aged 0-5		
Delivery		

Medicines and medical consumables

Medicines purchased at the health centre pharmacy

Number of prescriptions	Cost of prescribed items	Purchase amount
1	*1,000 MUs*	*800 MUs*

Medicines and medical consumables to be purchased outside the health centre (private pharmacies...)

Number of prescriptions	Cost of prescribed items	Purchase amount
1	*3,000 MUs*	*/*

Note: In the case of medicines and medical consumables, the cost of the prescribed items may be distinguished from the actual purchase amount. This makes it possible to determine the percentage of patients who do not purchase all the medicines listed on the prescription owing to a lack of money or for other reasons (for example, if they consider certain medicines to be unnecessary). Nevertheless, the calculation of the average unit cost is based on the cost of the prescribed items.

Tracking a sample of patients

A sample of patients may be tracked through registers kept by the health facility. A sample of patients may be selected from the consultations register, while their consumption history is retrieved from the registers of the other services (pharmacy, laboratory, etc.) of the health facility.

If these registers are not sufficiently detailed and if the health facility keeps medical records for each patient, the necessary data may be collected from the medical records of the patients in the sample. As in the above case, a sample of patients is selected and the medical consumption of each patient over the course of a given period is recorded.

Lastly, if medical records are non-existent or incomplete, the necessary data may be collected by filling out a tracking form each time a patient in the sample utilizes the service.

The sample tracking form provided here is based on this last option, since the registers and medical records do not contain all the information sought.

3.2.3 Sample interview form for health care staff and managers of health facilities

Objectives of the steering committee

Interviews with the health care staff and managers of health facilities may be used to collect the data needed to meet various objectives.

In the following sample, the steering committee pursues only a few objectives: it wishes to increase its understanding of the health context (objective 1); it seeks to obtain information that will help guide its selection of the health services to be covered by the scheme (objective 4); and it wishes to establish a basis for negotiating agreements with health care providers (objective 9).

List of information to be collected

If the steering committee has already set up an implementation chart, then the list of information to be collected through interviews with the health care staff and managers of the health facilities has already been established. This involves information on the health context and problems relating to access to health care. It also involves identifying the health services that correspond to the population's priority health needs and those that pose problems in terms of cost recovery or financing. Lastly, these interviews may be used to collect the information needed to establish a basis for negotiating agreements with health care providers.

SAMPLE INTERVIEW FORM

Source: **Health care staff, Manager of health facility**

Health centre: _____

Interlocutor(s): _____

District, Address: _____

Date of collection: _____

Data that may be used to understand the context (objective 1)

Health situation, problems relating to access to health care

1. What are the main diseases affecting the population?
   Among children:
   Among adult women:
   Among adult men:
2. Which ones cause the greatest number of deaths?
   Among children:
   Among adult women:
   Among adult men:
3. Are there problems in your district relating to sanitation or to drinking water?
4. What are the worst periods of the year in terms of health?
5. Do users find it difficult to pay for health services?
6. At what periods of the year most particularly?
7. Do you sometimes receive requests for credit from patients who cannot pay for health expenses?
8. Have initiatives been taken to make it easier for patients to pay for health services (mutual aid funds, credit plans, etc.)? If so, which ones?
9. Do some users come from far away? From which villages?
10. Do they find it difficult to reach the health centre?

Data that may be used in selecting the health services to be covered by the scheme (objective 4)

Priority health services

11. In your opinion, what health services (preventive, curative) are essential for reducing mortality rates and the morbidity rates of certain diseases?
    Among children:
    Among adult women:
    Among adult men:
12. Which health services pose the greatest problems for you in terms of cost recovery or financing (under-utilization)?

Data that may be used to understand the current functioning of the health facility and to identify the specific aspects to be addressed in agreements (fees, standards of quality) (objective 9)

Current functioning of the health facility

13. What patient reception procedures are followed?
Example: Upon arrival, patients must first go through the health facility counter.

14. Do patients ever fail to follow these procedures?

14*(a)* If yes, in what circumstances?

15. Are patients required to wait a long time before being seen by the medical staff?

15*(a)* If yes, what is the reason for this wait?

15*(b)* What steps could be taken to shorten waiting times?

16. Does the pharmacy of the health facility sometimes have stock shortages of certain medicines?

16*(a)* If yes, to what is this attributable?
Examples: Only one supplier, centralized procurement

16*(b)* What steps might be taken to avoid stock shortages?

17. What procedures are followed in order to respect the privacy of the doctor-patient relationship and the confidentiality of medical records?

18. Do you use treatment protocols that are predefined according to pathology?

18*(a)* If yes, who defines these protocols?

18*(b)* Can you develop them further?

19. How are fee schedules established? And what is the current method of invoicing (fee-for-service, per episode of illness, etc.)?

20. Do you know whether patients sometimes offer tips to staff members in order to be cared for more quickly?

20*(a)* If yes, do you know the amount of such tips? (range)

Data that may be used to identify the interlocutors for the agreements (objective 9)

Interlocutors for the agreements

21. We plan to set up a health micro-insurance scheme.

The purpose of this scheme is to make it easier for users to pay for health services. This scheme could conclude agreements with certain health facilities in order to establish specific operating rules or fees that differ from the official fees.

Are you in a position to conclude this type of agreement?

If not, to whom should we speak?

3.2.4 Sample interview form for health authorities

Objectives of the steering committee

Interviews with the health authorities may be used to collect the data needed to meet various objectives.

In the following sample, the steering committee wishes to improve its understanding of the context (objective 1). It also wishes to establish a basis for concluding agreements with health care providers (objective 9).

List of information to be collected

If the steering committee has already drawn up an implementation chart, the list of information to be collected through interviews with the health authorities has already been established. These include information on the health context and the health care supply, as well as information on the political and institutional environment relating to health and social protection. These interviews also allow for the collection of data to be used as a basis for setting up agreements with health care providers.

SAMPLE INTERVIEW FORM

Source: **Health authorities**

Interlocutor(s): _____

Organization: _____

Date of collection: _____

Data that may be used to understand the context (objective 1)
Health context, problems concerning access to health care

1. What are the main health problems of the population?
   Among children:
   Among adult women:
   Among adult men:
2. Which ones cause the most deaths?
   Among children:
   Among adult women:
   Among adult men:
3. What are the main health indicators?
   Mortality rate =
   Infant mortality rate =
   Maternal mortality rate =
   Undernutrition rate =
4. Are there problems in the region relating to sanitation or to drinking water?
5. What are the worst periods of the year as far as health is concerned?

6. Do the users of the health facilities find it difficult to pay for health services?

6(a) If so, which services in particular?

6(b) At what time of the year in particular?

7. Have initiatives been developed to make it easier for patients to pay for health services (mutual aid fund, credit plans, etc.)? If so, which ones?

8. Do the users of health facilities find it difficult to access the health facilities?

8(a) In which districts is this problem particularly pronounced?

Data on the health care supply

9. How is the health care staff of the following establishments perceived by users:
- the <NAME> hospital?
- the <NAME> health centre?
- the <NAME> clinic?

10. Is the quality of the health services at these establishments sometimes inadequate?

10(a) What are the main problems encountered?
Examples: Long waits, health care staff absenteeism, stock shortages of medicines, poor condition of equipment, etc.

11. Do programmes exist for prevention, distribution of medicines and free screening (particularly for HIV infection, tuberculosis)?

Political and institutional environment

12. What are the main components of the national health policy?
In particular, as concerns:
- privatization of the health care supply?
- level of autonomy in managing health care facilities?
- sector financing (cost recovery)?
- role accorded to the people?
- policy regarding medicines?
- prevention strategies?

12(a) What is the status of the application of each component of this policy?

13. Have specific mechanisms been set up by the State to:
- monitor and improve the quality of health care at the local level?
- improve the financial accessibility of health services?

14. Does a special legal environment exist for health micro-insurance schemes?
For example, existence of a mutual benefit insurance code, an insurance code, a social security code.

14(a) Is there a legal framework that enables health micro-insurance schemes to conclude agreements with the health care supply? Does the health care supply benefit from a degree of administrative, financial and/or managerial autonomy? If so, which one?

15. When was the social security sickness insurance branch established?

16. Are reforms of the sickness insurance branch under way?

17. What percentage of the population is covered by the social security sickness insurance branch?

18. What are the qualifying conditions for the sickness insurance provided by social security?

Sample interview form *(cont.)*

19. What type of coverage does sickness insurance offer in terms of health expenses?

20. How much are sickness insurance contributions (approximately)?

Share paid by employers (as % of wages):

Share paid by employees (as % of wages):

21. Are there any mechanisms of social protection for disadvantaged persons? How do these work (types of beneficiaries, benefits, etc.)?

Data that may be used to identify the interlocutors for the agreements (objective 9)

Interlocutors for the agreements

22. We plan to set up a health micro-insurance scheme. The purpose of the scheme is to make it easier for users to pay for health services. This scheme could conclude agreements with certain health facilities in order to establish specific operating rules or fees that differ from the official fees.

Do you consider this type of agreement to be possible?

Who has the authority to conclude this type of agreement: The managers of the health facilities? The regional board of health inspectors? The health ministry?

3.2.5 Sample household survey questionnaire

Objectives of the steering committee

Household surveys may be used to collect the data needed to meet various objectives.

In the following sample, the steering committee wishes to establish a basis for selecting the partner health care providers (objective 3); establish a basis for selecting the priority health care services to be covered (objective 4); identify the services for which a third-party payment is particularly important (objective 5); evaluate the level of the target population's willingness to pay (objective 8) and the possible seasonal variations in the latter. It also wishes to establish a basis for calculating premiums (objective 6), but does not yet know which formula for calculating the pure premium it will use (the general formula or the specific formula).

List of information to be collected

If the steering committee has already drawn up an implementation chart, the list of information to be collected through household surveys has already been established.

These surveys may be used to collect information needed to:

- evaluate the perceived quality of the health facilities;
- identify the health services that the health micro-insurance scheme may cover as a matter of priority because they correspond to the expressed health needs of the population or because they pose the greatest financial difficulty to the population;
- determine the services for which third-party payment is a priority;
- calculate premiums, and in particular, to calculate the probability of consuming each health service (useful if applying the general formula for calculating the pure premium) and the frequency of utilization of each health service (useful if applying the specific formula);

- estimate the target population's willingness to pay;
- ascertain people's responses to illness in terms of the means of treatment sought (self-medication, traditional pharmacopoeia, purchase of medicines from sidewalk vendors or from the pharmacy, hospital consultation, etc.) and their means of financing health expenses (liquidation of savings, borrowing money, help from a close friend or relative, etc.), prior to the establishment of the health micro-insurance scheme. The same questions may later be put to scheme beneficiaries. A comparison of responses pertaining to the initial situation and those pertaining to beneficiaries covered by the scheme will allow for an initial estimation of the impact[4] of the health micro-insurance scheme.

SAMPLE SURVEY QUESTIONNAIRE

Source: **Household survey**

Questionnaire No.: _____

Name of person surveyed: _____

Village/neighbourhood: _____

Date of survey: _____

Information that may be used to compare different health facilities on the basis of quality (perceived by users) and to establish a basis for selecting partner health care providers (objective 3)

Perceived quality of health facilities

Have you already used the health facility _____ ?
☐ Yes ☐ No (If no, please proceed to question No. 10)

1. Please rate the quality of patient reception:
☐ Very good ☐ Good ☐ Average ☐ Poor ☐ Very poor

2. Please rate the competency of the medical staff:
☐ Adequate ☐ Inadequate

3. Did the medical staff take the time to listen to you?
☐ Yes ☐ No

4. Are women treated by female medical staff?
☐ Yes ☐ No

5. At the time of your last consultation or hospitalization did you have to pay tips to certain members of the medical staff?
☐ Yes ☐ No

[4] Nevertheless, an accurate measurement of the impact would require studying "control populations" not covered by the scheme, since improvements noted by beneficiaries might be attributable to factors that affect other population groups as well (in other words, the impact of the scheme must be isolated from other potential improvement factors).

Sample survey questionnaire *(cont.)*

6. How long did you have to wait the last time before you were treated?
☐ More than 7 hours ☐ Between 4 and 7 hours ☐ Between 1 and 4 hours
☐ Less than 1 hour

6*(a)* How long did you have to wait the last time before you were given an appointment?
☐ More than 1 month ☐ Between 1 week and 1 month ☐ Less than 1 week
☐ Never made an appointment

7. Are the opening hours of the health facility compatible with your working hours?
☐ Yes ☐ No

8. Are certain members of the health care staff sometimes absent during opening hours for reasons not related to their work?
☐ Yes ☐ No

9. The last time a physician at the health facility issued you a medical prescription:
☐ All the medicines were available at the health facility pharmacy
☐ Some medicines were not available

Information that may be used to calculate probability and frequency (objective 6)

10. Composition of the respondent's family

	Men	Women	Children (< 15 years)
Number			

Information that may be used to calculate the probability of consuming the various health services at least once in the course of the year (objective 6 – when using the general formula for calculating the pure premium)

If the general formula for calculating the pure premium has been chosen

11. Since <DATE, RELIGIOUS HOLIDAY>, has anyone in your family been ill (excluding childbirth)?
☐ Yes ☐ No
If yes, how many persons were ill at least once?
Note: Persons who were ill several times should be counted only once.
Children _____ Adult women _____ Adult men _____

12. Since <DATE, RELIGIOUS HOLIDAY >, have there been any births in your family?
☐ Yes ☐ No If yes, how many women have given birth? _____

Information that may be used to calculate the frequency of utilization of the health services (objective 6 – when using the specific formula for calculating the pure premium)

If the specific formula for calculating the pure premium has been chosen

11. Since <DATE, RELIGIOUS HOLIDAY>, has anyone in your family been ill (excluding childbirth)?
☐ Yes ☐ No
If yes, how many cases of illness have there been?
Children _____ Adult women _____ Adult men _____

12. Since <DATE, RELIGIOUS HOLIDAY >, have there been any births in your family?
☐ Yes ☐ No If yes, how many women have given birth? _____

Question No. 13 may be used to calculate probability or frequency (objective 6). It may also be used to understand the means of treatment sought and the means of financing used prior to the start-up of the scheme (useful for measuring the impact of the scheme)

Regardless of the calculation formula used: general or specific

13. During the last episode of illness in your family, what means of treatment did you seek? *(Several replies possible.)*

☐ No treatment sought ☐ Healer and traditional pharmacopoeia
Purchase of medicines... ☐ from sidewalk vendors ☐ from pharmacy
☐ Consultation at dispensary ☐ Hospitalization at health centre
☐ Consultation at health centre ☐ Hospitalization at public hospital
☐ Consultation at public hospital ☐ Hospitalization at clinic
☐ Consultation at private practice ☐ Other: _____
☐ Consultation at clinic

And how did you find the money to pay for this treatment?

☐ Money set aside at home
☐ Sale of possessions (cattle, jewellery, tools, means of transportation...)
☐ Loan from friends/neighbours/relatives
☐ Loan from a savings and credit fund
☐ Loan from a merchant ☐ Collection taken up from coworkers
☐ Gifts from friends/neighbours/relatives ☐ Tontine
☐ Other: _____

Information that may be used to identify the health services that pose financial difficulties and to establish a basis for selecting the health services to be covered (objective 4)

Priority health services

14. The last time a physician issued a medical prescription (to you or to a member of your family), did you purchase all the medicines listed on the prescription?

☐ Yes ☐ No

If No:

☐ We purchased only the medicines that were necessary
☐ We purchased only some of the medicines because the pharmacy was out of certain medicines
☐ We purchased only some of the medicines because we did not have enough money
☐ We did not purchase any medicines owing to a lack of money

15. Were you or any member of your family required to forego, at least once in the course of last year, one of the following services, owing to a **lack of money**?

(non-exhaustive list) ☐ Pharmacy ☐ X-ray ☐ Laboratory
☐ Consultation at dispensary ☐ Hospitalization at health centre
☐ Consultation at health centre ☐ Hospitalization at public hospital
☐ Consultation at public hospital ☐ Hospitalization at clinic
☐ Consultation at private practice
☐ Consultation at clinic

16. Starting at what level of medical expenses are you required to resort to outside assistance (loan, gift, credit) or to the sale of a possession? *(non-exhaustive list)*

☐ 500 MUs ☐ 1,000 MUs ☐ 2,000 MUs
☐ 3,000 MUs ... ☐ 10,000 MUs

Sample survey questionnaire *(cont.)*

Information that may be used to identify the health services considered to be the most useful, and to establish a basis for the selection of the health services to be covered (objective 4)

Willingness to join scheme and priority health services

17. Would you be interested in joining a health insurance scheme?
☐ Yes ☐ No
Briefly explain what this would entail.

18. If you answered yes to question 17, which health services would you prefer that this scheme cover as a matter of priority?

Please check no more than **4 services maximum**

☐ Pharmacy ☐ X-rays ☐ Laboratory
☐ Maternity (prenatal care, delivery, post-natal care)
☐ Consultation at dispensary ☐ Hospitalization at dispensary
☐ Consultation at health centre ☐ Hospitalization at health centre
☐ Consultation at public hospital ☐ Hospitalization at public hospital
☐ Consultation at private practice ☐ Hospitalization at clinic
☐ Consultation at clinic ☐ Other (please specify) _____
☐ Emergency transportation

Information that may be used to evaluate the amount and seasonal variation of willingness to pay, as it relates to variations in income (objective 8)

Income and ability to pay

19. During which months of the year is your income the highest?
☐ January ☐ February ☐ March ☐ April
☐ May ☐ June ☐ July ☐ August
☐ September ☐ October ☐ November ☐ December

20. If you were to join a health micro-insurance scheme, with what frequency would you be able to pay premiums and at what times of the year?
☐ Once per year (best months: _____)
☐ Once every six months (best months: _____ and _____)
☐ Once every three months ☐ Once a month ☐ Once a week

21. What premiums amount would you be prepared to pay per person and per period?
Once per _____ Amount for each person in the family: _____

22. For how many persons would you wish to pay premiums? _____

3.3 Size of sample for conducting household surveys

The following table provides indicative values for the minimum size of a sample (based on a proportion of p = 0.5, a confidence interval of $\mathrm{I}\ P_{0.95}$ and a margin of error of 5 per cent).

Size of target population	1 000	3 000	5 000	10 000	20 000	30 000	40 000	50 000
Minimum size of sample	278	341	357	370	377	379	381	381

3.4 Examples of processing collected data to produce usable information

Suggested procedure for processing and utilizing collected data

The steering committee may use the implementation chart to process the collected data into usable information. This information may subsequently be used in designing the health micro-insurance scheme. The last two columns of the chart facilitate the analysis and utilization of the collected data by specifying the purpose of each item of information sought. For more details on the implementation chart, please refer to:

▶ *Complete the implementation chart, Step 1: Define the data-collection procedure,* Volume 1, Chapter 3, page 37.

The steering committee may also be aided by the examples of processing the collected data and suggestions for its use, which are presented in the following tools.

Description of the tools

Section 3.4 actually contains 10 tools, each of which corresponds to one of the 10 data-collection objectives. The tool presented in section 3.4.1 corresponds to objective 1, the tool presented in section 3.4.2 corresponds to objective 2, and so forth.

These tools describe how to make the information usable: in some cases, the information collected may be utilized directly without being processed; in others, it must be processed in order to produce an indicator, in which case the formula for calculating the indicator is provided.

Suggestions on how to use the information and indicators in order to meet the various objectives are also provided. However, the information and indicators are utilized primarily in the next phase – when defining the characteristics of the future health micro-insurance scheme.

Methods of calculating indicators and suggestions for using the data are illustrated in numerous practical examples.

PRECAUTIONS FOR USE

Precaution No. 1: The suggested methods of calculating indicators are not absolute. The data used to calculate indicators are often collected from interviews or surveys. A question may, in fact, be phrased in a number of different ways to obtain the same indicator.

> **Example:** In order to find out what premium level households are willing to pay, researchers may pose a direct question: "What premium amount would you be prepared to pay each year for yourself and your family?" Respondents may also be asked to choose between several contribution brackets: "Would you be prepared to pay, for yourself and your family, premiums ranging between: ☐ 1,000 and 2,000 MUs per year? ☐ 2,001 and 3,000 MUs per year? etc." Alternatively, respondents may be asked to indicate a maximum contribution amount: "What maximum premium amount would you be prepared to pay for yourself and your family: ☐ 500 MUs per year? ☐ 1,000 MUs per year? ☐ 2,000 MUs per year? etc." Lastly, respondents may be asked to indicate the average yearly amount they spend on health: "How much, on average, is your annual health budget for yourself and your family: ☐ 500 MUs per year? ☐ 1,000 MUs per year? ☐ 2,000 MUs per year? etc."

The data obtained will differ depending upon the type of question asked; thus, the use made of the replies will also differ. For this reason, the methods of calculating indicators suggested below are only a few of the many possible, and are directly related to the way in which the questions are phrased.

Precaution No. 2: The suggested indicators are provided for information purposes only. When several indicators are suggested for the same objective, the steering committee may decide to calculate only some of them.

> **Example:** With respect to the perceived quality of health facilities, a few of the suggested indicators are sufficient.

Precaution No. 3: The suggestions for utilizing the information are optional. The sections entitled "Utilization" provide suggestions for utilizing the information or the indicators. These suggestions are included solely by way of illustration.

> **Example:** An analysis of the results of household surveys may point to the need for an emergency transport service for the inhabitants of certain villages. This specific need may be taken into account when defining benefits. One possible solution is to offer an optional emergency patient evacuation service in exchange for the payment of an additional premium.

Precaution No. 4: The suggestions for utilizing the information are not exhaustive. The sections entitled "Utilization" offer points for consideration, as well as solutions and mechanisms, but others no doubt exist! This section could thus be enlarged and personalized by each user.

Precaution No. 5: The practical examples provided are particularly helpful for assimilating the methods of calculating, processing and utilizing the data. Generally speaking, they are based on real-life situations.

3.4.1 Example of processing the data collected for objective 1: "To understand the context"

No processing

The information collected for the purposes of this objective is utilized directly without being processed.

Utilization

The information may be used to gain an understanding of the context from the economic, demographic, social, health, health care supply, political and legal perspectives.

3.4.2 Example of processing the data collected for objective 2: "To establish a basis for selecting the target population"

Objective quality of the health facilities used by target population

No processing

Information concerning the objective quality of the health facilities, derived from quality assessments, consists of "raw" data that may be used without processing. Examples include the physical condition of buildings and opening hours. It also consists of processed data, known as indicators.

These indicators have usually already been calculated as part of the quality assessment. Consequently, the steering committee is not required to perform any particular calculations in order to utilize the data.

Utilization

Information concerning the objective quality of health facilities may serve as criteria for selecting the target population insofar as it is preferable for the latter to have access to a quality health care supply.

Access to the health facility

Processing

The information collected is used to calculate the frequentation rate for each residential zone.

Methods of calculating indicators

The information collected includes the number of new cases in each residential zone and the size of the population of each zone.

The frequentation rate is calculated according to the following formula:

$$\textbf{Frequentation rate of residential zone} = \frac{100 \times \text{Number of new cases in residential zone}}{\text{Total population of this zone}}$$

Utilization

The frequentation rate makes it possible to measure the level of access to the health facility enjoyed by people living in each residential zone. It may thus be used to identify those zones in which access is easy and those in which access is complicated by geographic factors, financial factors, etc.

The health micro-insurance scheme could initially be set up primarily in areas where the health facility exerts a strong attraction, i.e. where there are high frequentation rates. The scheme could also take specific steps to increase the attraction of areas where frequentation rates are low, such as assuming responsibility for transport charges, charging lower premiums for people living farther away, etc.

PRACTICAL EXAMPLE

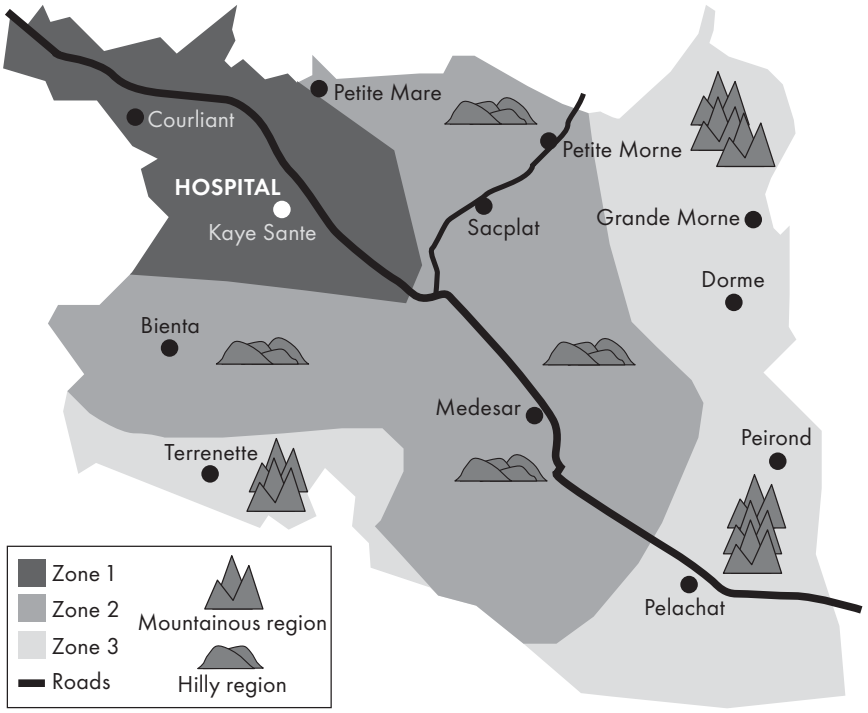
A private non-profit regional hospital wishes to establish a health micro-insurance scheme. Although the hospital's services are of very good quality, its frequentation by the population of its catchment area remains low for reasons relating to geographic and financial accessibility.

The various services of the hospital register their patients' place of residence, and these data are compiled by the statistics service.

Based on data provided by the statistics service, a table showing the hospital's frequentation rates has been drawn up. This table summarizes the data according to district; however, a more detailed breakdown according to village was used to produce the map.

Districts	Population	Number of hospitalizations	Frequentation rate	
Kaye Sante	30 900	2441	7.9%	Zone 1
Courliant	12 200	817	6.7%	
Bienta	17 500	700	4.0%	Zone 2
Petite Mare	30 700	1167	3.8%	
Medesar	23 600	826	3.5%	
Sacplat	23 400	749	3.2%	
Petite Morne	17 500	473	2.7%	
Grande Morne	11 400	217	1.9%	Zone 3
Pelachat	23 300	396	1.7%	
Dorme	16 200	227	1.4%	
Peirond	14 100	85	0.6%	
Terrenette	9 500	48	0.5%	
Total	**230 300**	**8146**	**3.5%**	

On the basis of the calculated frequentation rates, three broad zones within the hospital's catchment area may be distinguished. Displaying these three zones on a regional map allows for a better understanding of the reasons for this unequal frequentation.



This map shows that the frequentation rate decreases as the distance increases: people living in mountainous, isolated areas have the lowest frequentation rate. This problem of geographic accessibility is exacerbated by the fact that the hospital is not centrally located within its catchment area.

Trend of socio-economic development among the target population, Social aspects, Practices of mutual aid in the event of illness

No processing

The information collected under these headings is utilized directly without being processed.

Utilization

Among the factors contributing to the success of a health micro-insurance project are: the level of literacy, economic dynamism, a certain degree of experience with community-based organization, the existence of persons capable of managing premiums, the existence of practices of mutual aid in the event of illness, etc. This information may be used as criteria for selecting the target population.

Means of treatment sought and methods of financing access to health care

Processing

A calculation is made of the percentage of replies for each means of treatment and each method of financing.

Methods of calculating indicators

Information concerning the means of treatment sought

Sample question: During the last episode of illness in your family, what means of treatment did you seek?

☐ No treatment sought ☐ Purchase of medicines from sidewalk vendors

☐ Consultation at dispensary... *(non-exhaustive list)*

A calculation is made of the percentage of "No treatment sought" replies, the percentage of "Purchase of medicines from sidewalk vendors" replies, etc.

Information concerning methods of financing

Sample question: With regard to the most recent episode of illness in your family, how did you find the money to pay for treatment?

☐ Money set aside at home ☐ Gifts from friends/neighbours/relatives

☐ Sale of possessions... *(non-exhaustive list)*

A calculation is made of the percentage of "Money set aside at home" replies, the percentage of "Gifts from friends/neighbours/relatives" replies, etc.

3.4.3 Example of processing the data collected for objective 3: "To establish a basis for selecting the partner health care providers"

This refers to the providers whose health services will be covered by the scheme.

Information concerning the health care supply

No processing

The information collected – geographic distribution of the health care supply, monograph for each provider – is utilized directly without being processed.

Utilization

The monographs for each provider – presented in summarized form – may be used to facilitate a comparison of providers and to establish a basis for selecting partner health care providers.

Objective quality of the health facilities

No processing

Please refer to:

▶ **3.4.2** above.

Utilization

Information concerning the level of objective quality may be utilized as criteria for selecting health facilities. The health micro-insurance scheme may, as a matter of priority, conclude agreements with the health facilities that have the highest levels of objective quality.

Perceived quality of the health facilities

Processing

Information concerning the perceived quality of health facilities, derived from household and patient surveys, may be used to calculate indicators of perceived quality.

The calculation of the indicators and their utilization depend upon the questions addressed to households and patients. Included below are merely one sample question and method of calculation for each indicator.

Methods of calculating indicators

Information concerning the quality of patient reception

Sample question: Please rate the quality of patient reception:

☐ Very good ☐ Good ☐ Average ☐ Poor ☐ Very poor

The quality indicator is calculated in terms of the percentage of "Very good", "Good", "Average", etc. replies.

Information concerning the medical staff: competency, ability to listen and empathize, existence of female medical staff

Sample question: Please rate the competency of the medical staff:

☐ Adequate ☐ Inadequate.

The quality indicator is calculated in terms of the percentage of "Adequate" replies. The same method is used for the other indicators.

Utilization

The indicators of perceived quality for the various health care providers may be presented in a summary table, which helps to facilitate comparison among providers. The providers whose perceived quality is highest are those whose quality indicators show the highest percentages. The perceived quality must be taken into account when selecting providers, as it will account for a large part of the scheme's attractiveness to beneficiaries.

Frequentation

Processing

The information collected may be used to calculate the frequentation rate of the health facility.

Methods of calculating indicators

Information concerning the number of new cases and the size of the population of the catchment area

The frequentation rate = 100 × Number of new cases/Population

Utilization

The frequentation rate may be used as a criterion for selecting partner health facilities. The higher this rate, the greater is the likelihood that the health services in question are accessible, of good quality and well regarded by users. The health micro-insurance scheme may, as a matter of priority, conclude agreements with health facilities that have the highest rate of frequentation.

PRACTICAL EXAMPLE

A district health centre covers a population estimated at 15,000 inhabitants in 2000. Women of childbearing age accounted for 4.5 per cent of the population, or 675 persons. Children aged 0 to 1 year accounted for 4 per cent of the population, or 600 persons.

Among the services provided in the year 2000, the health centre registered:

- 3,500 new cases of curative consultation;
- 350 initial prenatal consultations (PNCs);
- 410 DTP1 vaccinations (first dose of the diphtheria-tetanus-pertussis vaccine).

The frequentation rates for these three services were thus as follows:

- Curative consultations: 23.3 per cent (3,500/15,000);
- PNCs (initial consultations): 51.9 per cent (350/675);
- DTP1 vaccinations: 68.3 per cent (410/600).

Note: Frequentation rates are calculated on the basis of new cases, i.e. each new episode of illness or case of pregnancy seen for the first time at the health centre. If a patient must return one or more times for treatment in connection with the same episode of illness, these new visits are counted as old cases and are not taken into account in calculating the frequentation rate. On the other hand, if, over the course of the year, a patient utilizes the health facility in connection with five different episodes of illness, these are counted as five new cases.

Establishment of certain health services in the event of an inadequate health care supply

Processing/utilization

The establishment of such services falls outside the scope of this Guide. Consequently, the utilization of the data is not discussed in this case.

3.4.4 Example of processing the data collected for objective 4: "To establish a basis for selecting the health services to be covered"

Overview of the health services

No processing

The information collected is utilized directly without being processed.

Utilization

This information helps to provide an idea of the health services offered by each health facility and the method of invoicing used for these services. This information may be used as a basis for selecting the health services to be covered by the scheme.

Example: If the health centre bills each health service separately, the scheme will be able to offer varying levels of coverage, depending upon the health service in question. It might, for example, offer the following: 80 per cent of expenses incurred for each "Consultation" service; 65 per cent of expenses incurred for each "X-ray" service; a flat-rate benefit for each "Laboratory" service; etc.

If the health centre bills health services in clusters (for example, a global fee that includes consultations, and if necessary, medicines and examinations), the scheme will have to offer identical coverage levels for all health services included in the cluster (for example, 80 per cent of expenses incurred for consultations, medicines, laboratory tests, X-rays) or even a comprehensive fee for this cluster (for example, a flat-rate benefit of 1,500 MUs for the "consultation/pharmacy/laboratory/X-ray" cluster).

Priority health services in terms of real health needs

No processing

The information derived from studies concerning the health situation and interviews with the health care staff are used directly without being processed.

Utilization

This information gives an indication of the health needs of the population: preventive and curative health services that contribute to reducing significantly both the morbidity rates of certain illnesses and mortality rates; a patient evacuation system. These "real" needs may be taken into account when selecting the health services to be covered by the scheme.

Priority health services in terms of felt and expressed health needs

Processing

Information collected from household surveys (felt and expressed needs) may be used to identify the health services that are considered to be a priority by a large majority of the target population. Included below are merely one sample question and method of identifying these priority services.

Methods of calculating indicators

Information concerning the population's felt and expressed health needs

Sample question: Would you be interested in joining a health insurance scheme?

☐ Yes ☐ No

If yes, which services would you prefer that this scheme cover as a matter of priority? (Please check no more than 4 services maximum)

☐ Pharmacy ☐ X-rays ☐ Laboratory

☐ Maternity (prenatal care, delivery and post-natal care)

☐ Consultation at dispensary ☐ etc. *(non-exhaustive list)*

A calculation is made of the number of times each service is ticked on all the questionnaires.

Utilization

The health services considered to be a priority are those that are ticked the most number of times. These services may be proposed first and foremost when selecting the services to be covered by the scheme.

Health services difficult to access for financial reasons

Processing

The information collected on the financial difficulties encountered when using the health services and with respect to various levels of health expenses may be used to calculate the following indicators: rates of total, partial or temporary exclusion; rates of difficulty.

Included below are merely one sample question and method of calculating each indicator.

Methods of calculating indicators

Information concerning total exclusion from a health service

Sample question: Were you or any member of your family required to forego, at least once in the course of last year, one of the following services owing to a lack of money?

☐ Pharmacy ☐ X-ray ☐ Laboratory ☐ Consultation at dispensary
☐ Hospitalization at dispensary ☐ etc. *(non-exhaustive list)*

The rate of total exclusion for each health service on the list is then calculated according to the following formula: Rate of total exclusion$_{(service)}$ = Percentage of respondents who ticked the service.

Information concerning partial exclusion from a health service

Sample question (concerning the "Pharmacy" service): The last time a physician issued a medical prescription (to you or to a member of your family), did you purchase all the medicines listed on the prescription? ☐ Yes ☐ No

If no, please tick one of the following:

☐ We purchased only the medicines that were necessary.
☐ We purchased only some of the medicines because the pharmacy was out of certain medicines.
☐ We purchased only some of the medicines because we did not have enough money.
☐ We did not purchase any medicines owing to a lack of money.

The partial exclusion rate$_{(pharmacy)}$ is calculated in terms of the percentage of replies indicating the following: "We purchased only some of the medicines because we did not have enough money" or "We did not purchase any medicines owing to a lack of money".

Information concerning temporary exclusion from a health service

Sample question (concerning the "Hospitalization" service): The last time someone in your family was hospitalized, did you have to wait some period of time before being able to hospitalize the person concerned? ☐ No ☐ Yes

If yes, please tick one of the following:

☐ We waited several hours in order to get the necessary funds together (< 24 hours).
☐ We did not have enough money and had to go about collecting it, which took more than 24 hours.

The rate of temporary exclusion$_{(hospitalization)}$ is then calculated in terms of the percentage of replies stating that "We did not have enough money and had to go about collecting it, which took more than 24 hours".

Note: This type of question may be asked in regard to other health services.

Difficulties expressed by the population when confronted with a particular level of health expense

This involves asking households to indicate the amount at which they begin to have difficulty meeting health expenses.

Sample question: Starting at what level of medical expenses are you required to resort to outside assistance (loan, gift, credit) or to the sale of a possession?

☐ 500 MUs ☐ 1,000 MUs ☐ 2,000 MUs ... ☐ 10,000 MUs

The rate of difficulty corresponding to the various levels of expense is calculated as follows:

- Rate of difficulty$_{(500\ MUs)}$ = Percentage of persons who ticked the box "500 MUs".
- Rate of difficulty$_{(1{,}000\ MUs)}$ = Percentage of persons who ticked the box "1,000" + Percentage of persons who ticked the box "500 MUs". Logically, those who have difficulty meeting medical expenses in the amount of 500 MUs will also have difficulty meeting higher expenses.
- Etc.

Utilization

The rate of total exclusion is used to identify the services that pose genuine problems in terms of financial accessibility. These services may then be proposed, as a matter of priority, when selecting the services to be covered by the scheme.

The rate of partial exclusion helps to identify a lack of follow-up or a failure to observe treatment protocols for financial reasons: the patient fails to purchase all the medicines he or she needs, to carry out follow-up visits or to complete regular check-ups.

The services that present a high rate of partial exclusion may be selected as a matter of priority. Moreover, specific solutions to these problems may be sought when defining benefits.

Example: The scheme may plan to offer a flat-rate benefit per episode of illness that includes one or more consultations, laboratory tests and medicines.

The rate of temporary exclusion helps to identify those services for which a patient's lack of available funds causes a delay in treatment and thus contributes to worsening his or her health status. Services that demonstrate a high rate of temporary exclusion may be selected as a matter of priority. In addition, specific methods of coverage aimed at reducing delays in obtaining health services – such as setting up a third-party payment mechanism – may be envisaged.

The rates of difficulty corresponding to respective levels of expense may be used to identify the health services that constitute a minor financial risk for a large share of the population. When defining benefits, removing such services from the benefits to be provided will no doubt help to reduce premiums while simultaneously meeting the needs of the majority in terms of coverage. For details on the procedure to follow, please refer to the practical example below.

PRACTICAL EXAMPLE

A management committee of a rural health centre wishes to set up a health insurance scheme for its users. With the support of an NGO, it conducts a household survey in the catchment area of the health centre. One of the questions concerns the level at which households begin to experience difficulty meeting their health care expenses.

The replies to this question were as follows:

Amount (MUs)	Percentage of replies	Cumulative percentage = Rate of difficulty
1000	3%	3%
2000	31%	34% (3% + 31%)
3000	10%	44%
4000	4%	48%
5000	18%	66%
6000	2%	68%
7000	0%	68%
8000	2%	70%
9000	0%	70%
10000	14%	84%
...	...	...

According to the survey, 3 per cent of households begin to experience difficulty at 1,000 MUs. Starting at 4,000 MUs, a cumulative percentage of nearly 50 per cent of households reach the limit of their ability to provide their own financing.

After analyzing the fee schedules of the health centres, the steering committee notes that expenses less than or equal to 1,000 MUs correspond to consultations for minor ailments.

If this service is not considered to be a priority from the standpoint of other indicators and elements of selection (visibility of the scheme, for example), it could possibly be withdrawn from the benefits offered by the scheme. This would make it possible to offer lower premiums, while at the same time responding to the needs of the majority in terms of coverage.

Identification of population sub-groups with specific needs

No processing

Information collected from the health care staff and managers of health facilities is utilized directly without being processed.

Examples: The population of a remote village needs a transport service to evacuate patients in case of emergency; a particular socio-occupational group has a particularly high risk of employment accidents, requiring more emergency hospitalizations than the average for the target population; a women's association is particularly interested in health education services.

Utilization

The identification of these target groups and the determination of their specific needs may be confirmed by the results of household surveys (see below).

This information may be used when defining the benefits to be offered by the scheme. Services responding to specific needs may be proposed as options, in exchange for the payment of an additional premium. Nevertheless, the introduction of several benefit plans makes management more complex and may constitute an insurmountable difficulty when management records are not computerized.

Determining the specific needs of these sub-groups

Processing

This involves further breaking down the replies to questions concerning the felt and expressed needs of the target population on the basis of the characteristics of the respondents. Respondents are divided into homogenous sub-groups according to place of residence, type of occupation, etc. The number of times each service is ticked for each sub-group is then counted again. A comparison of the results obtained for the different sub-groups with those obtained for the total population surveyed (all questionnaires) will help to determine whether there are specific needs among certain sub-groups of the population.

Methods of calculating indicators

First example: Need for a patient evacuation service on the part of the inhabitants of certain villages

A calculation is made of the percentage of respondents – from among the population of the village concerned and from among the entire population surveyed – who considered an "Emergency transport" service to be a priority. A comparison is then made of these two percentages.

Example: The "Emergency transport" service is ticked on 30 out of 40 questionnaires (75 per cent) for respondents from village A, whereas it is ticked on 50 out of 200 questionnaires (25 per cent) for all respondents.

Second example: Need for an "Unplanned hospitalization" service on the part of driver mechanics

A calculation is made of the percentage of respondents – from among both the driver mechanics sub-group and the entire population surveyed – who considered an "Unplanned hospitalization" service to be a priority. A comparison is then made of these two percentages.

Note: In this case, the questionnaire must include a question on the respondent's occupation.

Utilization

If the percentages corresponding to these services are very high among the inhabitants of certain districts or among certain population sub-groups, such as occupational groups, the services may be offered as optional benefits in exchange for the payment of an additional premium.

Health services considered to be priorities owing to the fact that they pose problems of cost recovery and/or financing

Processing

The information collected may be used to identify – for each health service – problems regarding outstanding payments and/or problems regarding under-utilization.

Methods of calculating indicators

Information concerning outstanding payments

A calculation is made of the percentage of users who have not paid their last invoice, whether in whole or in part.

Information concerning the under-utilization of certain services or equipment

A calculation is made of the percentage of health facility users who use the service or equipment in question.

Utilization

The identification of problems relating to outstanding payments is of particular interest to health care providers that wish to set up a health micro-insurance scheme in order to improve cost recovery. It is also of interest to other types of promoters, insofar as problems relating to outstanding payments indicate problems of financial accessibility. The health services concerned may be proposed as a matter of priority when selecting the health services to be covered by the scheme.

In addition, when certain equipment is under-utilized, its coverage by the health micro-insurance scheme must allow for increasing its utilization and securing a return on the capital invested in it.

3.4.5 Example of processing the data collected for objective 5: "To establish a basis for determining methods of coverage: direct payment or third-party payment"

"Real" needs

No processing

The information collected from interviews with members of the health care staff is utilized directly without being processed.

Utilization

This information may be used to identify the services for which a third-party payment mechanism is, a priori, particularly appropriate. Such services include costly services and those related to urgent and/or unpredictable cases. These objective priority criteria may be taken into account when selecting the services for which third-party payment is provided.

Needs expressed by the population

Processing

The information collected from household surveys (felt and expressed needs) may be used to identify the health services for which the population considers third-party payment to be particularly useful. Provided below are merely one sample question and method of identifying these services.

Methods of calculating indicators

Needs expressed by the population

Sample question: For which services would you be interested in a mechanism, known as third-party payment, which, in exchange for the payment of a premium, would exempt you from paying for health services at the time of delivery? (maximum 3 services)

☐ Pharmacy ☐ X-ray ☐ Laboratory ☐ Consultation at dispensary

☐ Hospitalization at dispensary ☐ etc. *(non-exhaustive list)*

A calculation is made of the number of times each service is ticked on all the questionnaires.

Utilization

The health services for which third-party payment is considered to be the most useful or necessary are those ticked the most often. When designing the health micro-insurance scheme, third-party payment may be proposed for these services as a matter of priority.

3.4.6 Example of processing the data collected for objective 6: "To establish a basis for calculating premiums based on the health expenses of the target population"

Processing the collected data in order to calculate probability (→ useful if applying the general formula)

Reminder: There are two basic methods for collecting the data to be used in calculating probability: (1) Recommended method: Based on household surveys and data supplied by health facilities; (2) Alternative method: Based on management data of existing health micro-insurance schemes. Using data supplied by other schemes is simpler and less costly. Nevertheless, such data must be treated with precaution since the target populations served by these schemes do not necessarily share the same characteristics, and the methods of operation (benefit/premium combinations, for example) of these schemes affect people's behaviour and therefore the value of the data.

1. Recommended method of data collection and calculation: Based on household surveys and data supplied by health facilities

Processing

The recommended method consists of obtaining from household surveys the number of persons who were ill at least once in the course of the year, as well as information on the means of treatment they sought. These data may be used to calculate two indicators: the probability of falling ill and the proportion of sick persons who used the health facility.

This method also involves collecting, from annual reports or registers of health facilities, the number of users of the service in question and of the health facility. These data are used in calculating a third indicator: the proportion of health facility users who use the health service.

The probability of utilizing the health service is then obtained by multiplying the three indicators by each other (see section 4.5.2*(a)*, page 131).

The calculation of these indicators and their utilization depend upon the questions put to households. Provided below are merely one sample question and method of calculation.

Methods of calculating indicators

Information on the number of persons who fall ill at least once in the course of the year or during a given observation period

Sample question

Composition of the respondent's family

	Men	Women	Children (<15 ans)
Number			

Since <DATE, RELIGIOUS HOLIDAY>, has anyone in your family been ill (excluding childbirth)? ☐ Yes ☐ No

If yes, how many persons fell ill **at least once**?
Note: Persons who fell ill several times should be counted only once

- Number of adults who fell ill at least once _____
- Number of children who fell ill at least once _____

Based on all questionnaires, a calculation is made of:

- the total number of adults who fell ill at least once;
- the total number of adults in the families surveyed: sum of the "Men" and "Women" fields from the family composition table.

If the length of the observation period is three months, i.e. if three months have transpired between <DATE, RELIGIOUS HOLIDAY> and the date of the survey, the probability of falling ill for an adult is:

$$\textbf{Probability (illness)} = 1 - \left(1 - \frac{\text{Number of adults who fell ill at least once in the course of the period}}{\text{Total number of adults}}\right)^{\frac{12}{3}}$$

The same formula may be used to calculate the probability of falling ill for children.

Note: Calculating a probability for adults and a probability for children is particularly useful when the scheme plans to charge differing premiums for adults and children. Other parameters, such as age or sex, may also be taken into account in calculating probabilities and premiums.

Information concerning the means of treatment sought

Sample question

During the last episode of illness in your family, what means of treatment did you seek? *(Several replies possible)*

☐ No treatment sought ☐ Healer or traditional pharmacopoeia
Purchase of medicines... ☐ from sidewalk vendors ☐ from pharmacy
☐ Consultation at dispensary ☐ Hospitalization at dispensary
(non-exhaustive list)

Based on all questionnaires, a calculation is made of:

- the number of times each means of treatment is ticked;
- the total number of episodes of illness, i.e. the number of persons surveyed who replied to this question.

The current proportion of sick persons for each means of treatment is:

$$\textbf{Current proportion} = \frac{\text{Number of times the means of treatment is ticked}}{\text{Total number of surveyed respondents}}$$

Example: If the means of treatment "Consultation at dispensary" is ticked on 53 out of 120 questionnaires, the proportion of sick persons for this means of treatment is equivalent to: 53/120 = 44.2 per cent.

Important. The establishment of a health micro-insurance scheme is likely to lead to an increase in the frequentation of health facilities whose services are covered by the scheme. In order to take this impact into account, the formula for calculating probability should include not the current proportion of sick persons who have been treated at these health facilities but rather the expected proportion, which is higher. Estimating the expected proportion of such persons on the basis of the current proportion is explained in the practical example provided below.

Information concerning the number of users of the health service and of the health facility, each one being counted only once

The proportion of health facility users who use the health service may be expressed as:

$$\textbf{Proportion of users} = \frac{\text{Number of users of the health service (each one counted only once)}}{\text{Number of users of the health facility (each one counted only once)}}$$

Note: It is assumed here that the expected proportion of health facility users who use the health service is equivalent to the current proportion, i.e. that the establishment of a health micro-insurance scheme will not alter this proportion.

Important. Each user must be counted only once so as not to confuse the two notions of the probability of utilizing the service and the quantity consumed, i.e. the number of times the service is utilized.

Utilization

These three indicators may then be used to calculate the probability of utilizing the health service, as may be seen later on (Chapter 4, Tool 4.5.2(a)). The probability of utilizing the health service serves as an input in calculating the pure premium of the health service when applying the general formula of calculation.

PRACTICAL EXAMPLE – CALCULATING THE PROBABILITY OF UTILIZING VARIOUS HEALTH SERVICES

Step 1: Calculating the probability of falling ill based on a household survey

A survey is carried out of a sample of 300 households, representing a total of 1,500 persons. The number of persons who fell ill at least once in the course of the year was 1,200.

The probability of falling ill is equal to the number of persons who fall ill at least once in the course of the year (1,200), divided by the total number of persons (1,500) = 0.8.

Probability (illness) = 80 per cent (≤ 1)

Step 2: Calculating the current proportion of sick persons for each type of health facility

The results of the household surveys indicate that, prior to the establishment of a health micro-insurance scheme, out of 100 sick persons (all illnesses combined), the number accounted for by the various types of health facility was as follows:

Type of health facility	Number out of 100, prior to start-up of HMIS
Hospital (hospitalization)	2
Private clinic (hospitalization)	2
Hospital (outpatient care*)	12
Health centre (outpatient care)	40
Private modern physician	15
Traditional practitioner	8
Self-medication	12
No treatment sought	9
Total	**100**

For the sake of simplicity, it was assumed that each respondent had ticked only one box (only one means of treatment), which explains why the total number of means of treatment is 100. In practice, it often happens that a person will use several means of treatment during the same episode of illness.

Step 2*(a)*: Estimating the expected proportion of patients for each type of health facility

It is assumed that:

- the health micro-insurance scheme covers only outpatient care at health centres, outpatient care and hospitalization at hospitals;
- insured persons will modify the means of treatment they use in order to optimize their coverage and will seek treatment only at health facilities covered by the scheme.

Consequently, **out of 91 persons**, each of whom uses one means of treatment:

- hospitalization at the hospital will account for all hospitalizations (public and private), or four cases;

- outpatient care at the hospital and outpatient care at the health centre will account for all outpatient care and self-medication (or 87 cases), in proportion to the share accounted for by each in the initial outpatient care provided in the public sector (40/52 for the health centre and 12/52 for the hospital):
  - outpatient care at the health centre: 40/52 × 87 = 67 cases;
  - outpatient care at the hospital: 12/52 × 87 = 20 cases.

The number of sick persons who seek no treatment will be zero. Thus, **out of 100 ill persons**:

- hospitalization at the hospital will account for 4/91 × 100 persons, or 4 per cent *(rounded figure)*;
- outpatient care at the health centre will account for 67/91 × 100 persons, or 74 per cent *(ditto)*;
- outpatient care at the hospital will account for 20/91 × 100 persons, or 22 per cent *(ditto)*.

Type of health facility	Number out of 91, within the context of an HMIS	Expected proportion
Hospital (hospitalization)	4	4%
Private clinic (hospitalization)	0	0%
Hospital (outpatient care)	20	22%
Health centre (outpatient care)	67	74%
Private modern physician	0	0%
Traditional practitioner	0	0%
Self-medication	0	0%
No treatment sought	0	0%
Total	**91**	**100%**

Step 3: Calculating the proportion of health facility users who use a given health service, each user counted only once

The annual reports for the previous year of the health centre in question reveal the following totals:

Consultations and outpatient care: 35,630 users, consisting of:

- outpatient curative consultations: 28,500 users, of which 25,650 purchased prescribed medicines and 17,100 underwent laboratory tests;
- outpatient care: 7,130 users.

The proportion of all health centre users who used each service is as follows:

	Number of users	Proportion
Curative consultations		
Consultations	28 500	80%
Prescriptions	25 650	72%
Laboratory tests	17 100	48%
Treatments	7 130	20%
Total (consultations + treatments)	**35 630**	**100%**

The same procedure is used for the hospital.

CALCULATING THE PROBABILITY OF UTILIZING VARIOUS HEALTH SERVICES *(cont.)*

Step 4: Final calculation of the probability of utilization of each health service

Next, each of the indicators obtained in steps 1, 2(a) and 3 are multiplied by each other in order to obtain the probability of using each health service:

- Probability (consultation at health centre) = 80% × 74% × 80% = 47%
- Probability (health centre pharmacy) = 80% × 74% × 72% = 43%
- Probability (laboratory tests at health centre) = 80% × 74% × 48% = 28%
- Probability (outpatient care at health centre) = 80% × 74% × 20% = 12%

	Probability
Curative consultations	
Consultations	47%
Prescriptions	43%
Laboratory tests	28%
Treatments	12%
Total (consultations + treatments)	**59%**

The same procedure is used for hospital.

2. Alternative method of data collection and calculation of probability: Based on the management data of pre-existing health micro-insurance schemes

No processing

The management tools (registers, indicators, etc.) of a pre-existing health micro-insurance scheme may be used to determine:

- the total population covered by the scheme;
- the number of covered persons who used a particular health service at least once in the course of the year. This involves counting the number of users of the service by eliminating all duplicates, i.e. all beneficiaries who used the service more than once during the year. This task is easy if the management tool identifies each member or dependent individually (for example, in a "Beneficiary ID number" field).

Warning. The term "covered persons" means persons who are effectively entitled to receive benefits for the period in question; it does not include persons undergoing a waiting period or those ineligible for benefits owing to the fact that they are in arrears in their premium payments. The tasks involved in making this distinction are quite tedious without a computerized management system.

Utilization

These two items of information may be used to calculate the probability of using the health service, as will be seen later (Chapter 4, Tool 4.5.2*(a)*). The probability of using the health service may be used as an input in calculating the pure premium when the general formula is applied. However, data from other health micro-insurance schemes must be used with precaution inasmuch as each scheme is different (in terms of benefit plans, population covered, etc.).

PRACTICAL EXAMPLE – CALCULATING THE PROBABILITY OF UTILIZING THE "MEDICAL HOSPITALIZATION" SERVICE

A pre-existing health micro-insurance scheme comprises 3,500 covered persons. Over the course of the last 12 months, 60 of these covered persons were admitted at least once to the "Medical hospitalization" service. The probability of using this service = 60/3,500 = **1.71 per cent.**

Processing the collected data in order to calculate the average quantity covered (→ useful if applying the general formula)

Reminder: There are three basic methods of collecting data on the quantity consumed: (1) First method: Based on data supplied by health facilities; (2) Second method: Based on tracking a sample of patients; (3) Third method: Based on the management data of pre-existing health micro-insurance schemes.

1. First method: Based on data supplied by health facilities (registers, annual reports, statistics, testimony of health care staff)

Collected information and processing

For each health service and each user of the service, the quantity of the health service consumed over the course of the year is obtained from health facility registers.

A summary table is then filled out. The first row of the table contains the number of times the service was utilized (once, twice, etc.) or the number of units consumed (one hospital day, two hospital days, etc.), and the second row indicates the number of patients concerned (fictitious data):

Number of times the service was utilized	1	2	3	4	5
Number of patients concerned	50	30	10	5	3
Reading the chart: *50 patients utilized the service only once during the observation period.*					

This method of collection may prove to be lengthy, particularly when the service concerned is utilized frequently. In such instances, the data collection can be limited to a shorter period of time (for example, a two-month period) and the yearly results can then be extrapolated.

In addition, this method of collection assumes that health facility registers identify patients precisely (first name, last name, address, ID number). When identification is not straightforward, it may be preferable to use another method of collection, such as tracking a sample of patients.

Utilization

The information contained in the summary table may then be used to calculate the average quantity covered, depending upon the benefit terms: with or without a maximum number of days, cases or sessions; with or without a deductible.

The average quantity covered is then used as an input in calculating the pure premium when applying the general formula.

Important. When the average quantity is calculated using this method, it risks being underestimated. This is because the establishment of a health micro-insurance scheme and the elimination of financial barriers are likely to contribute to increasing the average number of times the health services are utilized by beneficiaries. When calculating the average quantity, it is therefore important to estimate the impact of the benefit on the consumption patterns of beneficiaries. Moreover, careful monitoring of the risk portfolio as from the first accounting period will allow for making any necessary adjustments to the average quantity covered.

PRACTICAL EXAMPLE

The practical example may be found under the paragraph entitled, *Processing the collected data in order to calculate the average unit cost*, page 95.

2. *Second method: Based on tracking a sample of patients*

Collected information and processing

A sample of patients is selected from among all the patients of a health facility. Each time a patient in the sample uses a given health service, the number of units consumed is recorded.

Example: If the patient undergoes a consultation, the number of units consumed = 1. If the patient is hospitalized for five days, the number of units consumed = 5.

For a discussion of the various tracking methods, please refer to:

▶ **3.2.2 – Sample tracking form for a sample of patients**, Volume 2, Chapter 3, page 61.

Next, the data obtained for all patients in the sample is added together for each health service, and a summary table is completed. The first row of the summary table contains the number of times the service was utilized (once, twice, etc.) or the number of units consumed (one hospital day, two hospital days, etc.), and the second row contains the number of patients concerned (fictitious data):

Number of times the service was utilized	1	2	3	4	5	...
Number of patients concerned	50	30	10	5	3	

Utilization

Same as for the first method.

PRACTICAL EXAMPLE

The practical example may be found under the paragraph entitled, *Processing the collected data in order to calculate the average unit cost*, page 95.

3. Third method: Based on the management data of pre-existing health micro-insurance schemes

Collected information and processing

The management tools of a pre-existing health micro-insurance scheme usually contain a record of the past utilization of the health services covered by the scheme. For each person protected by the scheme, it is possible to determine the number of consultations undergone during the year, the number of hospital days, etc.

This information may be used to complete the summary table of the quantities consumed for each health service (fictitious data):

Number of times the service was utilized	1	2	3	4	5	...
Number of covered persons	50	30	10	5	3	

Note: When the information recorded in management tools is not sufficiently detailed, the necessary data can always be reconstituted by analyzing a sample of claims and invoices received from partner health care providers or insured persons.

Utilization

Same as for the first method.

PRACTICAL EXAMPLE

The practical example may be found under the paragraph entitled, *Processing the collected data in order to calculate the average unit cost,* page 95.

Processing the collected data in order to calculate the average unit cost (→ useful regardless of which formula is applied)

Reminder: There are three basic methods of collecting data on the unit cost: (1) First method: Based on data supplied by health facilities; (2) Second method: Based on tracking a sample of patients; (3) Third method: Based on the management data of pre-existing health micro-insurance schemes.

1. First method: Based on data supplied by health facilities (registers, annual reports, statistics, testimony of health care staff)

Collected information and processing

The following items of information may be collected from the data supplied by health facilities (reports, registers, statistics) and, in some cases, the testimony provided by health care staff:

- the unit cost of the health services for each pathology;
- the prevalence rates of the various pathologies: percentage of malaria cases, percentage of cases of respiratory infection, etc.

Next, the following summary table is completed (fictitious data):

Pathology	Malaria	Respiratory problems	Diarrhoea	...
Cost of the service	1000	1500	1200	...
Prevalence rate	10%	15%	9%	...
Reading the chart: *The cost of the health service in the case of malaria is 1,000 MUs. Malaria accounts for 10 per cent of all cases treated at this health facility.*				

Utilization

The information contained in the summary table may then be used to calculate the average unit cost for a large number of benefit terms. However, this form of presentation is ill-suited to maximum benefits/flat-rate benefits or monetary deductibles.

The average unit cost may then be used as an input in calculating the pure premium, regardless of which formula of calculation is applied (general or specific formula).

PRACTICAL EXAMPLE – COMPLETING THE SUMMARY TABLES ON THE QUANTITY CONSUMED AND THE UNIT COST

The information sought is the quantity consumed and the unit cost of each of the following three health services: "Consultations", "Pharmacy" and "Laboratory".

According to the registers, 36,000 adults and 41,000 children underwent consultations over the course of the year. These were distributed as follows:

For adults

Number of consultations	1	2	3	4	5
Number of patients concerned	15 000	5 000	1 500	1 000	500

and for children (0-5 years)

Number of consultations	1	2	3	4	5
Number of patients concerned	16 500	6 000	2 000	1 000	500

The number of persons who underwent consultation (each person being counted only once, even if he or she utilized more than one consultation) was 23,000 for adults and 26,000 for children.

According to a member of the nursing staff, 90 per cent of consultations gave rise to a prescription for medicines, but only 60 per cent to a prescription for laboratory tests.

This information may be used to draw up summary tables listing the quantity consumed for the services "Consultations", "Pharmacy" and "Laboratory" (assuming that the rates of 90 per cent and 60 per cent apply uniformly to the number of patients indicated).

For adults

Number of consultations	1	2	3	4	5
Number of patients concerned	15 000	5 000	1 500	1 000	500
Number of patients prescribed medicines	13 500	4 500	1 350	900	450
Number of patients prescribed laboratory tests	9 000	3 000	900	600	300

and for children (0-5 years)

Number of consultations	1	2	3	4	5
Number of patients concerned	16 500	6 000	2 000	1 000	500
Number of patients prescribed medicines	14 800	5 400	1 850	900	450
Number of patients prescribed laboratory tests	9 900	3 600	1 200	600	300

The health facility's statistical data indicate that the prevalence rates for five pathologies (numbered from one to five) are as follows:

For adults

Pathology	1	2	3	4	5
Prevalence rate	10%	25%	30%	30%	5%

and for children (0-5 years)

Pathology	1	2	3	4	5
Prevalence rate	20%	30%	30%	12%	8%

The cost of a consultation is identical for adults and for children, regardless of the pathology: 300 MUs.

The cost of a prescription and of laboratory services varies according to pathology and depending on whether the patient is a child or an adult. An estimate of average costs, provided by a member of the nursing staff, may be used to draw up summary tables of the costs corresponding to the "Consultations", "Pharmacy" and "Laboratory" services.

For adults

Pathology	1	2	3	4	5
Prevalence rate	10%	25%	30%	30%	5%
Average cost of consultation	300	300	300	300	300
Average cost of prescription	700	300	700	1 000	800
Average cost of laboratory tests	500	200	300	200	600

and for children (0-5 years)

Pathology	1	2	3	4	5
Prevalence rate	20%	30%	30%	12%	8%
Average cost of consultation	300	300	300	300	300
Average cost of prescription	600	300	800	700	600
Average cost of laboratory tests	300	200	150	200	300

2. *Second method: Based on tracking a sample of patients*

Collected information and processing

A sample of patients is selected from among all the patients of a health facility. Each time a patient in the sample uses a health service, the unit cost of the service is noted.

Example: If a patient undergoes a consultation, the unit cost = the cost of the consultation. If a patient is hospitalized for five days, the unit cost = the cost of one hospital day = the fixed daily rate.

Next, the data obtained for all patients in the sample is compiled for each health service and a summary table is completed. The first row of the table contains the cost of the service (1,000 MUs, 1,200 MUs, 1,500 MUs, etc.), and the second row contains the number of times this cost was recorded (fictitious data):

Cost of the service	1000	1200	1500	1800	2000	...
Number of utilizations	10	25	50	10	5	
Reading the chart: *There were 10 cases in which the unit cost of the service was 1,000 MUs.*						

Utilization

The information contained in the summary table may be used to calculate the average unit cost regardless of the benefit terms (including maximum benefits/flat-rate benefits and monetary deductibles).

PRACTICAL EXAMPLE – COMPLETING THE SUMMARY TABLES ON THE QUANTITY CONSUMED AND THE UNIT COST

In the following practical example, the size of the sample (six patients) is deliberately small in order to facilitate the presentation of the results. The data to be collected concerns two health services: "Consultations" and "Pharmacy".

The health facility under study keeps a register for consultations and a register for the pharmacy. The sample consists of six patients. For each patient, the following information is retrieved:

- the number of consultations undergone during the observation period and the expenses incurred for each consultation;
- the number of prescriptions during the observation period and the expenses incurred for each prescription.

	Number of consultations	Cost of one consultation	Number of prescriptions	Cost of one prescription
Patient 1	1	200	1	500
Patient 1	1	300	0	0
Patient 1	1	300	0	0
Patient 1	1	300	1	300
Patient 2	1	300	0	0
Patient 2	1	300	1	250
Patient 2	1	400	0	0
Patient 3	1	300	1	800
Patient 4	1	500	1	350
Patient 4	1	300	1	400
Patient 5	1	300	0	0
Patient 6	1	300	1	240

Next, the summary tables on the quantity consumed and the unit cost for the two services in question are completed. The observation period is six months and the costs are expressed in MUs (monetary units).

Summary tables for the "Consultations" service

Number of consultations	0	1	2	3	4
Number of patients concerned	0	3	1	1	1

Cost of one consultation	200	300	400	500
Number of consultations concerned	1	9	1	1

Reading the chart: *One patient underwent four consultations over the course of the observation period. There were nine instances in which the cost of a consultation was 300 MUs.*

Summary tables for the "Pharmacy" service

Number of prescriptions	0	1	2
Number of patients concerned	1	3	2

Cost of one prescription	240	250	300	350	400	500	800
Number of prescriptions concerned	1	1	1	1	1	1	1

Note: When calculating the average quantity covered during the scheme design process, the average quantity must be extrapolated for the year by multiplying the figures obtained for the observation period (six months) by two.

3. Third method: Based on the management data of pre-existing health micro-insurance schemes

Collected information and processing

The management tools of a pre-existing health micro-insurance scheme generally contain a history of claims (or invoices) received from covered persons (or health care providers). It is therefore possible to determine precisely the cost of the health services provided by the scheme and utilized by covered persons.

These data may be used to complete, for each health service, a summary table of unit costs (fictitious data):

Cost of the service	1000	1200	1500	1800	2000	...
Number of utilizations	10	25	50	10	5	

As will be seen in the practical example (below), certain management tools contain detailed information on unit costs, such as the cost of a consultation or the cost of a hospital day. In such cases, it is relatively easy to draw up a summary table.

Other tools record costs in a less detailed fashion, such as, for example, the total cost of hospitalization, including accommodation fees for the entire period of hospitalization. Still others record merely the amount of the coverage provided and do not specify the actual cost of the service. It is a little more difficult in such cases to reconstitute a summary table.

When the data recorded by information systems are not sufficiently detailed, these data can always be reconstituted by analyzing a sample of claims or invoices received from covered persons or partner health care providers.

Warning. The term "covered persons" means persons who are effectively entitled to receive benefits for the period in question; it does not include persons undergoing a waiting period or those ineligible for benefits owing to the fact that they are in arrears in their premium payments. The tasks involved in making this distinction are quite tedious without a computerized management system.

Utilization

Same as the second method.

PRACTICAL EXAMPLE – COMPLETING THE SUMMARY TABLES ON THE QUANTITY CONSUMED AND THE UNIT COST

This example describes four cases, which vary as a function of the level of detail contained in the claims records of the health micro-insurance scheme:

- First case: The records contain a breakdown of the quantities consumed and the unit costs: number of hospital days, cost of a hospital day.
- Second case: The records contain a breakdown of the quantities consumed, but only in terms of total expenses: number of hospital days, total cost of a hospital stay.
- Third case: The records contain a breakdown of the quantities consumed, but only in terms of the total amount of coverage.
- Fourth case: The records do not indicate the quantities consumed, but show only the total amount of coverage.

First case: The claims records contain a breakdown of the quantities consumed and the unit costs

Beneficiary ID number	Treatment date	Service	Quantity	Unit actual costs
000 451	02-Jan	Medical hospitalization	3	600
000 546	04-Feb	Medical hospitalization	2	800
000 765	07-Mar	Medical hospitalization	1	600
000 876	12-Apr	Medical hospitalization	5	600
000 024	24-May	Medical hospitalization	8	800
001 234	27-Jun	Medical hospitalization	1	600
000 047	04-Aug	Medical hospitalization	5	800
001 105	07-Sep	Medical hospitalization	3	600
000 365	19-Nov	Medical hospitalization	5	600
000 478	20-Dec	Medical hospitalization	4	600

The "Quantity" field indicates the number of hospital days for each hospital stay; the "Unit actual costs" field indicates the cost of a hospital day.

This information may be used to draw up a summary table of the quantities consumed:

Number of hospital days	1	2	3	4	5	6	7	8
Number of patients concerned	2	1	2	1	3	0	0	1

and of the unit costs:

Cost of one hospital day	600	800
Number of hospitalizations concerned	7	3

Second case: The records contain a breakdown of the quantity consumed, but only in terms of total expenses

Beneficiary ID number	Treatment date	Service	Quantity	Total actual costs
000 451	02-Jan	Medical hospitalization	3	1 800
000 546	04-Feb	Medical hospitalization	2	1 600
000 765	07-Mar	Medical hospitalization	1	600
000 876	12-Apr	Medical hospitalization	5	3 000
000 024	24-May	Medical hospitalization	8	6 400
001 234	27-Jun	Medical hospitalization	1	600
000 047	04-Aug	Medical hospitalization	5	4 000
001 105	07-Sep	Medical hospitalization	3	1 800
000 365	19-Nov	Medical hospitalization	5	3 000
000 478	20-Dec	Medical hospitalization	4	2 400

The "Total actual costs" field indicates the total cost of each hospital stay.

It is easy to come back to the first case by dividing the amounts in the "Total actual costs" field by those in the "Quantity" field. The summary tables are then drawn up in the same way.

Third case: The claims records contain a breakdown of the quantities consumed, but only in terms of the total amount of coverage

Beneficiary ID number	Treatment date	Service	Quantity	Amount of coverage
000 451	02-Jan	Medical hospitalization	3	1 440
000 546	04-Feb	Medical hospitalization	2	1 280
000 765	07-Mar	Medical hospitalization	1	480
000 876	12-Apr	Medical hospitalization	5	2 400
000 024	24-May	Medical hospitalization	8	5 120
001 234	27-Jun	Medical hospitalization	1	480
000 047	04-Aug	Medical hospitalization	5	3 200
001 105	07-Sep	Medical hospitalization	3	1 440
000 365	19-Nov	Medical hospitalization	5	2 400
000 478	20-Dec	Medical hospitalization	4	1 920

The "Amount of coverage" field indicates the total amount covered for each hospital stay. It is possible to come back to the second case by reconstituting the expenses incurred based on the terms of the coverage.

In this example, the benefit covers 80 per cent of expenses, or a percentage co-payment of 20 per cent. The amount of expenses incurred is therefore 100/80 × Amount of

coverage. Thus, the amount of the expenses incurred for the first hospitalization is: 1,440 × 100/80 = 1,800.

Once the table for the second case has been reconstituted, it is possible to reconstitute the table for the first case. The summary tables may then be drawn up.

Fourth case: The records do not indicate the quantities consumed, but show only the total amount of coverage.

Beneficiary ID number	Treatment date	Service	Amount of coverage
000 451	02-Jan	Medical hospitalization	1 440
000 546	04-Feb	Medical hospitalization	1 280
000 765	07-Mar	Medical hospitalization	480
000 876	12-Apr	Medical hospitalization	2 400
000 024	24-May	Medical hospitalization	5 120
001 234	27-Jun	Medical hospitalization	480
000 047	04-Aug	Medical hospitalization	3 200
001 105	07-Sep	Medical hospitalization	1 440
000 365	19-Nov	Medical hospitalization	2 400
000 478	20-Dec	Medical hospitalization	1 920

The available information is not sufficiently detailed to allow for drawing up the summary tables. The only solution in this case is to analyze a sample of invoices. By analyzing a sample of invoices, a complete table of information can gradually be developed. The table presented in the first case can be used as a model. The summary tables can then be drawn up easily.

Processing the collected data in order to calculate frequency (→ useful if applying the specific formula)

Reminder: There are two basic methods of collecting data to use in calculating the frequency of utilization of a health service: (1) Recommended method: Based on household surveys and data supplied by health facilities; (2) Alternative method: Based on management data of existing health micro-insurance schemes. Using data from other schemes is simpler and less costly, but calls for precaution.

1. Recommended method: Based on household surveys and data supplied by health facilities

Processing

The recommended method consists of compiling, based on household surveys, the number of cases of illness accounted for by the population over the course of the year and information on the means of treatment sought. These data may be used to calculate the following two indicators: the frequency of illness, i.e. the number of cases of illness accounted for by the persons surveyed; and the proportion of cases of illness treated at each type of health facility.

It also involves collecting, based on annual reports or registers of health facilities, the number of cases of illness treated utilizing the health service in question and the total number of cases of illness treated by the health facility. These data may be used to calculate a third

indicator: the share accounted for by the health service in the total number of cases treated at the health facility.

The frequency of utilization of the health service is then obtained by multiplying these three indicators by each other.

The calculation of these indicators and their utilization depend on the questions put to households. Provided below are merely one sample question and method of calculation.

Methods of calculating indicators

Information on the number of cases of illness accounted for by the population over the course of the year or during a given period of observation

Sample question

Respondent's family composition

	Men	Women	Children (<15 ans)
Number			

Since <DATE, RELIGIOUS HOLIDAY>, has anyone in your family been ill (excluding childbirth)? ☐ Yes ☐ No

If yes, how many cases of illness were there?

Children _____ Adult women _____ Adult men _____

For all questionnaires, a calculation is made of:

- the total number of cases of illness among adults;
- the total number of adults in the families surveyed: sum of the fields "Men" and "Women" from the family composition table.

If the observation period is three months, i.e. if three months have transpired between <DATE, RELIGIOUS HOLIDAY> and the date of the survey, the frequency of illness for an adult is as follows:

$$\textbf{Frequency (illness)} = \frac{12}{3} \times \frac{\text{Number of cases of illness among adults}}{\text{Total number of adults}}$$

The frequency of illness among children is calculated in the same way.

Note: Calculating a frequency for adults and for children makes sense particularly when the scheme plans to introduce differing premium amounts for adults and children. Other parameters, such as age or sex, may also be taken into account in calculating frequencies and premiums.

Information concerning the means of treatment sought

Sample question

During the last episode of illness in your family, what means of treatment did you seek? *(Several replies possible.)*

☐ No treatment sought ☐ Healer or traditional pharmacopoeia

Purchase of medicines... ☐ from sidewalk vendors ☐ from pharmacy

☐ Consultation at dispensary ☐ Hospitalization at dispensary... *(non-exhaustive list)*

Based on all questionnaires, a calculation is made of:

- the number of times each response is ticked;
- the total number of episodes of illness, i.e. the number of persons surveyed who replied to this question. The current proportion of cases of illness corresponding to each means of treatment is as follows:

$$\textbf{Current proportion} = \frac{\text{Number of times the means of treatment is ticked}}{\text{Total number of surveyed respondents}}$$

Important. The establishment of a health micro-insurance scheme is likely to lead to an increase in the frequentation of the health facilities whose services are covered by the scheme. In order to take this impact into account, the formula for calculating frequency should include not the current proportion of ill persons who have been treated at the health facility but rather the expected proportion, which is higher. Estimating the expected proportion of such persons on the basis of the current proportion is explained in the practical example below.

Information on the number of utilizations of the health service and the total number of cases treated by the health facility

The share of the health service in the total number of cases treated by the health facility is as follows:

$$\textbf{Share of health service} = \frac{\text{Number of cases in which the health service was used}}{\text{Total number of cases treated by the health facility}}$$

Note: It is assumed here that the expected share of the health service in the total number of cases treated by the health facility is equivalent to the current share, i.e. that the establishment of a health micro-insurance scheme will not alter the proportion accounted for by the health service in the health facility's volume of activity.

Utilization

These three indicators may then be used to determine the frequency of utilization of the health service, as will be seen later on (Chapter 4, 4.5.2*(a)*). The frequency of utilization of the health service serves as an input in calculating the pure premium when using the specific formula.

PRACTICAL EXAMPLE – CALCULATING THE FREQUENCY OF UTILIZATION OF VARIOUS HEALTH SERVICES

Step 1: Calculating the frequency of illness based on a household survey

A survey is carried out of a sample of 300 households, representing a total of 1,500 persons. Over the course of a three-month period of observation, the number of cases of illness was 450. The number of cases of illness for the year is therefore equal to $12/3 \times 450 = 1{,}800$.

The frequency of illness among the population surveyed is equal to the number of cases of illness during the year (1,800), divided by the total number of persons (1,500) = 1.2

Frequency (illness) = 1.2

Step 2: Calculating the current proportion of cases of illness treated at each type of health facility

The results of the household surveys indicate that, prior to the start-up of the health micro-insurance scheme, out of 100 cases of illness (all illnesses combined), the number of times treatment was sought from the various types of health facility was as follows:

Type of health facility	Number out of 100, prior to start-up of the HMIS
Hospital (hospitalisation)	2
Private clinic (hospitalisation)	2
Hospital (outpatient care)	12
Health centre (outpatient care)	40
Private modern physician	15
Traditional practitioner	8
Self-medication	12
No treatment sought	9
Total	**100**

For the sake of simplicity, it was assumed that each respondent had ticked only one box, meaning that he or she had used only one means of treatment, which explains why the total number of means of treatment = 100. In practice, it often happens that a person utilizes several different means of treatment over the course of the same episode of illness.

Step 2*(a)*: Estimating the expected proportion of cases of illness treated at each type of health facility

It is assumed that:

- the health micro-insurance scheme covers only outpatient care at health centres, outpatient care and hospitalization at hospitals;
- insured persons will modify the means of treatment they seek so as to optimize their coverage, i.e. they will seek treatment only from health facilities covered by the scheme.

Consequently, **out of the 91 cases of illness** treated:

- hospitalization at the hospital will account for all hospitalizations (public + private), or four cases;
- outpatient care at the hospital and outpatient care at the health centre will account for all outpatient care and self-medication (or 87 cases), in proportion to the share accounted for by each in the initial outpatient care provided in the public sector (or 40/52 for the health centre and 12/52 for the hospital):
  - outpatient care at the health centre: 40/52 × 87 = 67 cases;
  - outpatient care at the hospital: 12/52 × 87 = 20 cases.

There will be no more cases of "No treatment sought". Thus, **out of 100 cases of illness:**

- hospitalization at the hospital will account for 4/91 × 100 cases, or 4 per cent *(rounded figure)*;
- outpatient care at the health centre 67/91 × 100 cases, or 74 per cent *(ditto)*;
- outpatient care at the hospital 20/91 × 100 persons, or 22 per cent *(ditto)*.

PRACTICAL EXAMPLE – CALCULATING THE FREQUENCY OF UTILIZATION OF VARIOUS HEALTH SERVICES *(cont.)*

Type of health facility	Number out of 91, in the context of an HMIS	Expected proportion
Hospital (hospitalisation)	4	4%
Private clinic (hospitalisation)	0	0%
Hospital (outpatient care)	20	22%
Health centre (outpatient care)	67	74%
Private modern physician	0	0%
Traditional practitioner	0	0%
Self-medication	0	0%
No treatment sought	0	0%
Total	**91**	**100%**

Step 3: Calculating the share of the health service in the total number of cases treated at the health facility

The annual reports for the previous year of the health centre in question yield the following totals:

Consultations and outpatient treatments: 53,445 cases, including:

- 42,750 outpatient curative consultations, 38,475 medical prescriptions and 25,650 laboratory tests;
- 10,695 outpatient treatments.

The share of each health service in the total number of cases treated is as follows:

	Number of cases	Proportion
Curative consultations		
Consultations	42 750	80%
Prescriptions	38 475	72%
Laboratory tests	25 650	48%
Treatments	10 695	20%
Total (consultations + treatments)	**53 445**	**100%**

The same procedure is used for the hospital.

Step 4: Final calculation of the frequency of utilization of each health service

Each of the indicators obtained in steps 1, 2(a) and 3 are then multiplied by each other to obtain the frequency of utilization of each health service:

- Frequency (consultations at health centre) = 1.2 × 74% × 80% = 71%
- Frequency (pharmacy at health centre) = 1.2 × 74% × 72% = 64%
- Frequency (laboratory tests at health centre) = 1.2 × 74% × 48% = 43%
- Frequency (outpatient care at health centre) = 1.2 × 74% × 20% = 18%

	Frequency
Curative consultations	
Consultations	71%
Prescriptions	64%
Laboratory tests	43%
Treatments	18%
Total (consultations + treatments)	**89%**

The same method is used for the hospital.

2. *Alternative method of data collection and calculation of frequency: Based on the management data of pre-existing health micro-insurance schemes*

Processing

The management tools (registers, indicators, etc.) of a pre-existing health micro-insurance scheme may be used to determine:

- the total population covered by the scheme;
- the number of utilizations of each health service for which a claim was made by a covered person.

The number of utilizations of each health service (number of hospitalizations, number of consultations, etc.) is divided by the total number of covered persons to produce the frequency of utilization of each health service.

Warning. The term "covered persons" means persons who are effectively entitled to receive benefits for the period in question; it does not include persons undergoing a waiting period and those ineligible for benefits owing to the fact that they are in arrears in their premium payments. The tasks involved in making this distinction are quite tedious without a computerized management system.

Utilization

These two pieces of information may then be used to calculate the frequency of utilization of the health service, as will be seen later on (Chapter 4, 4.5.2*(a)*). The frequency of utilization of the health service serves as an input in calculating the pure premium of the health service when applying the specific formula. However, the data of other health micro-insurance schemes must be used with precaution, given that each scheme is different (benefit plans, population covered).

PRACTICAL EXAMPLE – CALCULATING THE FREQUENCY OF UTILIZATION OF THE "MEDICAL HOSPITALIZATION" SERVICE

A pre-existing health micro-insurance scheme provides coverage for 3,500 persons. Of these (persons who are effectively entitled to benefits), 80 were admitted to the "Medical hospitalization" service over the course of the past 12 months. The frequency of utilization of this service = 80/3,500 = **2.29 per cent**.

3.4.7 Example of processing the data collected for objective 7: "To establish a basis for calculating premiums based on the operating costs of health facilities"

Estimated fixed costs of the health facility

Processing

The collected information concerning the current fixed costs of the health facility, as well as an estimate of the additional costs planned for the next accounting period (investments, recruitments) and non-recurrent costs, may be used to calculate an indicator of estimated fixed costs.

Methods of calculating indicators

The information collected consists of the current fixed costs, i.e. equipment amortization costs, building and equipment maintenance costs, payroll costs, training costs, etc.

Estimated fixed costs may be calculated as follows:

Estimated fixed costs =
Current fixed costs
+ Proposed additional costs for the following accounting period
– Non-recurrent costs

Utilization

Health micro-insurance schemes serve, inter alia, to cover part of the operating costs of the health facilities with which they conclude agreements. In order to calculate the premium, the health facility's operating costs are estimated (estimated fixed and variable costs), and this amount is then divided by the number of expected users. This method is recommended particularly when the scheme intends to set up a subscription plan, i.e. the payment of a global fee per covered person that grants entitlement to unlimited use of certain services or to all the services of a health facility.

Estimated variable costs of the health facility

Processing

The information collected on the health facility's current variable costs and an estimate of the various rates linked to the establishment of the health micro-insurance scheme may be used to calculate an indicator of estimated variable costs.

Methods of calculating indicators

Estimated variable costs are calculated on the basis of current variable costs and an estimate of:

- the population penetration rate of the scheme in terms of users of the health facility in the first year;
- the rate of growth in the number of health facility users;
- the rate of growth in the medical consumption of the persons covered by the scheme. (See practical example for more details.)

Utilization

Same as for estimated fixed costs.

Estimated number of users

Processing

The current number of users and the estimated rate of growth in the number of users may serve to calculate an indicator of the expected number of users.

Formulas for calculating indicators

The expected number of users may be calculated as follows:

Expected number of users = (1 + Growth rate) × Number of current users

Utilization

Same as for estimated fixed costs.

PRACTICAL EXAMPLE

The current fixed costs (CFCs) of a health centre = 2,600,000 MUs per year. Current variable costs (CVCs) = 1,000,000 MUs per year. The number of users (P) (each user counted only once, even if he or she used the health facility numerous times during the year) = 6,000 persons (adults, children).

Step 1: Calculating estimated fixed costs (EFCs)

The health centre does not expect its fixed costs to rise in the first year.

$$EFCs = CFCs = 2{,}600{,}000 \text{ MUs.}$$

Step 2: Calculating estimated variable costs (EVCs)

EVCs are calculated on the basis of the variable costs corresponding to insured persons and the variable costs corresponding to non-insured persons.

Assumptions:

- the scheme's population penetration rate in terms of users in the first year is estimated to be x = 25 per cent (one out of four users will be a scheme member or dependent);
- the total number of users is expected to rise by y = 5 per cent in the first year;
- it is assumed that in the first year, insured persons will consume (in value) δ = 10 per cent more than non-insured persons as a result of their insurance coverage.

Calculation of estimated costs:

The total number of users in the first year will be as follows:

$$P_1 = (1+y)\,P = 1.05 \times 6{,}000 = 6{,}300 \text{ persons}$$

The number of insured users will be:

$$x \times P_1 = 25\% \times 6{,}300 = 1{,}575 \text{ persons}$$

The portion of the variable cost corresponding to each user prior to the establishment of the scheme shall be called "c".

$$c = CVCs/P = 1{,}000{,}000/6{,}000 = 166.67 \text{ MUs}$$

In the first year, insured persons increased their consumption by 10 per cent:

$$(1+\delta)\,c = (1+10\%) \times 166.67 \text{ MUs} = 183.33 \text{ MUs}$$

PRACTICAL EXAMPLE *(cont.)*

The estimated variable costs of the scheme in its first year of operation are thus:

$$EVCs = (x P_1 \times (1+\delta) c) + ((1 - x) P_1 \times c)$$

where c = 166.67 MUs, δ = 10%, x = 25% and P1 = 6,300

Thus, EVCs = 1,076,272 MUs

Step 3: Calculating the portion of estimated operating costs corresponding to each individual, referred to as the pure premium, as will be seen in Chapter 4

Pure premium = (EFCs + EVCs)/P_1 = (2,600,000 + 1,076,272)/6,300 = 583.54 MUs

Rounded up, the **Pure premium = 584 MUs**

3.4.8 Example of processing the data collected for objective 8: "To evaluate the target population's willingness to pay"

Premium amount and the seasonal nature of willingness to pay

Processing

The information collected – the premium amounts the target population intends to pay as expressed in household surveys, seasonal variations in income, etc. – may be used to calculate the following indicators:

- the seasonal nature of willingness to pay;
- the "score" obtained by each premium bracket, i.e. the percentage of persons prepared to pay a premium within this bracket;
- the cumulative "score" obtained by each premium bracket.

The calculation of these indicators and their utilization depend upon the questions put to households. Included below are merely one sample question and method of calculation. Another sample is provided and developed in the practical example.

Methods of calculating indicators

Information concerning the seasonal nature of willingness to pay as it relates to the seasonal nature of income

Sample questions

During which months of the year is your income the highest?

☐ January ☐ February ☐ March ☐ April ☐ May ☐ June ☐ July
☐ August ☐ September ☐ October ☐ November ☐ December

If you were to join a health micro-insurance scheme, with what frequency and at what times of the year would you be able to pay premiums?

☐ Once per year (best month: _____)
☐ Bi-annually (best months: _____ and _____)
☐ Quarterly ☐ Monthly ☐ Weekly

When processing the questionnaires, a calculation is made of the percentage of persons who ticked "January", "February", etc., in response to the first question, which may be used to determine whether there is a peak in income during certain months of the year.

Next, a calculation is made of the percentage of persons who ticked "Once per year" or "Bi-annually", and so forth.

The identification of income peaks during the year must lead to a proposal that premiums should be paid during the corresponding periods, particularly if that coincides with the wishes of potential members.

Information concerning the premium amounts the target population says it intends to pay

Sample question

What premium amount would you be prepared to pay per person and per period?

Once per _____

Amount for each member of the family: _____

When processing the questionnaires, the annual premium amount per person that respondents state they are willing to pay, is determined for each questionnaire.

Example: If the respondent indicated "Once per month" and an amount of "200 MUs" per person, this corresponds to an annual premium of 2,400 MUs per person (fictitious premium levels).

Next, premium brackets may be defined and their respective scores calculated, i.e. the percentage of persons prepared to pay a premium that falls within each of these brackets.

Example

First bracket: "Between 501 MUs and 2,000 MUs"

Second bracket: "Between 2,001 MUs and 3,000 MUs"

Third bracket: "Between 3,001 MUs and 4,000 MUs"

Fourth bracket: "Between 4,001 MUs and 5,000 MUs"

Fifth bracket: "5,001 MUs or more"

$Score_{(first\ bracket)}$ = Percentage of persons who indicated a premium amount between 501 MUs and 2,000 MUs. The scores of successive brackets are calculated in the same way (fictitious premium levels).

The cumulative score of each bracket may also be calculated.

- The cumulative $score_{(first\ bracket)}$ = Percentage of persons who indicated a premium amount greater than or equal to 501 MUs.
- The cumulative $score_{(second\ bracket)}$ = Percentage of persons who indicated a premium amount greater than or equal to 2,001 MUs, and so forth.

Utilization

The scores obtained by each premium bracket make it possible to identify one or more homogeneous groups in terms of willingness to pay.

In this **example**, it is assumed that the following scores were obtained:

- 10 per cent of respondents indicated a premium amount of "Between 501 MUs and 2,000 MUs";
- 35 per cent indicated an amount "Between 2,001 MUs and 3,000 MUs";
- 40 per cent indicated an amount "Between 3,001 MUs and 4,000 MUs";
- 10 per cent indicated an amount "Between 4,001 MUs and 5,000 MUs";
- 5 per cent indicated an amount of "5,001 MUs or more".

Two main population groups may be identified: the first could accept a premium level of 2,000 MUs; the second could go up to 3,000 MUs. The identification of these two groups may lead to offering two ranges of coverage: one would provide coverage for basic services in exchange for the payment of a modest premium (2,000 MUs); the other would offer coverage of a larger number of services in exchange for the payment of a higher premium (3,000 MUs). Nevertheless, the introduction of several benefit plans would make managing the scheme more difficult, particularly if the management system is not computerized.

The cumulative scores are used to identify a premium amount not to be exceeded if the scheme is to appeal to a large majority of the population and not only to an elite segment, and in order to avoid major difficulties at the time of enrolment and when collecting premiums.

In the above **example**, the following cumulative scores were obtained:

- 100 per cent for the first bracket: 100 per cent of respondents indicated a premium amount greater than or equal to 501 MUs;
- 90 per cent for the second bracket: 90 per cent of respondents indicated a premium amount greater than or equal to 2,001 MUs;
- 55 per cent for the third bracket: 55 per cent of respondents indicated a premium amount greater than or equal to 3,001 MUs, etc.

Offering exclusively a premium of 3,000 MUs would make it possible to attract only 55 per cent of the target population; for this reason, it is desirable, either to introduce a lower premium level (2,000 MUs), or to introduce several benefits with differing premium levels.

Current contribution levels of other civil society organizations that operate on the basis of periodic contributions – such as cooperatives, associations, trade unions or other health micro-insurance schemes – may be used to confirm the premium levels thus calculated, their seasonal nature and the identification of homogeneous groups in terms of willingness to pay. This information may be used for purposes of illustration without any particular processing.

PRACTICAL EXAMPLE

A survey is conducted of 50 target population households. Each household consists of an average of six persons. Questions are addressed to the head of the family and/or to his/her spouse. The function and purpose of the premium is explained to respondents. The following question is then asked: "What maximum amount would you be prepared to pay each month for yourself and your family?

☐ 200 MUs ☐ 400 MUs ☐ 600 MUs ☐ 800 MUs ☐ 1,000 MUs ☐ ...

A calculation is made of:

- the number of positive replies for each maximum premium amount;
- the percentage of replies for each amount (for example: given a maximum amount of 600 MUs, the percentage of replies = 21/50 = 42 per cent);
- the percentage of cumulative replies (for example: the amount of 600 MUs would be acceptable to households that had indicated a maximum amount of 600 MUs, as well as to all those that had indicated a higher maximum amount: 800 MUs, 1,000 MUs, 2,000 MUs, 3,000 MUs. The cumulative percentage = 42% + 36% + 6% + 2% + 2% = 88%).

Maximum amount per month and per family	Number of replies	Percentage of replies	Cumulative percentage
200	2	4%	100%
400	4	8%	96%
600	21	42%	88%
800	18	36%	46%
1 000	3	6%	10%
2 000	1	2%	4%
3 000	1	2%	2%
TOTAL	50	100%	

As the proposed premium amounts increase, the number of households prepared to pay those premiums diminishes. Generally speaking, a ceiling level emerges and the willingness to pay beyond this level drops sharply.

3.4.9 Example of processing the data collected for objective 9: "To establish a basis for negotiating with health care providers, negotiating with transport operators, collaborating with prevention programmes, and obtaining information on public aid"

Legal framework governing contractual arrangements with health care providers, Identification of interlocutors for concluding agreements with health care providers

No processing

The information collected is utilized directly without being processed.

Utilization

The legal framework provides information on the extent to which it is possible to conclude agreements with health care providers, and indicates the rules to be followed when preparing and implementing such agreements. The other information helps to identify who the interlocutors of the scheme will be when it is time to prepare the agreements: managers of health facilities, officials of regulatory bodies or members of management committees. If the health facility has little autonomy, the agreement should be concluded in close collaboration with the regulatory body. If, on the other hand, it has a greater degree of autonomy, the agreement could be concluded by the manager of the health facility in his personal capacity.

Estimation of fees with a view to defining contractual fees

1. Official fees and negotiated fees

No processing

The official fee schedules and the fees negotiated by other health micro-insurance schemes with comparable health care providers are utilized directly without being processed.

Utilization

This information serves as a basis for setting fees in the context of agreements between the future health micro-insurance scheme and health care providers.

2. Overcharging, if any

Processing

Information concerning requests for "tips" may be used to identify the services affected by such practices and to calculate various indicators for the services concerned: minimum, average and maximum amount of tips.

Methods of calculating indicators

Information that may be used to estimate the extent of overcharging, if any

Sample questions

The last time you had to pay a tip, was it in connection with:
☐ a consultation? ☐ a hospitalization?

Please indicate which service was involved _____

How much did you have to pay (in addition to the posted fees)? _____ MUs

Processing the replies consists of calculating the average amount overcharged for consultations, hospitalizations, and, in some cases, for each service.

Utilization

Information on overcharging may be used to identify the services for which this practice is most widespread. Estimating the amount of the tips requested by the health care staff is particularly useful if the scheme wishes to put an end to such practices by compensating staff members in ways as yet undetermined.

Levels of quality and operation of the health facilities with a view to defining quality standards

1. Objective quality

No processing

Information on the objective quality of the health facilities, derived from quality assessments, is utilized directly without being processed.

Utilization

These levels of objective quality may serve as a basis for defining quality standards or objectives to be stipulated under the agreements. A health facility may thus commit to respecting a maximum waiting time or to an improved level of availability of medicines.

2. *The viewpoint of the health care staff*

No processing

Information on the current operation of the health facilities, obtained from interviews with the health care staff of the health facilities, is used directly without being processed.

Utilization

This information helps to gain an understanding of the current operating procedures of the health facilities, to identify certain problems relating to operations or quality and to explore avenues for improvement.

Sample questions concerning average waiting time

- Are patients required to wait a long time before being seen by medical staff?
- If yes, to what is this wait attributable?
- What steps might be taken to reduce this waiting time?

Sample questions concerning the procurement of medicines

- Does the pharmacy of the health facility sometimes have stock shortages of certain medicines?
- If yes, to what is this attributable?
- What steps might be taken to avoid stock shortages?

The solutions to operational problems that are proposed by the health care staff during interviews may be taken into account when preparing future agreements.

3. *The viewpoint of the users*

Processing

Information on the perceived quality (average length of wait, availability of medicines, confidentiality), derived from patient surveys, may be used to calculate indicators of perceived quality. The calculation of the indicators and their utilization depend upon the questions put to patients. Included below are merely one sample question and method of calculation.

Methods of calculating indicators

Information on the average waiting time

Sample questions

How long did you have to wait the last time before you were treated?

Estimated amount of time: _____

☐ More than 7 hours ☐ Between 4 and 7 hours

☐ Between 1 and 4 hours ☐ Less than 1 hour

How long did you have to wait the last time before you were given an appointment?

Estimated amount of time: _____

☐ More than 1 month ☐ Between 1 week and 1 month

☐ Less than 1 week ☐ Never made an appointment

In order to calculate the average waiting time (before being treated, before date of appointment), the times indicated in the "Estimated amount of time" field are added together and the total is divided by the number of replies.

Actual presence of medical staff (perceived)

Sample question

Are certain members of the health care staff sometimes absent during opening hours for reasons not related to their work? ☐ Yes ☐ No

An indicator of perceived quality is calculated in terms of the percentage of "No" replies. The same procedure is used to obtain the other indicators of perceived quality (perceived availability of medicines, confidentiality, etc.).

Utilization

An analysis of patient surveys may be used to define current levels of quality. These levels may be used to define quality objectives or standards, i.e. levels of quality to be attained by the partner health facilities and stipulated under agreements with the future health micro-insurance scheme.

Examples: If the average waiting time for an appointment is two weeks, one of the quality objectives could be to reduce this average wait to one week. If the level of actual presence of heath care staff is low (for example, if 70 per cent of the users replied "Yes" to the question "Are certain members of the health care staff sometimes absent during opening hours for reasons not related to their work?"), one of the quality objectives could be to reduce absenteeism. Accompanying measures could be envisaged: motivating staff, closer supervision. If the availability of medicines is poor, one quality objective could be to decrease the frequency of medicine stock shortages. Accompanying measures, such as the establishment of an additional supply circuit, could also be envisaged.

Methods of payment of health care providers

No processing

The information collected – on the current method of fee setting, the preferred method of payment, the preferred frequency of payments – may be utilized directly without being processed.

Utilization

The method of payment preferred by health facilities may vary from one health facility to another: fee-for-service, per cluster of services, per hospital day, per episode of illness, capitation (annual global fee per covered person). The method of payment must, however, be compatible with the current method of fee setting. For example, payment on a fee-for-service basis is only possible if the method of fee setting and invoicing used by health facilities involves invoicing each health service separately. If health facilities invoice health services in clusters, the scheme may use a method of payment that is also comprehensive in nature: coverage provided for each utilization or each episode of illness, or an annual global fee per insured person.

The preferred frequency of payments under a third-party payment mechanism may also vary from one provider to another.

Agreements with transport operators, Participation in health education and prevention programmes

No processing

The information collected is utilized directly without being processed.

Utilization

The information may be used to determine the possibility of concluding agreements or participating in existing health education and prevention programmes, as well as to identify the broad outlines of such agreements or collaboration.

Existing sources of public aid and conditions of grant

No processing

The information collected is utilized directly without being processed.

Utilization

This information may be used to identify existing mechanisms of financial aid for health micro-insurance schemes: premium subsidies, particularly for the most destitute; subsidies for certain operating costs, such as assistance for hiring salaried staff; the provision of technical assistance services free of cost or at preferential rates; and the provision of State-funded or subsidized financial consolidation mechanisms, such as guarantee funds. The information collected also helps to understand the modalities for the grant of such aid: conditions, procedures to follow.

3.4.10 Example of processing the data collected for objective 10: "To establish a basis for defining the organization and operation of the scheme"

Organization in networks, Methods of organization, Principal rules of management, Other indicators

No processing

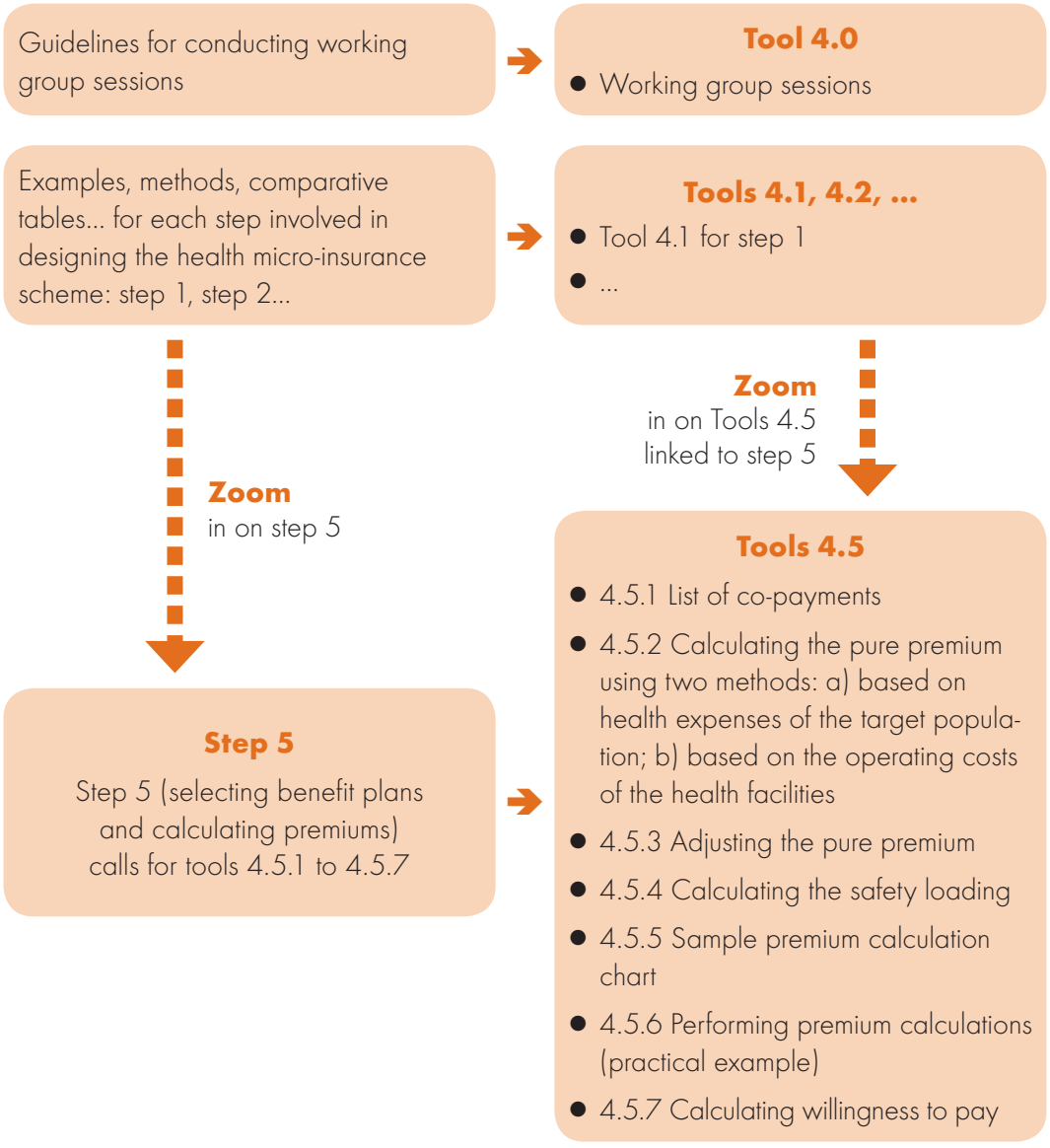
The information collected is utilized directly without being processed.

Utilization

This information may be used to identify among existing civil society organizations – including any health micro-insurance schemes – intelligent methods of organization or effective systems of management. This information may serve as a source of inspiration when designing the scheme. The population penetration rates and the percentage of management costs of other health micro-insurance schemes may be used as references when calculating the budget estimate and the premiums.

4. Tools used to design the health micro-insurance scheme

The tools used to design the health micro-insurance scheme include the following:



4.0 Working group sessions

Working group sessions may be directed towards the various actors concerned by the establishment of a health micro-insurance scheme. These include, for the most part, the representatives of the target population, but also other key actors (such as potential partner health care providers, local authorities, etc.). Depending on the themes of the meetings, however, the presence of all these actors is not absolutely necessary. Too many participants or too great a diversity of opinions risks slowing down or complicating the decision-making process. Steps should therefore be taken to strike the right balance between the desire to bring together a large number of actors and the difficulty inherent in managing diversity.

One of the objectives of the working group sessions is to consult with the actors in order to obtain their points of view. It is important to give some attention to the composition of the working groups in order to ensure that all participants will have a chance to express themselves. For certain decisions – such as deciding which services the scheme will cover – and in certain situations, it may be preferable to consult women and men separately, thereby allowing each party the freedom to make its views known. For the same reason, it is not necessarily desirable to include local or traditional authorities in all meetings (because participants will be less likely to express themselves in their presence). If despite all these precautions, it becomes apparent that some sub-groups, such as women or young persons, have been under-represented in the decision-making process, their respective opinions can still be gathered at smaller meetings known as "focus groups".

Working group sessions must centre on issues relating to health micro-insurance. The objectives of the meetings must be defined clearly in order to avoid any digressions. In particular, the establishment of income generating activities – often identified as an accompanying measure of a health micro-insurance scheme – must be dealt with in the context of a separate project and separate working group sessions.

The facilitation of such sessions is a gradual process and requires an investment of time. Efforts to obtain quick results usually end in failure and reduce the process to one of merely "superimposing" a scheme onto a context for which it may not necessarily be the best suited. At the same time, it is a dynamic process that should not be subjected to undue interruptions. For this reason, efforts should be made to maintain a certain pace in conducting the process, not allowing it to drag on too long and thereby risk discouraging the actors.

Facilitators must be well-versed in the subjects being considered, particularly those having to do with insurance techniques. They must be able to suggest a variety of forms of organization and operation. In this connection, although knowledge of other experiences is valuable, it should not lead to outright copying. Facilitators should also be careful not to inhibit the creativity of the actors by "forcing" them to adopt practices drawn from other experiences.

4.1 Selecting the target population

Sample comparative table

This table may be used to facilitate making a selection from among several pre-identified target populations that have been defined on a geographic, socio-occupational or socio-economic basis. It contains the data compiled and indicators calculated for objective 2: "To establish a basis for selecting the target population". Information and indicators listed under demographic criteria were derived from objective 1 "To understand the context"/demographic information. Those listed under criteria of exclusion from access to health care were derived from objective 4 "To establish a basis for selecting the health services to be covered"/services difficult to access for financial reasons.

In this sample, the steering committee wishes to select a village from among the three it has identified. Each of the three villages (A, B, and C) has a health centre; however, the inhabitants of all three villages utilize the same reference hospital.

	Village A	Village B	Village C
Demographic criteria			
Number of inhabitants			
Distribution by age bracket			
Average number of persons per family			
Criteria of exclusion from access to the main health care services			
Rate of total exclusion			
Rate of temporary exclusion			
Rate of partial exclusion			
Criteria of objective quality of health facilities (it is preferable for the selected target population to have access to a quality health care supply)			
Extent to which condition of buildings, equipment and qualifications of medical staff conform to standards			
Actual coverage			
Availability of medicines			
Opening hours			
Existence of on-duty system outside of opening hours			
Average waiting time			
Criteria of frequentation of health facilities			
Frequentation rate of each health centre			
Frequentation rate of reference hospital			
Economic and social criteria			
Monetary income generating activities			
Income levels			
Level of education and literacy			

	Village A	Village B	Village C
Economic and social criteria *(cont.)*			
Types of organization of the population (associations, tontines, groupings, cooperatives, etc.)			
Information concerning main civil society organizations (size, existence or lack of a system of contributions or premiums, management of a common fund or lack of such a fund, etc.)			
Criteria of mutual aid practices			
Existence of mutual aid mechanisms in event of illness			
Characteristics of mutual aid mechanisms (services, financing method, etc.)			

4.2 Pre-selecting the health services to be taken into account in the various benefit plans

List of health services usually covered[5]

Basic health care

Basic health care consists of the routine treatment usually dispensed at health posts or health centres. Basic health care includes:

- preventive and promotional care, including prenatal and post-natal consultations, care for healthy infants, vaccinations, family planning, health education and sanitation. A health micro-insurance scheme has every interest in providing coverage for preventive care in order to limit the incidence of illness. The coverage of prenatal consultations, for example, is aimed at preventing dystocic deliveries;
- curative care, including, primarily, consultations, nursing services, provision of medicines and certain laboratory tests. The placement of patients under observation (minor in-patient stay at the health centre) or assisted deliveries are sometimes added to this list;
- treatment of chronic diseases (diabetes, arterial hypertension, HIV infection, heart disease, haemophilia, etc.) and, in some cases, home care*;
- treatment of children suffering from malnutrition and their nutritional rehabilitation using local food.

Hospital care

Hospital care includes accommodation at the hospital, as well as medical, surgical and technical services, and medicines consumed during the hospital stay.

[5] It is also possible to provide coverage for the services of traditional medicine, provided that there exists some means of formalizing and monitoring the transactions involved (established fees, invoices, etc.).

Specialist treatment

Specialist treatment includes consultations with specialist physicians (gynaecologists, paediatricians, surgeons, etc.) and technical medical services, such as X-rays and clinical biology, performed either during the hospital stay or during an outpatient consultation.

Dental care and prostheses

Dental care and prostheses, dispensed by private practices, usually constitute a separate service. Certain health micro-insurance schemes provide coverage for dental care (primarily the treatment of cavities) and sometimes for prostheses (removable appliances, crowns).

Eyeglasses

Some health micro-insurance schemes provide coverage for eyeglasses, provided that they are listed on a medical prescription issued by an ophthalmologist (a medical specialist who treats vision disorders). Coverage is usually limited to lenses, frames not being covered. The prices of frames can vary widely; therefore, when they are covered, frames are often reimbursed on a flat-rate basis.

Medicines and other medical consumables

As far as medicines are concerned, it is important to establish a list of those to be covered by the scheme, or to restrict coverage to the list of essential drugs drawn up by the health ministry.

Given the difference in price between brand-name drugs and generic drugs, it is advisable to reimburse only the latter or – when no generic drug is available – to reimburse the corresponding brand-name drug based on the price of the generic drug.

Ideally, medicines should be issued only by designated health facilities, such as, for example, public health establishments or certain pre-defined private pharmacies.

It is also advisable to provide coverage exclusively for medicines listed on a medical prescription.

Medical consumables include minor medical supplies, such as probes, perfusion equipment, syringes, bandages, etc., which patients must purchase before being able to receive treatment or to continue a treatment at home. The purchase of consumable medical supplies may constitute a financial barrier that hinders access to care, which is why some schemes cover them. Once again, it is important to draw up a specific list of consumable supplies that are covered by the scheme.

Patient transport

Aside from the coverage of health care, a health micro-insurance scheme may cover patient evacuations from one level of the health pyramid to the next.

Covering major and minor risks

Major risks

These include risks related to serious diseases and, more generally, medical conditions that entail sizeable health costs: hospitalization, surgery, dystocic deliveries and other specialist health services. The probability of the occurrence of these events is low; however, the financial burden they entail constitutes an obstacle for nearly all families. Few individuals, in fact, are in a position to finance an expensive operation wholly on their own, especially if this requires obtaining treatment from health care providers located at a distance.

Minor risks

Minor risks involve milder cases which entail more modest costs, but which occur with much more frequency than major risks. Included in this category are nursing services and outpatient consultations.

Insurance is particularly well-suited to major risks

Minor risks, such as consultations or the purchase of medicines, are almost certain risks. It is not unusual to be required to consult a physician or purchase medicines at least once in the course of a year. Consequently, insurance – which consists of pooling premiums to cover the expenses of exclusively those persons who seek treatment – is not much more effective, in this case, than a savings plan in which each person puts money aside to cover almost certain future health expenses. The premiums that individuals must pay in order to be insured by a health micro-insurance scheme are roughly equivalent to the health expenses they would have incurred if they were not insured.

On the other hand, major risks (such as the utilization of secondary and tertiary health care services) are related to events with a low probability of occurrence but which entail a very high cost. Given a large number of members, each of whom pays a small premium, it is possible to cover the expenses of individuals affected by these risks. The insurance mechanism provides an effective response by spreading the risks over a large number of individuals . The premiums that individuals are required to pay are low when compared to the expenses they would have had to assume had they not been insured when the risk occurred. However, in order to provide coverage for major risks, the number of insured persons must be sufficiently large if the solvency of the scheme is to be maintained.

Sample comparative table of health services

This table may be used to facilitate the establishment of a list of health services, in order of priority, and the identification of those services considered to be priorities exclusively for certain sub-groups of the population.

It contains the data compiled and indicators calculated for objective 4: "To establish a basis for selecting the health services to be covered".

Criteria	**Name of service** (non-exhaustive list)						
	Consultations	**Medicines**	**Lab tests**	**PNCs**	**Uncom-plicated deliveries**	**Dystocic deliveries**	**...**
Real needs							
Priority services							
Felt needs							
Percentage of persons who consider the service to be a priority							
Financial difficulties							
Rate of total exclusion							
Rate of temporary exclusion							
Rate of partial exclusion							
Problems regarding cost recovery and financing							
Percentage of outstanding payments							
Under-utilization (yes/no)							
Sub-groups of the population particularly interested (if any)							
Characteristics of sub-group							
Among sub-group: Percentage of persons who consider the service to be a priority							

Sample benefit plan

The sample benefit plan (below) includes:

- a basic plan, consisting of services that correspond to the needs of the majority;
- an "extended" plan, consisting of services included in the basic plan + other important – but not priority – health services;
- optional services – such as an emergency transport service – when such services correspond to the needs of only a sub-group of the population.

Among the services:

- some correspond to individual health services;
- others correspond to clusters of health services: for example, "Medical hospitalization" covers the fixed daily rate, consultations, treatments, and medicines consumed and diagnostics performed during the hospital stay;
- still others refer to episodes of illness: for example, "Maternity" includes prenatal and postnatal consultations, as well as delivery, whether uncomplicated or dystocic.

Sample benefit plan		
	Basic plan	**Extended plan**
Services included		
Consultations at health post/health centre	✔	✔
Treatment at health post/health centre	✔	✔
Generic drugs at pharmacy of health post/health centre	✔	✔
Laboratory tests	✔	✔
X-rays		✔
Specialist consultation at <NAME> hospital		✔
Specialist consultation in town		✔
Generic drugs at pharmacy (<NAME> hospital)	✔	✔
Unplanned medical hospitalization (<NAME> hospital)	✔	✔
Unplanned surgical hospitalization (<NAME> hospital)	✔	✔
Maternity	✔	✔
Eyeglasses		✔
Optional services		
Emergency transport	Possible	Possible

4.3 Selecting the partner health care providers

Sample comparative table

This table may be used to facilitate making a selection from among two providers (A and B). It contains the data compiled and the indicators calculated for objective 3: "To establish a basis for selecting the partner health care providers".

	Provider A	Provider B
Monograph for each provider		
Level of the health pyramid		
Type (public provider, private provider or set up under a special programme)		
District		
Types of care dispensed		
Fees for the following services:		
_____		
_____		
_____		
_____		
Objective quality of health facilities		
Extent to which buildings, equipment and qualifications of medical staff conform to standards		
Actual coverage		
Availability of medicines		
Opening hours		
Existence of an on-duty system outside of opening hours		
Average waiting time		
Overload for a given service		
Average bed occupation rate		
Rationalization of treatment protocols		
SYNTHESIS OF OBJECTIVE QUALITY		
Perceived quality of health facilities		
Quality of patient reception		
Medical staff: competency, ability to listen and empathize, existence of female medical staff		
General staff: honesty, confidentiality		
Average waiting time		
Opening hours		
Actual presence of staff during opening hours		
Sufficient numbers of staff		
Availability of medicines		
SYNTHESIS OF PERCEIVED QUALITY		
Frequentation		
Frequentation rate		

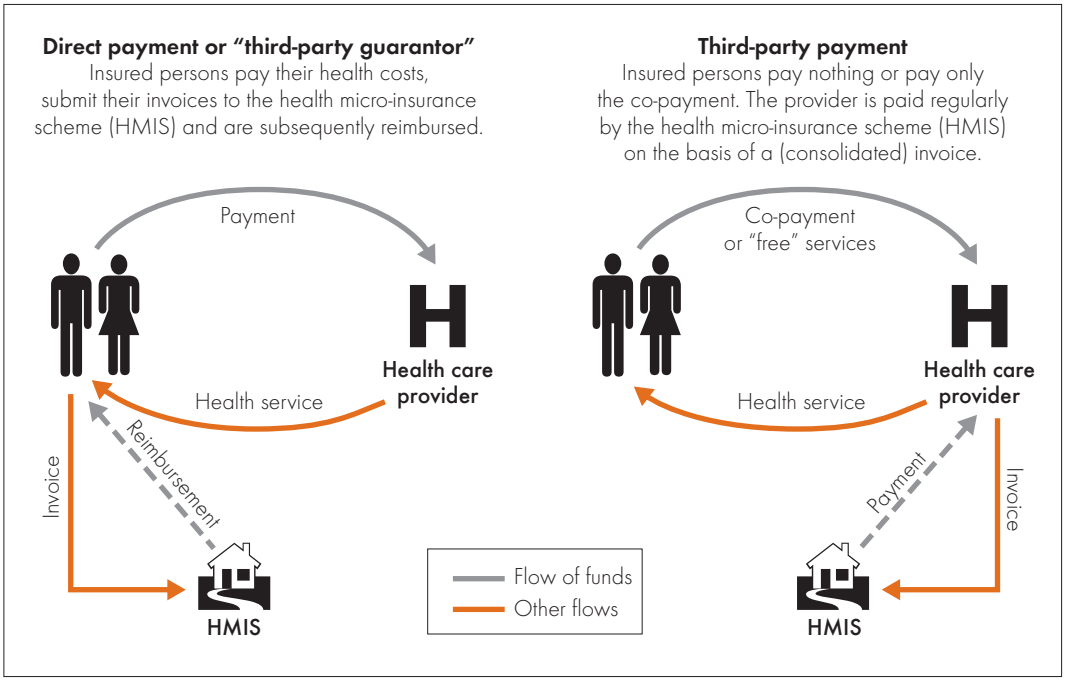
4.4 Selecting the services and health care providers to include in a third-party payment mechanism

Sample comparative table

This table may be used to identify and to select the health services for which third-party payment is considered to be a priority. It contains figures for the data collected and indicators calculated for objective 5: "To establish a basis for determining methods of coverage: direct payment or third-party payment".

Criteria	**Name of service** (non-exhaustive list)						
	Consultations	**Medicines**	**Laboratory tests**	**Prenatal and post-natal consultations**	**Uncomplicated deliveries**	**Complicated deliveries**	**...**
Cost (indicate –, + or ++ according to level of cost)							
Urgency (indicate –, + or ++ according to level of urgency or unpredictability of cases treated)							
Needs expressed by population							
Percentage of persons who consider third-party payment to be a priority for this service							

Sample diagram of various methods of coverage



4.5 Selecting benefit plans and calculating the corresponding premiums

4.5.1 List of co-payments

The percentage co-payment

When a health micro-insurance scheme covers only a portion of health care costs, the remaining portion to be borne by the member is called the percentage co-payment. The percentage co-payment provides a means of moderating members' health care consumption. (To the extent that people are required to pay something, they are inclined to limit their consumption.)

Example of benefit with percentage co-payment: A "Hospitalization" benefit covers 80 per cent of expenses incurred, with a percentage co-payment of 20 per cent. Thus, if a patient's expenses are 100,000 MUs, 80 per cent, or 80,000 MUs, are borne by the scheme, and 20 per cent, or 20,000 MUs, are borne by the member.

The maximum benefit or flat-rate benefit (= limit on amount covered)

The maximum benefit or flat-rate benefit covers 100 per cent of expenses, subject to a fixed, flat-rate limit (expressed in monetary units) per case, per session, per day or per year.

Examples of flat-rate benefits: A "Consultations" benefit covers "100 per cent of expenses incurred, up to a maximum limit of 600 MUs per consultation". A "Hospital accommodation" benefit covers "100 per cent of expenses incurred, up to a maximum limit of 150 MUs per hospital day". An "Optical" benefit covers "100 per cent of expenses incurred, up to a maximum limit of 3,000 MUs per year and per person".

Calculation of the "Consultations" benefit: If a consultation fee is 500 MUs (< 600 MUs), the scheme covers 100 per cent of expenses (or 500 MUs), and the member pays nothing. If the consultation fee is 800 MUs (> 600 MUs), the amount of the flat-rate benefit (or 600 MUs) is borne by the scheme, and the difference between the consultation fee and the flat-rate benefit (or 200 MUs) is borne by the member.

Maximum number of days, cases or sessions

Benefits subject to this type of co-payment limit coverage to a maximum number of days, cases or sessions per person and per year.

Examples of benefits subject to a numerical maximum: A "Prenatal consultation" benefit covers "100 per cent of expenses incurred, up to a limit of three prenatal consultations per pregnant woman per year". A "Hospital accommodation" benefit covers "80 per cent of expenses incurred, up to a limit of 12 hospital days per person and per year".

Calculation of the "Prenatal consultations" benefit: If a patient undergoes two prenatal consultations, the scheme covers 100 per cent of the patient's expenses, and the member owes nothing. If the patient undergoes four prenatal consultations, the scheme covers the first three consultations in full, but the fourth is at the member's expense.

Monetary deductibles applied to each health service utilized, annual monetary deductibles and numerical deductibles (expressed in days, cases, or sessions)

Monetary deductibles applied to each health service utilized

Benefits subject to a monetary deductible applied to each health service cover 100 per cent of expenses, minus a specified amount expressed in monetary units, known as a deductible. The latter is always paid by the member and is not proportional to the expenses actually incurred. This type of co-payment does not promote the accessibility of health care.

Example of monetary deductible: A "Surgery" benefit covers 100 per cent of expenses incurred, minus a deductible of 2,000 MUs.

Calculation: If surgery costs are 1,500 MUs (< 2,000 MUs), no coverage is provided by the scheme, and the member pays 1,500 MUs. If surgery costs are 3,000 MUs, the scheme covers 1,000 MUs (3,000 – 2,000 MUs), while the amount of the deductible (2,000 MUs) remains at the member's expense.

Annual monetary deductibles

Benefits subject to a monetary deductible provide coverage only when the health expenses incurred by the insured person over the course of the year exceed a specified amount (the deductible), which is always at the insured person's expense. This type of co-payment presents a major disadvantage: it contributes to the low visibility of coverage.

Example of an annual monetary deductible: A "Consultations and pharmacy" benefit covers 100 per cent of expenses incurred in excess of an annual deductible of 3,000 MUs.

Calculation: In the course of a year, an insured person is stricken with four episodes of illness. During the first episode, he or she spends 1,000 MUs for consultations and medicines, and is not reimbursed. During the second episode, the insured person spends 1,500 MUs. The insured person's cumulative expenses since the beginning of the year are 1,000 MUs + 1,500 MUs = 2,500 MUs, which are not reimbursed. During the third episode, the insured person spends 1,200 MUs. Cumulative expenses since the beginning of the year now equal 2,500 MUs + 1,200 MUs = 3,700 MUs > 3,000 MUs. Consequently, the insured person is reimbursed in the amount of 700 MUs, while the amount corresponding to the annual deductible (3,000 MUs) remains at his or her expense. During the fourth episode, the insured person spends 1,500 MUs, the full amount of which is covered by the scheme.

Numerical deductibles

Similarly, benefits subject to a numerical deductible cover 100 per cent of expenses, minus a specified number of sessions, cases or days, which are always at the member's expense.

Example of a numerical deductible: A "Hospital accommodation" benefit covers 100 per cent of expenses incurred, excluding the first day of hospitalization, which is never covered.

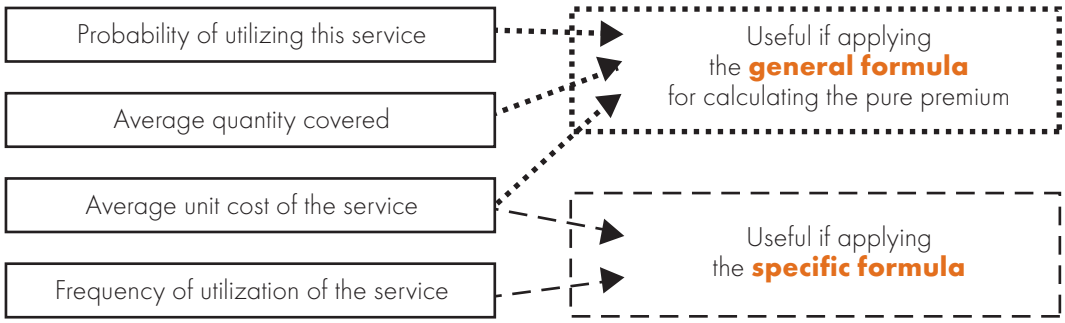
Calculation: If a patient is hospitalized for three days, the expenses corresponding to the first day are borne entirely by the patient. However, the health micro-insurance scheme covers the second and third hospital days.

4.5.2*(a)* Calculating the pure premium based on the health expenses of the target population

There are two ways to calculate the pure premium:

- based on the health expenses of insured persons ▶ discussed below;
- based on the operating costs of health facilities ▶ see 4.5.2*(b)*, page 143.

This section explains how to calculate the following indicators for each health service:



These indicators are then simply multiplied by each other to produce the pure premium (using the general formula or the specific formula):

General formula

Pure premium (for a given health service)
=
Probability of utilizing this service ×
Average quantity covered ×
Average unit cost

Specific formula

Pure premium (for a given health service)
=
Frequency of utilization of this service ×
Average unit cost

Exception: In the case of benefits subject to an "Annual maximum benefit" or to an "Annual monetary deductible", the pure premium is equal to the probability of utilizing the service, multiplied by the average annual cost. An estimate of the distribution of the average annual cost may be obtained by multiplying the distribution of the unit cost by the average quantity (see section entitled, *Annual maximum benefits and annual deductibles: Calculating the average annual cost*, page 140).

Calculating the probability of utilizing a health service (→ useful if applying the general formula)

1. Recommended method of data collection and calculation: Based on household surveys and data supplied by health facilities

When processing the data collected for objective 6, three indicators were calculated: the probability of falling ill, the proportion of sick persons expected to use the health facility and the proportion of health facility users who use the health service. For more details, please refer to:

▶ **3.4.6** – Example of processing the data collected for objective 6: "To establish a basis for calculating premiums based on the health expenses of the target population", page 87.

The probability of utilizing the health service is obtained by multiplying these three indicators by each other:

Probability (health service) =
Probability (falling ill)
× **Expected** proportion of sick persons that will use the health facility
× Proportion of health facility users who use the health service

2. Alternative method of data collection and calculation of probability: Based on the management data of pre-existing health micro-insurance schemes

The management data of health micro-insurance schemes are used to establish two indicators: the number of covered persons who used the health service at least once in the course of the year and the total number of persons covered by the scheme (see also 3.4.6). The probability of utilizing the health service is obtained by dividing the first indicator by the second:

$$\textbf{Probability (health service)} = \frac{\text{Number of covered persons who used the service in a given year (each one counted only once)}}{\text{Total number of persons covered by the scheme}}$$

Calculating the average quantity covered (→ useful if applying the general formula)

When processing the data collected for objective 6: "To establish a basis for calculating premiums based on the health expenses of the target population" (see 3.4.6), a summary table was completed. The first row of this table contains the number of times the service was utilized (once, twice, etc.) or the number of units consumed (one hospital day, two hospital days, etc.) and the second row indicates the number of patients concerned. Below is a sample summary table (fictitious data):

Number of times the service was utilized	1	2	3	4	5
Number of patients concerned	50	30	10	5	3

This table may now be used to calculate the average quantity covered, regardless of the benefit terms used:

- First category of benefit terms (the most common): Benefits not subject to any particular limit on the quantity of the health service utilized.
- Second category of benefit terms: Benefits subject to a limit on the quantity covered.
- Third category of benefit terms: Benefits subject to a numerical deductible.

For more details on the methods of collection and the summary table, please refer to:

▶ **3.4.6** – Example of processing the data collected for objective 6: "To establish a basis for calculating premiums based on the health expenses of the target population", *Processing the collected data in order to calculate the average quantity covered*, page 93.

1. First category of benefit terms (the most common): Benefits not subject to any particular limit on the quantity covered

Examples of benefits

Health service covered	Level of coverage
Consultations	100% of expenses incurred for each consultation, regardless of the number of consultations per year
Pharmacy	60% of the total of each prescription

Formula for calculating the average quantity covered

$$\text{Average quantity covered} = \frac{\text{Number of times the service was utilized in the year}}{\text{Total number of patients (each one counted only once, even if he or she utilized the health service more than once)}}$$

PRACTICAL EXAMPLE – CALCULATING THE AVERAGE QUANTITY COVERED IN THE CASE OF BENEFITS NOT SUBJECT TO A LIMIT ON QUANTITY (MOST COMMON CASE)

Data concerning the "Consultations" service was collected for 98 patients. The summary table contains the following information:

Number of times the "Consultations" service was utilized in the course of the year	1	2	3	4	5
Number of patients concerned	50	30	10	5	3

The average quantity covered = [(1 × 50) + (2 × 30) + (3 × 10) + (4 × 5) + (5 × 3)] / (50 + 30 + 10 + 5 + 3) = 175 / 98 = 1.79.

2. Second category of benefit terms: Benefits subject to a limit on the quantity covered

Example of benefits

Health service covered	Level of coverage
Prenatal consultations	100%, limited to three PCs per person and per year
Hospitalization	80%, limited to 12 days per person and per year
Eyeglasses	1,500 MUs, limited to one set per person and per year

The benefit in the first example covers 100 per cent of expenses incurred for prenatal consultations (PCs), up to a maximum limit of three consultations per person and per year. If the beneficiary consumes one, two or three PCs, the latter are covered in full. The fourth consultation, however, is not covered. This type of limit makes it possible to protect the scheme against the well-above-average consumption of some insured persons.

Formula for calculating the average quantity covered

The average quantity covered is lower than the average number of health services consumed by the reference population. See the following practical example for the method of calculation.

PRACTICAL EXAMPLE – CALCULATING THE AVERAGE QUANTITY IN THE CASE OF BENEFITS SUBJECT TO A LIMIT ON THE QUANTITY COVERED

Data concerning the "Prenatal consultations" service was collected for 150 pregnant women who had undergone at least one prenatal consultation in the course of the year. The summary table is as follows:

Number of times the service was utilized	1	2	3	4	5	6
Number of patients concerned	100	20	20	5	3	2

The benefit covers 100 per cent of expenses incurred, up to a limit of three prenatal consultations (PCs) per pregnant woman and per year. The quantity covered is thus:

- the actual quantity consumed by patients utilizing less than three PCs;
- three PCs for those utilizing more than three PCs.

Number of times the service was utilized	1	2	3	4	5	6
Number of patients concerned	100	20	20	5	3	2
Quantity covered	1	2	3	3	3	3

Consequently, the average quantity covered = [(100 × 1) + (20 × 2) + ((20 + 5 + 3 + 2) × 3)] / 150 = 1.53.

Note: The average quantity for a benefit covering 100 per cent of expenses incurred, not subject to a limit, would have been = [(100 × 1) + (20 × 2) + (20 × 3) + (5 × 4) + (3 × 5) + (2 × 6)] / 150 = 1.65.

Taking into account the impact of the benefit on beneficiaries' health care consumption

It can be assumed that the provision of the "Prenatal consultations" benefit will contribute to increasing the number of consultations consumed by women who, until now, consumed one or two PCs.

Based on a survey of a sample of pregnant women, the following assumptions (among others) may be formulated: 25 per cent of the women who, until now, consumed one PC will maintain the same level of consumption; 25 per cent will consume two consultations and 50 per cent will consume three. Fifty per cent of the women who, until now, consumed two PCs will maintain the same level of consumption, and 50 per cent will consume three PCs. The other women (three PCs and more) will maintain the same consumption pattern. Consequently, the quantities of prenatal consultations consumed are likely to be as follows:

Number of times the service was utilized	1	2	3	4	5	6
Number of patients concerned	25	35	80	5	3	2
Quantity covered	1	2	3	3	3	3

Thus, the average quantity covered will be equal to: [(25 × 1) + (35 × 2) + ((80 + 5 + 3 + 2) × 3)] / 150 = 2.43.

3. *Third category of benefit terms: Benefits subject to a numerical deductible*

Example of benefit

Health service covered	Level of coverage
Hospitalization	The first hospital day is not covered. The second hospital day and all subsequent days are covered at the rate of 80% of expenses incurred

In this case, if the beneficiary is hospitalized only one day, the cost of the hospitalization is not covered. If the beneficiary is hospitalized for more than one day, the first day remains at his or her expense. The benefit covers hospital costs beginning only with the second day of hospitalization.

This type of benefit covers health expenses only when they begin to pose financial problems to insured persons. The deductible for the first day of hospitalization serves to dissuade insured persons from requesting hospitalization for minor illnesses (requiring only one day of observation at the hospital).

Formula for calculating the average quantity covered

The average quantity covered is lower than the average number of health services consumed by the reference population. See the practical example below for the method of calculation.

PRACTICAL EXAMPLE – CALCULATING THE AVERAGE QUANTITY IN THE CASE OF BENEFITS SUBJECT TO A NUMERICAL DEDUCTIBLE

Data concerning the "Medical hospitalization" service was collected from 200 patients. The following summary table was drawn up:

Number of hospital days	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Number of patients concerned	35	15	15	35	30	25	10	10	5	5	5	3	3	2	2

The benefit covers 80 per cent of expenses incurred, with a deductible consisting of the first hospital day. The quantity covered is therefore: 0 days for patients hospitalized one day; the number of hospital days, minus one, for the others.

Number of hospital days	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Number of patients concerned	35	15	15	35	30	25	10	10	5	5	5	3	3	2	2
Quantity covered	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14

Thus, the average quantity covered = $[(0 \times 35) + (1 \times 15) + (2 \times 15) + (3 \times \ldots)] / 200 = 3.91$.

Note: The average quantity for a benefit covering 80 per cent of expenses incurred without a deductible would have been = $[(35 \times 1) + (15 \times 2) + (15 \times 3) + (35 \times 4) + \ldots] / 200 = 4.91$.

Calculating the average unit cost (→ useful regardless of which formula is applied)

When processing the data collected for objective 6: "To establish a basis for calculating premiums based on the health expenses of the target population" (see 3.4.6), a summary table was filled out.

As regards the first method of collection (based on the data provided by health facilities: registers, annual reports, statistics, testimony of health care staff), the summary table contains, for each pathology, the average cost of the service and the prevalence rate. A sample summary table (fictitious data) is provided below:

Pathology	Malaria	Respiratory problems	Diarrhoea	...
Average cost of the service	1000	1500	1200	
Prevalence rate	10%	15%	9%	

This form of presentation does not, however, allow for calculating the average unit cost for all benefit terms (not suitable for flat-rate/maximum benefits and monetary deductibles).

As regards the other methods of collection (tracking a sample of patients, management data of pre-existing health micro-insurance schemes), the first row of the summary table contains the cost of the service (1,000 MUs, 1,200 MUs, 1,500 MUs, etc.), and the second row contains the number of times this cost was noted. A sample summary table (fictitious data) is provided below:

Cost of the service	1000	1200	1500	1800	2000	...
Number of utilizations	10	25	50	10	5	

This form of presentation allows for calculating the average unit cost of the service, regardless of the benefit terms:

- First category of benefit terms (the most common): Benefits covering either 100 per cent of expenses incurred or Y per cent of expenses incurred, where Y<100 (benefits subject to a percentage co-payment).
- Second category of benefit terms: Benefits subject to a monetary limit ("maximum benefit" or "flat-rate benefit") that applies to each utilization.
- Third category of benefit terms: Benefits subject to a monetary deductible that applies to each utilization.

For more details on methods of collection and summary tables, please refer to:

▶ **3.4.6** – Example of processing the data collected for objective 6: "To establish a basis for calculating premiums based on the health expenses of the target population", *Processing the collected data in order to calculate the average unit cost*, page 95.

1. First category of benefit terms (the most common): Benefits covering either 100 per cent of expenses incurred or Y per cent of expenses incurred, where Y < 100 (benefits subject to a percentage co-payment)

Examples of benefits

Health service covered	Level of coverage
Consultations	80% of consultation fee (percentage co-payment of 20%)
Delivery at hospital	100% of maternity costs

Formula for calculating the average unit cost of coverage

The average unit cost of coverage of the health service is the amount covered, on average, for this service.

In the case where the benefit provides full coverage for expenses incurred, the average unit cost of coverage is equal to the average unit cost (for patients) of the health service as it was prior to the establishment of the health micro-insurance scheme, i.e. based on the average fee charged by health providers for this service.

Average unit cost (health service) = Average fee (service)

In the case in which the benefit covers only a percentage of the expenses incurred (percentage co-payment), the average unit cost of coverage is equal to this percentage multiplied by the average fee in use prior to the establishment of the health micro-insurance scheme.

Average unit cost (health service) = Y% × Average fee (service)
Where Y% is the coverage rate

The establishment of a health micro-insurance scheme does not contribute, a priori, to altering the average fees of health services unless the scheme concludes a fee agreement with health care providers aimed at modifying the fees charged.

PRACTICAL EXAMPLE – CALCULATING THE AVERAGE UNIT COST IN THE CASE OF BENEFITS COVERING 100 PER CENT OF EXPENSES INCURRED, OR SUBJECT TO A PERCENTAGE CO-PAYMENT

First example: The data collection was based on data provided by the health facilities (registers, annual reports, testimony of staff, statistics). The summary table contains the following information:

Pathology	1	2	3	4	5
Prevalence rate	10%	25%	30%	30%	5%
Average cost of a consultation	300	300	300	300	300
Average cost of a prescription	700	300	700	1 000	800
Average cost of laboratory tests	500	200	300	200	600

The benefit covers 100 per cent of expenses incurred for consultations, 80 per cent of expenses incurred for pharmacy (prescriptions) and 60 per cent of expenses incurred for laboratory tests.

PRACTICAL EXAMPLE – CALCULATING THE AVERAGE UNIT COST... *(cont.)*

	Average fee	Y% Average fee
Consultations	300 MUs	100% × 300 = 300 MUs
Pharmacy (prescriptions)	(10% × 700) + (25% × 300) + etc. = 695 MUs	80% × 695 = 556 MUs
Laboratory tests	(10% × 500) + (25% × 200) + etc. = 280 MUs	60% × 280 = 168 MUs

Second example: The data collection was based on tracking a sample of patients. The summary table contains the following information:

Cost of a consultation	200	300	400	500
Number of consultations concerned	1	9	1	1

Cost of a prescription	240	250	300	350	400	500	800
Number of prescriptions concerned	1	1	1	1	1	1	1

The benefit covers 100 per cent of expenses incurred for consultations and 80 per cent of expenses incurred for pharmacy (prescriptions).

	Average fee	Y% Average fee
Consultations	[(1 × 200) + (9 × 300) + (1 × 400) + (1 × 500)] / (1 + 9 + 1 + 1) = 3800 / 12 = 316.67	100% × 316.67 = 316.67 MUs
Pharmacy (prescriptions)	[(240 × 1) + (250 × 1) + etc.)] / (1 + 1 + ...) = 2840 / 7 = 405.71	80% × 405.71 = 324.57 MUs

2. Second category of benefit terms: Benefits subject to a monetary limit ("maximum benefit" or "flat-rate benefit") that applies to each utilization

Example of benefit

Health service covered	Level of coverage
Consultations	100% of expenses incurred, up to a maximum limit of 600 MUs per consultation

If the consultation fee is less than 600 MUs, the consultation is covered in full. If the fee is higher than 600 MUs, the benefit covers the maximum limit (600 MUs), and the difference between the fee and the maximum limit is borne by the member.

Example: If a consultation fee is 500 MUs, the benefit covers 100 per cent of expenses incurred, or 500 MUs, and the member pays nothing. If the consultation fee is 1,000 MUs, the benefit covers 600 MUs, and the remaining amount, or 400 MUs, is borne by the member.

Method of calculating the average unit cost of coverage

The average unit cost of coverage is lower than the average fee for the health service. See the practical example below for the method of calculation.

PRACTICAL EXAMPLE – CALCULATING THE AVERAGE UNIT COST IN THE CASE OF BENEFITS SUBJECT TO A "MAXIMUM BENEFIT" OR "FLAT-RATE BENEFIT"

Data concerning the "Consultations" service, drawn from 150 consultation cases, was used to prepare the following summary table:

Cost of a consultation	300	400	500	600	700	800	900	1000
Number of consultations concerned	10	20	50	30	20	10	5	5

The benefit covers 100 per cent of expenses incurred, up to a maximum of 600 MUs. The amount of coverage is 100 per cent of expenses incurred for patients who spent less than 600 MUs, and 600 MUs for the others.

Cost of a consultation	300	400	500	600	700	800	900	1000
Number of consultations concerned	10	20	50	30	20	10	5	5
Amount of coverage	300	400	500	600	600	600	600	600

Thus, the average unit cost of coverage = [(10 × 300) + (20 × 400) + (50 × 500) + (30 + 20 + 10 + 5 + 5) × 600 MUs] / 150 = 520 MUs.

Note: The average unit cost of a benefit covering 100 per cent of expenses incurred, not subject to a limit, would have been = [(10 × 300) + (20 × 400) + (50 × 500) + (30 × 600) + (20 × 700) + (10 × 800) + (5 × 900) + (5 × 1000)] / 150 = 570 UM.

3. *Third category of benefit terms: Benefits subject to a monetary deductible that applies to each utilization*

Example of benefit

Health service covered	Level of coverage
Surgical operations	100% of expenses incurred, minus deductible (2,000 MUs)

If surgery costs are less than 2,000 MUs, they are borne entirely by the member, and the coverage provided is zero. If surgery costs are higher than 2,000 MUs, the benefit covers the surgery costs, minus the amount of the deductible (2,000 MUs), which remains at the member's expense.

Example: If surgery costs are 1,500 MUs, no coverage is provided, and the member pays 1,500 MUs. If surgery costs are 3,000 MUs, coverage is 3,000 – 2,000 MUs, or 1,000 MUs, and the remaining 2,000 MUs (the deductible) is borne by the member.

Formula for calculating the average unit cost of coverage

In this case as well, the average unit cost of coverage is lower than the average fee for the health service. See the practical example below for the method of calculation.

PRACTICAL EXAMPLE – CALCULATING THE AVERAGE UNIT COST IN THE CASE OF BENEFITS SUBJECT TO A MONETARY DEDUCTIBLE

Data concerning the "Surgery" service, drawn from 150 cases of surgical operation, was used to prepare the following summary table:

Cost of the operation	500	1000	1500	2000	3000	4000	5000	10000
Number of cases concerned	10	20	50	30	20	10	5	5

The benefit covers 100 per cent of expenses incurred, minus a deductible of 2,000 MUs. The amount of the coverage is:

- 0 for patients who spent less than 2,000 MUs;
- 100 per cent of expenses incurred – 2,000 MUs, for patients who spent more than 2,000 MUs.

Cost of the operation	500	1000	1500	2000	3000	4000	5000	10000
Number of cases concerned	10	20	50	30	20	10	5	5
Amount of coverage	0	0	0	0	1000	2000	3000	8000

Thus, the average unit cost of coverage = [((10 + 20 + 50 + 30) × 0) + (20 × 1000) + (10 × 2000) + (5 × 3000) + (5 × 8000)] / 150 = 633.33 MUs.

Note: The average unit cost of a benefit covering 100 per cent of expenses incurred without a deductible would have been = [(10 × 500) + (20 × 1000) + (50 × 1500) + (30 × 2000) + (20 × 3000) + (10 × 4000) + (5 × 5000) + (5 × 10 000)] / 150 = 2233.33 MUs

Annual maximum benefits and annual deductibles: Calculating the average annual cost (→ useful if applying the general formula)

In the case of benefits subject to an "annual maximum benefit" or "annual monetary deductible", the maximum limit does not apply either to the quantity consumed or to the unit cost, but rather to the annual cost. It is therefore necessary to determine the distribution of the annual cost in order to calculate the pure premium. These figures may be obtained directly from a population sample. In this case, this means determining, for each person in the sample, the cumulative costs of each utilization of the health service in question. Failing this, the annual cost can be reconstituted from the figures for the unit cost and the quantity consumed (method used here).

1. First category of benefit terms: Benefits subject to an annual maximum benefit

Example of benefit

Health service covered	Level of coverage
Optical services	100% of expenses incurred, up to a maximum limit of 3,000 MUs per year and per person

Formula for calculating the average annual cost

The distribution of the annual cost is reconstituted on the basis of the unit cost and the quantity consumed. Next, a calculation is made of the average annual cost of coverage for the benefit in question. See the practical example below for the method of calculation.

PRACTICAL EXAMPLE – CALCULATING THE AVERAGE ANNUAL COST IN THE CASE OF BENEFITS SUBJECT TO AN ANNUAL MAXIMUM BENEFIT

Data on the "Optical" service, collected from 100 persons who purchased optical items during the year, was used to prepare a summary table containing the following quantities consumed:

Number of times optical items purchased over the course of the year	1	2	3
Number of patients concerned	80	18	2

Two patients made three optical purchases during the year, 18 made two and the vast majority (80/100) made only one. The average quantity = [(1 × 80) + (2 × 18) + (3 × 2)] / (80 + 18 + 2) = 1.22.

The unit costs (cost of each purchase) registered were as follows:

Cost of one set of optical items	1900	2000	2300	2500	2700	3000	3500	3700	4000	4500
Number of purchases concerned	5	30	5	30	5	30	5	5	5	2

The annual cost is reconstituted on the basis of the assumption (for the sake of simplicity) that each optical consumer purchased 1.22 sets of optical items in the course of the year.

Annual cost of optical purchases	2318	2440	2806	3050	3294	3660	4270	4514	4880	5490
Number of purchases concerned	5	30	5	30	5	30	5	5	5	2

The benefit covers 100 per cent of expenses incurred, up to a maximum limit of 3,000 MUs per person and per year. The annual amount covered is 100 per cent of expenses incurred for patients who spent less than 3,000 MUs over the course of the year and 3,000 MUs for the others.

Annual amount covered	2318	2440	2806	3000	3000	3000	3000	3000	3000	3000
Number of purchases concerned	5	30	5	30	5	30	5	5	5	2

The average annual cost of the coverage is thus: [(2318 × 5) + (2440 × 30) + ...)] / (5 + 30 +...) = 2826.39 MUs.

2. *Second category of benefit terms: Benefits subject to an annual monetary deductible*

Example of benefit

Health service covered	Level of coverage
Consultations and pharmacy	100% of expenses incurred in excess of an annual deductible of 3,000 MUs

Formula for calculating the average annual cost

In this case as well, the distribution of the annual cost is reconstituted on the basis of the unit cost and the quantity consumed. Next, the average annual cost of coverage for the benefit in question is calculated. See the practical example below for the method of calculation.

PRACTICAL EXAMPLE – CALCULATING THE AVERAGE ANNUAL COST IN THE CASE OF BENEFITS SUBJECT TO AN ANNUAL MONETARY DEDUCTIBLE

Data concerning the cluster of health services "Consultations and pharmacy" was collected from 150 patients who had undergone at least one consultation during the year (with or without purchase of medicines). The summary table is as follows:

Number of times the service was utilized	1	2	3	4	5	6
Number of patients concerned	100	20	20	5	3	2

The average quantity of utilization of the service is thus: [(1 × 100) + (2 × 20) + ...)] / 150 = 1.65.

The following unit costs (of consultations and, where applicable, medicines) were registered:

Cost of the service	700	1000	3000	5000	7000	10 000	15 000	20 000
Number of cases concerned	20	25	30	50	50	45	20	7

The annual cost is reconstituted on the basis of the assumption (for the sake of simplicity) that each patient utilized the service 1.65 times in the course of the year.

Annual cost	1155	1650	4950	8250	11 550	16 500	24 750	33 000
Number of cases concerned	20	25	30	50	50	45	20	7

The benefit covers 100 per cent of expenses incurred in excess of an annual deductible of 3,000 MUs per person, which is borne by the patient. The annual amount covered is zero for patients who spent less than 3,000 MUs during the year, and 100 per cent of expenses incurred, minus the amount of the deductible, for patients who spent more than 3,000 MUs during the year.

Annual amount covered	0	0	1950	5250	8550	13 500	21 750	30 000
Number of cases concerned	20	25	30	50	50	45	20	7

The average annual cost of coverage is equal to: [(0 × 20) + (0 × 25) + (1950 × 30) + ...)] / (20 + 25 + 30 + ...) = 8,101.22 MUs.

Calculating the frequency of utilization of a health service (→ useful if applying the specific formula)

1. Recommended method of data collection and calculation: Based on household surveys and data supplied by health facilities

When processing the data collected for objective 6, three indicators were calculated: the frequency of illness, the expected proportion of cases of illness to be treated by the health facility and the share accounted for by the health service in the total number of cases treated by the health facility. For more details, please refer to:

▶ **3.4.6** – Example of processing the data collected for objective 6: "To establish a basis for calculating premiums based on the health expenses of the target population", *Processing the collected data in order to calculate frequency*, page 102.

The frequency of utilization of the health service is equal to the product of these three indicators:

Frequency (health service) =
Frequency (illness)
× **Expected** proportion of cases of illness to be treated by health facility
× Share of health service in total number of cases treated by health facility

2. Alternative method of data collection and calculation of frequency: Based on the management data of pre-existing health micro-insurance schemes

The management data of health micro-insurance schemes (see also 3.4.6) was used to produce two indicators: the number of utilizations of the health service during the year by insured persons and the total population covered by the scheme. The frequency of utilization of the health service is obtained by dividing the first indicator by the second:

$$\textbf{Frequency (health service)} = \frac{\text{Number of utilizations of health service during year}}{\text{Number of persons covered by scheme}}$$

4.5.2*(b)* Calculating the pure premium based on the operating costs of the health facilities

Reminder: The second method consists of calculating the pure premium based on the estimated operating costs of the health facilities. This estimate is made during the data-collection phase in the context of objective 7: "To establish a basis for calculating premiums based on the operating costs of health facilities".

Estimates of fixed costs, variable costs and the expected number of users for each health facility may be used to calculate the pure premium. For an idea of the method of calculation used, please refer to the practical example provided in:

▶ **3.4.7** – Exemple of processing the data collected for objective 7: "To establish a basis for calculating premiums based on the operating costs of health facilities", page 108.

4.5.3 Adjusting the pure premium

Taking socio-economic characteristics into account

Once the pure premium has been calculated for each health service, it is possible to adjust it according to individual characteristics that have an impact on the medical consumption of this service.

These concern primarily the following characteristics: age, sex, place of residence (close to health facilities or not), socio-occupational category (some occupations are more exposed than others to certain illnesses and thus to the consumption of certain health services).

It should be possible to demonstrate the existence of a correlation between one or more of these characteristics and the cost of the risk with the help of statistical surveys on medical consumption patterns.

Example: A study of the scope of a hospital shows the following frequentation rates:

- zone 1 (close): 7.5 per cent;
- zone 2 (intermediate): 5 per cent;
- zone 3 (far): 2.5 per cent.

It is possible to take the distance factor into account in calculating the premiums corresponding to hospital services by making geographic adjustments:

- adjusted pure premium (zone 1) = 1.5 × reference pure premium;
- adjusted pure premium (zone 2) = 1 × reference pure premium;
- adjusted pure premium (zone 3) = 0.5 × reference pure premium.

The values of these coefficients are provided for information purposes. It is also possible to utilize other coefficients that do not correspond to the ratio of the frequentation rates.

Taking into account the impact of third-party payment and health education and prevention services

The health micro-insurance scheme may set up:

- mechanisms facilitating access to care, such as third-party payment;
- services, such as the organization of health information sessions.

Certain services and methods of coverage have a positive impact (inflationary) or negative impact (deflationary) on medical consumption and, by extension, on the cost of the risk. Thus, third-party payment mechanisms usually contribute to increasing medicine expenses (over-consumption, over-prescription). Information sessions on generic drugs may, conversely, serve to lower medicine expenses, as patients become more amenable to the prescription of generic drugs.

The impact of these services or methods of coverage on the pure premium may be taken into account by making adjustments.

Example: If it is noted that setting up a third-party payment mechanism has the effect of increasing medicine expenses by 20 per cent, two pure premiums may be calculated for the category of medicines:

- pure premium (with third-party payment) = 1.2 × reference pure premium;
- pure premium (without third-party payment) = 1 × reference pure premium.

A compromise must then be reached between the convenience of a third-party payment mechanism and its cost.

Taking into account the impact of the waiting period

The introduction of a waiting period has two effects: it discourages opportunistic behaviour, such as joining a health micro-insurance scheme in order to meet an immediate need, and it contributes, a priori, to diminishing the average quantity of services consumed in the first year of membership, thereby reducing the cost of the risk.

The second impact may be evaluated and taken into account in calculating the pure premium. The savings accumulated in the first year of membership may be reflected either in the first year of premium payments, or over several years of premium payments (which makes it possible to maintain the same premium level in the first year and in subsequent years). The practical example below illustrates how to take this impact into account.

In practice, the introduction of a waiting period is aimed primarily at discouraging opportunistic behaviour and functions as an additional safety loading. For this reason, an adjustment is usually not made to the pure premium.

PRACTICAL EXAMPLE – TAKING INTO ACCOUNT THE IMPACT OF THE WAITING PERIOD IN CALCULATING THE PURE PREMIUM ("CONSULTATIONS" SERVICE)

Assumptions:

- The average quantity covered is 1.2 consultations per year.
- A three-month waiting period applies in the first year of membership.
- The estimated average length of membership is seven years.
- Constant parameters are applied for seven years without applying updates.
- The probability of utilizing the "Consultations" service is 0.45.
- The average unit cost of a consultation is 400 MUs.

During the first three months (waiting period) the insurance scheme is able to "save" $1.2 \times 3/12$, or 0.3 units of consultation per insured person.

- The cost of the risk for the first year = $0.45 \times 0.9 \times 400$.
- The cost of the risk for subsequent years = $0.45 \times 1.2 \times 400$.

The scheme wishes to charge the same premium for the first year and for subsequent years. Consequently, the savings resulting from the waiting period in the first year are carried over to all premiums (first year and subsequent years). The sum of the pure premiums over the length of the membership (seven years, on average) is as follows:

- with the waiting period: $(0.9 + (6 \times 1.2)) \times 0.45 \times 400 = 1{,}458$ MUs;
- without the waiting period: $7 \times 1.2 \times 0.45 \times 400 = 1{,}512$ MUs.

Savings resulting from the waiting period are:

- 54 MUs over seven years, i.e. 7.7 MUs per year.

The annual pure premium should therefore be: $1{,}458/7 = 208.3$ MUs.

General formula

The introduction of a waiting period allows for an annual reduction of:

$$\textbf{Annual reduction} = \frac{d}{12 \times D} \times \text{Pure premium}$$

where "d" is the duration (in months) of the waiting period during the first year (e.g. three months) and "D" is the average estimated duration (in years) of membership (e.g. seven years).

In order to reflect the reduction in members' premiums (first year and subsequent years), the annual adjusted pure premium will be as follows:

$$\text{Adjusted pure premium} = \left[1 - \frac{d}{12 \times D}\right] \times \text{Pure premium}$$

Taking into account insurance-related risks: moral hazard, over-prescription, adverse selection, and the occurrence of catastrophic cases

Moral hazard

Moral hazard is a phenomenon according to which members of a health micro-insurance scheme tend to consume covered health services at above-average levels owing to the fact that they know they are insured.

Example: If a benefit provides coverage for five prenatal consultations (PCs), women beneficiaries will have a tendency to consume five PCs (even if three PCs would have sufficed).

They will also tend to modify the level of their medical consumption in order to take maximum advantage of the benefits provided.

Example: If a "Consultations" benefit is subject to a flat-rate benefit, insured persons will tend to consume the whole amount; they will, for example, consult private health care providers that are more expensive than those they usually consult.

The risk of over-prescription

The risk of over-prescription is a phenomenon according to which health care providers may cause sharp increases in health costs by prescribing unnecessary health services. Such actions are not contested by patients solely because they know they are insured.

Adverse selection

Adverse selection is a phenomenon according to which persons with a high risk of illness tend to enrol in large numbers, while persons in good health tend to abstain from enrolling.

If the health micro-insurance scheme proposes several benefit plans, adverse selection also occurs when more comprehensive benefit plans are preferred by persons who present a high risk of illness.

The cost of the risk attributable to these persons is higher than the average cost observed in the overall target population, and thus, higher than the pure premium calculated for a reference individual. This phenomenon may jeopardize the financial viability of the scheme because it entails a "higher than expected" level of expenses for each person.

Catastrophic cases

Catastrophic cases are events that affect a large share of the covered population (epidemics) and/or whose unit costs are high, such as a very costly hospitalization. The occurrence of catastrophic cases may jeopardize the financial viability of a health micro-insurance scheme.

The impact of these risks

It is difficult to calculate the impact of these risks on premiums. Moral hazard and over-prescription, in particular, do not concern all individuals and may vary widely from one population group to the next.

At best, the scheme can protect itself against these risks by making a sensible selection of services to be covered and coverage levels. It can:

- carefully choose the health services to be covered: avoid covering planned hospitalizations; exclude brand-name drugs; limit coverage of medicines to generic drugs or to a list of essential drugs;
- offer increasing levels of coverage along with additional years of membership;
- make a reasonable and prudent selection of coverage levels: in particular, avoid covering 100 per cent of expenses incurred; introduce monetary and numerical limits on the coverage of certain health care services; introduce monetary and numerical deductibles.

4.5.4 Calculating the safety loading

The main purpose of the safety loading is to protect the scheme against the statistical risk that, among the covered population, the proportion of consumers of each health service may exceed the proportion initially calculated on the basis of the target population's consumption patterns.

The risk of divergence is even higher when the size of the covered population (N) is small and the probability of consuming the health service (p) is low. Thus, when the number of insured persons is low (e.g. 300) and the covered risk is very unpredictable (e.g. hospitalization, caesarean delivery or other surgical operations), the risk of divergence is highest.

This risk may be designated by the coefficient (N,p) and the Safety loading = Coefficient (N,p) × Pure premium.

The objective of the safety loading, as presented here, is to compensate for a potential and unpredictable divergence from the average figure that was used in calculating the risk. It is determined solely on the basis of mathematical rules. Certain actors also include a percentage of the pure premium in the safety loading as a means of covering other unforeseeable costs (operating costs, fee increases, the impact of insurance-related risks, etc.)

Indicative values of the coefficient (N,p)

P	N = 100	N = 500	N = 1000	N = 2000	N = 5000	N = 10000	N = 20000	N = 50000	N = 80000
0.01	3.07	1.37	0.97	0.69	0.43	0.31	0.22	0.14	0.11
0.02	2.16	0.97	0.68	0.48	0.31	0.22	0.15	0.10	0.08
0.03	1.76	0.79	0.56	0.39	0.25	0.18	0.12	0.08	0.06
0.04	1.51	0.68	0.48	0.34	0.21	0.15	0.11	0.07	0.05
0.05	1.35	0.60	0.43	0.30	0.19	0.13	0.10	0.06	0.05
0.10	0.93	0.41	0.29	0.21	0.13	0.09	0.07	0.04	0.03
0.15	0.74	0.33	0.23	0.16	0.10	0.07	0.05	0.03	0.03
0.20	0.62	0.28	0.20	0.14	0.09	0.06	0.04	0.03	0.02

Indicative values of the coefficient (N.p) *(cont.)*

P	N = 100	N = 500	N = 1000	N = 2000	N = 5000	N = 10000	N = 20000	N = 50000	N = 80000
0.25	0.54	0.24	0.17	0.12	0.08	0.05	0.04	0.02	0.02
0.30	0.47	0.21	0.15	0.11	0.07	0.05	0.03	0.02	0.02
0.35	0.42	0.19	0.13	0.09	0.06	0.04	0.03	0.02	0.01
0.40	0.38	0.17	0.12	0.08	0.05	0.04	0.03	0.02	0.01
0.45	0.34	0.15	0.11	0.08	0.05	0.03	0.02	0.02	0.01
0.50	0.31	0.14	0.10	0.07	0.04	0.03	0.02	0.01	0.01
0.55	0.28	0.12	0.09	0.06	0.04	0.03	0.02	0.01	0.01
0.60	0.25	0.11	0.08	0.06	0.04	0.03	0.02	0.01	0.01
0.65	0.23	0.10	0.07	0.05	0.03	0.02	0.02	0.01	0.01
0.70	0.20	0.09	0.06	0.05	0.03	0.02	0.01	0.01	0.01
0.75	0.18	0.08	0.06	0.04	0.03	0.02	0.01	0.01	0.01
0.80	0.15	0.07	0.05	0.03	0.02	0.02	0.01	0.01	0.01
0.85	0.13	0.06	0.04	0.03	0.02	0.01	0.01	0.01	0.00
0.90	0.10	0.05	0.03	0.02	0.01	0.01	0.01	0.00	0.00
0.95	0.07	0.03	0.02	0.02	0.01	0.01	0.01	0.00	0.00

Example of application

Assumptions: Probability (health service) = 0.2; Planned size of population covered by the health micro-insurance scheme in first year = 1,000 persons (members + dependents).
Results: Coefficient (N=1000, p=0.2) = 20% and Safety loading = 20% Pure premium.

Method of calculating the coefficient (N,p)

The coefficient (N,p) is calculated by using one of the properties of the standard normal distribution: the calculation of a confidence interval $\mathbf{I}\, P_{0.998}$, which includes the expected proportion of consumers of the service with odds of 99/100.

4.5.5 Sample premium calculation chart

The benefit/premium combination is selected from among several scenarios developed for this purpose. This selection may be made during working group sessions (participatory approach). In this case, the steering committee prepares the premium calculation charts that will be used during the working group sessions in order to determine the cost of the various proposals put forward. Each calculation chart corresponds to a benefit plan and includes a row for each health service, as well as columns for the following:

- "Coverage rate" and "Co-payment", which indicate the type of coverage proposed for the covered health service and the level of the co-payment, if any;

- "Probability", "Average quantity" and "Average unit cost", which list the calculated values of each of these indicators for the health service in question;
- "Pure premium", which lists the result of the equation: Probability × Average quantity × Average unit cost;
- "Safety loading", which lists the result of the equation: Pure premium × Coefficient (N,p);
- "Operating cost", which lists the result of the equation: A% × (Pure premium + Safety loading);
- "Surplus", which lists the result of the equation: B% × (Pure premium + Safety loading + Operating cost);
- "Total", which lists the result of the equation: Pure premium + Safety loading + Operating cost + Surplus.

	Benefits		Statistical data (Pure premium)			Calculation of premiums				
Health services (examples)	**Coverage rate**	**Co-payment**	**Prob-ability**	**Average quantity**	**Average unit cost**	**Pure premium**	**Safety loading**	**Operating cost A%**	**Surplus B%**	**Total**
Consultations										
Pharmacy										
Uncomplicated deliveries										
Prenatal consultations										
X-rays										
Laboratory tests										
Hospital accom-modation fees										
									Annual premium per person	

4.5.6 Performing premium calculations (practical example)

This requires the step-by-step completion of the premium calculation chart. The result obtained may then be analyzed on the basis of the three criteria for selecting the benefit/premium combination: relevance, accessibility and visibility. Additionally, it is important to ensure that the proposed benefit plan allows for protecting the scheme from insurance-related risks: moral hazard, over-prescription, adverse selection and the occurrence of catastrophic cases. If the plan is deemed unacceptable, services may be added or subtracted and levels of coverage modified in order to produce a new plan, which may, in turn, be analyzed on the basis of the three criteria mentioned above.

"Coverage rate" and "Co-payment" [6] ***columns***

	Benefits		Statistical data (Pure premium)			Calculation of premiums				
Health services (examples)	**Coverage rate**	**Co-payment**	**Probability**	**Average quantity**	**Average unit cost**	**Pure premium**	**Safety loading**	**Operating cost A%**	**Surplus B%**	**Total**
Consultations	100%	0								
Pharmacy	100%	0								
Uncomplicated deliveries	100%	0								
Prenatal consultations	100% maximum 3 per year	0*								
X-rays	100% up to a limit of 1,200 MUs	0*								
Laboratory tests	80%	160								
Hospital accommodation fees	80% with deductible for 1st day	8900								
									Annual premium per person	

* *In most cases*

The "Co-payment" column indicates for each health service the amount of the expenses that would, on average or in general, be borne by members, depending upon the coverage level. These figures are taken into account when making a selection from among various scenarios.

Note: If the co-payment is too high, the health micro-insurance scheme may fail to resolve the problem of financial accessibility in terms of the health service in question. If it is too low, the scheme may be confronted with the problem of over-consumption.

In this example, the "Consultations", "Pharmacy" and "Uncomplicated deliveries" services are covered in full. The level of co-payment = 0 for these services.

"Prenatal consultations" (PCs) are covered in full up to a maximum limit of three PCs per pregnant woman and per year. (In most cases, women consume less than three PCs; consequently, the level of co-payment listed in the table is "0".)

The "X-ray" benefit is subject to a maximum benefit of 1,200 MUs per X-ray. (In most cases, X-rays cost less than 1,200 MUs; consequently, the level of co-payment listed in the table is "0".)

The "Laboratory tests" benefit covers 80 per cent of expenses incurred (with a percentage co-payment of 20 per cent). If the average fee for laboratory tests is 800 MUs, and the co-payment is 20 per cent of the average fee, the average level of co-payment for laboratory tests = 160 MUs.

The "Hospital accommodation" benefit covers 80 per cent of expenses, excluding the first day, which is not covered (deductible for first hospital day). On average, hospital accommodation fees amount to 5,000 MUs per day. Thus, the co-payment is 5,000 MUs the first day and 1,000 MUs per day for each subsequent hospital day, which totals 8,900 MUs for an average-length hospital stay of 4.9 days.

[6] All calculated data (probabilities, quantities and average fees) are fictitious.

"Probability", "Average quantity", "Average unit cost" and "Pure premium" columns

	Benefits		Statistical data (Pure premium)			Calculation of premiums				
Health services (examples)	**Coverage rate**	**Co-payment**	**Probability**	**Average quantity**	**Average unit cost**	**Pure premium**	**Safety loading**	**Operating cost A%**	**Surplus B%**	**Total**
Consultations	100%	0	0.50	2.20	500	550.0				
Pharmacy	100%	0	0.50	2	800	800.0				
Uncomplicated deliveries	100%	0	0.03	1	3000	90.0				
Prenatal consultations	100% maximum 3 per year	0*	0.02	1.53	500	15.3				
X-rays	100% up to a limit of 1,200 MUs	0*	0.10	1	907	90.7				
Laboratory tests	80%	160	0.15	2	640	192.0				
Hospital accommodation fees	80% with deductible for 1st day	8900	0.04	3.91	4000	625.6				
						Annual premium per person				

Pure premium =
Probability
× Average quantity
× Average unit cost

* *In most cases*

Services for which full coverage is provided

The results of the data-collection phase indicate that for the "Consultations" service:

- the probability of consuming the service at least once per year = 0.5;
- the average number of consultations per user = 2.2 consultations per year;
- the average consultation fee = 500 MUs.

Consultations are covered in full. Consequently, the pure premium ("Consultations" service) = **0.5 × 2.2 × 500 = 550 UM**.

The pure premium for the "Pharmacy" service and the "Uncomplicated deliveries" service is calculated in the same way.

Services for which full coverage is provided subject to a limit on the quantity covered

The results of the data-collection phase indicate that for the "Prenatal consultations" service:

- the probability of consuming the service at least once per year = 0.02;
- the average fee for a prenatal consultation (PC) = 500 MUs;
- the results of the collection concerning the number of utilizations of the "Prenatal consultations" service are as follows:

Number of times the service was utilized	1	2	3	4	5	6
Number of patients concerned	100	20	20	5	3	2

The benefit covers 100 per cent of expenses incurred, up to a maximum limit of three PCs per person (pregnant woman) and per year. The quantity covered is therefore the actual quantity for patients utilizing less than three PCs, and three PCs for the others.

Quantity covered	1	2	3	3	3	3
Number of patients concerned	100	20	20	5	3	2

Thus, the average quantity covered = [(100 × 1) + (20 × 2) + ((20 + 5 + 3 + 2) × 3)] / 150 = 1.53. Consequently, the pure premium (PCs) = **0.02 × 1.53 × 500 = 15.3 MUs**.

Services for which full coverage is provided up to a maximum limit

The results of the data-collection phase show that for the "X-ray" service, the following costs were recorded:

Unit cost	800	1000	1500	2000	2500
Number of cases of X-rays recorded	38	12	6	3	1

The benefit covers 100 per cent of expenses incurred, up to a maximum limit of 1,200 MUs per X-ray. The unit costs covered are thus as follows:

Unit cost	800	1000	1200	1200	1200
Number of cases of X-rays recorded	38	12	6	3	1

Thus, the average unit cost is 907 MUs. The probability is 0.1 and the average quantity covered for one X-ray is 1 X-ray per user and per year. The pure premium (X-rays) = **0.1 × 1 × 907 = 90.7 MUs**.

Services for which coverage is provided at the rate of 80 per cent of expenses incurred

The results of the data-collection phase indicate that for the "Laboratory tests" service:

- the probability of consuming the service at least once per year = 0.15;
- the average number of tests per user = 2 per year;
- the average fee for laboratory tests = 800 MUs.

Coverage of laboratory tests is provided at the rate of 80 per cent of expenses incurred. Consequently, the average unit cost ("Laboratory tests" service) = 640 MUs. The pure premium ("Laboratory tests" service) = **0.15 × 2 × 640 = 192 MUs**.

Services for which coverage is subject to a numerical deductible

The results of the data collection indicate the following lengths of stay at hospital:

Length of stay (number of days)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Number of patients concerned	35	15	15	35	30	25	10	10	5	5	5	3	3	2	2

Hospital accommodation fees for the first day of hospitalization are not covered. The quantity covered for patients hospitalized one day is thus "0". For all other patients, it is the number of hospital days minus one.

Quantity covered	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Number of patients concerned	35	15	15	35	30	25	10	10	5	5	5	3	3	2	2

Thus, the average quantity covered = [(0 × 35) + (1 × 15) + (2 × 15) + (3 × 35) + ...] / 200 = 3.91. The average fee for one hospital day is 5,000 MUs; the benefit covers only 80 per cent of expenses; thus, the average unit cost covered is 4,000 MUs.

The probability of a hospital stay is equal to 0.04. Thus, the pure premium (accommodation fees) = **0.04 × 3.91 × 4,000 = 625.6 MUs**.

"Safety loading" column

	Benefits		Statistical data (Pure premium)			Calculation of premiums				
Health services (examples)	**Coverage rate**	**Co-payment**	**Probability**	**Average quantity**	**Average unit cost**	**Pure premium**	**Safety loading**	**Operating cost A%**	**Surplus B%**	**Total**
Consultations	100%	0	0.50	2.20	500	550.0	55.0			
Pharmacy	100%	0	0.50	2	800	800.0	80.0			
Uncomplicated deliveries	100%	0	0.03	1	3000	90.0	50.4			
Prenatal consultations	100% maximum 3 per year	0*	0.02	1.53	500	15.3	10.4			
X-rays	100% up to a limit of 1,200 MUs	0*	0.10	1	907	90.7	26.3			
Laboratory tests	80%	160	0.15	2	640	192.0	44.2			
Hospital accommodation fees	80% with deductible for 1st day	8900	0.04	3.91	4000	625.6	300.3			
									Annual premium per person	

Safety loading = Coefficient (N,p) × Pure premium

* *In most cases*

The population covered in the first year is estimated at 1,000 persons. The following chart lists the values for the coefficient (N,p), where N = 1,000:

Probability (p)	Population (N=1000)
0.02	0.68
0.03	0.56
0.04	0.48
0.1	0.29
0.15	0.23
0.5	0.1

Coefficient (N,p)

For each health service, the following formula is used to calculate the safety loading: Coefficient (N,p) × Pure premium. Thus, for the "Consultations" service: Probability = 0.5; Coefficient (N,p) = 0.10; and Safety loading = 0.10 × 550 MUs = 55 MUs.

"Operating costs" and "Surplus" columns

Operating cost =
10% × (Pure premium + Safety loading)

	Benefits		Statistical data (Pure premium)			Calculation of premiums				
Health services (examples)	**Coverage rate**	**Co-payment**	**Probability**	**Average quantity**	**Average unit cost**	**Pure premium**	**Safety loading**	**Operating cost 10%**	**Surplus 5%**	**Total**
Consultations	100%	0	0.50	2.20	500	550.0	55.0	60.5	33.3	
Pharmacy	100%	0	0.50	2	800	800.0	80.0	88.0	48.4	
Uncomplicated deliveries	100%	0	0.03	1	3000	90.0	50.4	14.0	7.7	
Prenatal consultations	100% maximum 3 per year	0*	0.02	1.53	500	15.3	10.4	2.6	1.4	
X-rays	100% up to a limit of 1,200 MUs	0*	0.10	1	907	90.7	26.3	11.7	6.4	
Laboratory tests	80%	160	0.15	2	640	192.0	44.2	23.6	13.0	
Hospital accommodation fees	80% with deductible for 1st day	8900	0.04	3.91	4000	625.6	300.3	92.6	50.9	
									Annual premium per person	

* *In most cases*

Surplus =
5% × (Pure premium + Safety loading + Operating cost)

Initially, the operating cost is set at 10 per cent × (Pure premium + Safety loading). This percentage may be revised (most likely upwards) when the budget estimate is established. The level of the surplus is set at 5 per cent × (Pure premium + Safety loading + Operating cost).

"Total" column

Total premiums =
Pure premium + Safety loading + Operating cost + Surplus

	Benefits		Statistical data (Pure premium)			Calculation of premiums				
Health services (examples)	**Coverage rate**	**Co-payment**	**Probability**	**Average quantity**	**Average unit cost**	**Pure premium**	**Safety loading**	**Operating cost 10%**	**Surplus 5%**	**Total (MUs)**
Consultations	100%	0	0.50	2.20	500	550.0	55.0	60.5	33.3	698.8
Pharmacy	100%	0	0.50	2	800	800.0	80.0	88.0	48.4	1016.4
Uncomplicated deliveries	100%	0	0.03	1	3000	90.0	50.4	14.0	7.7	162.2
Prenatal consultations	100% maximum 3 per year	0*	0.02	1.53	500	15.3	10.4	2.6	1.4	29.7
X-rays	100% up to a limit of 1,200 MUs	0*	0.10	1	907	90.7	26.3	11.7	6.4	135.1
Laboratory tests	80%	160	0.15	2	640	192.0	44.2	23.6	13.0	272.8
Hospital accommodation fees	80% with deductible for 1st day	8900	0.04	3.91	4000	625.6	300.3	92.6	50.9	1069.4
									Annual premium per person	**3384.3**

* *In most cases*

Annual premium per person = Sum of premiums for each service

The following calculation is made for each health service: Total premium (service) = Pure premium + Safety loading + Operating cost + Surplus. The annual premium (unadjusted) for each individual is then obtained by adding together the premiums for each health service.

Adjusting the pure premium of certain health services

A decision is made to set up a third-party payment mechanism for pharmacy services. Based on previous experience, it is assumed that this payment provision will serve to increase medicine expenses by 20 per cent. The new table is identical to the previous table, except for the "pharmacy" row.

Adjusted pure premium = 1.2 × 800 MUs = 960 MUs

	Benefits		Statistical data (Pure premium)			Calculation of premiums				
Health services (examples)	**Coverage rate**	**Co-payment**	**Proba**	**Average quantity**	**Average unit cost**	**Pure premium**	**Safety loading**	**Operating cost 10%**	**Surplus 5%**	**Total (MUs)**
Pharmacy	100%	0	0.50	2	800	**960**	96	105.6	58.1	1219.7
									Annual premium per person	**3587.6**

Next, the premium corresponding to the "Pharmacy" service is recalculated, which has the effect of increasing the annual premium per person from 3,384.3 MUs to 3,587.6 MUs. Deciding on a third-party payment mechanism for the "Pharmacy" service is a trade-off between the service provided (not having to advance expenses) and its financial impact on premium levels.

Costs associated with third-party payment and prevention/health information services

The cost of third-party payment for pharmacy services (associated with making contractual arrangements with health care providers and invoice monitoring) and of health information sessions (organization costs) are added to the basic premium (+ 50 MUs per person and per year for each service, or a total of + 100 MUs). The annual premium per person is then equal to 3,687.6 MUs.

The average cost of emergency transport is estimated at 100 MUs per person and per year. This cost is added to the individual premium for persons subscribing to this service (offered as an optional benefit).

Periodicity of premium payments

If the scheme plans to institute monthly premium instalments, the annual premium is divided by 12.

	Annual premium per person	Monthly premium per person
Without emergency transport service	3687.6 MUs	307.3 MUs
+ Emergency transport service	+ 100 MUs	+ 8.3 MUs

Method of calculating individual and family premiums

When applying the "individual" premium, each covered person "pays" the amount of the annual premium per person. A family of five would therefore be required to pay five times this amount.

	Annual premium per person	Annual premium for a family of five
Without emergency transport service	3687.6 MUs	18 438 MUs

When applying the "family" premium, each covered family pays a fixed premium amount, regardless of the number of persons covered (adults, children).

In order to calculate the family premium, all that is required is to provide a very precise definition of the term "family" and to determine the average number of persons per family (e.g. 6.7 persons). Such benefit terms give large families an advantage at the expense of small families. In this example, the amount of the "family" premium = 6.7 × Annual premium per person.

	Annual premium per person	Annual premium for a family regardless of family size
Without emergency transport service	3687.6 MUs	24 707 MUs

A scheme may also consider charging premiums that are proportional to families' income levels, which would imply the subsidization of the poorest families by the richest.

Example: The distribution of income in a target population is as follows:
- less than 500,000 MUs per year: 57.9 per cent of families;
- from 500,000 to 1,000,000 MUs per year: 24.3 per cent of families;
- more than 1,000,000 MUs per year: 17.8 per cent.

By setting the amount of the family premium per year at 20,000 MUs for the first bracket, 24,707 MUs for the second bracket and 40,000 MUs for the third bracket, the scheme is able to maintain an average premium of 24,707 MUs, thereby enabling the poorest families to benefit from insurance. This system of cross subsidization may, however, be difficult to set up. Other types of subsidies may also be sought, particularly those provided by the State.

4.5.7 Calculating willingness to pay

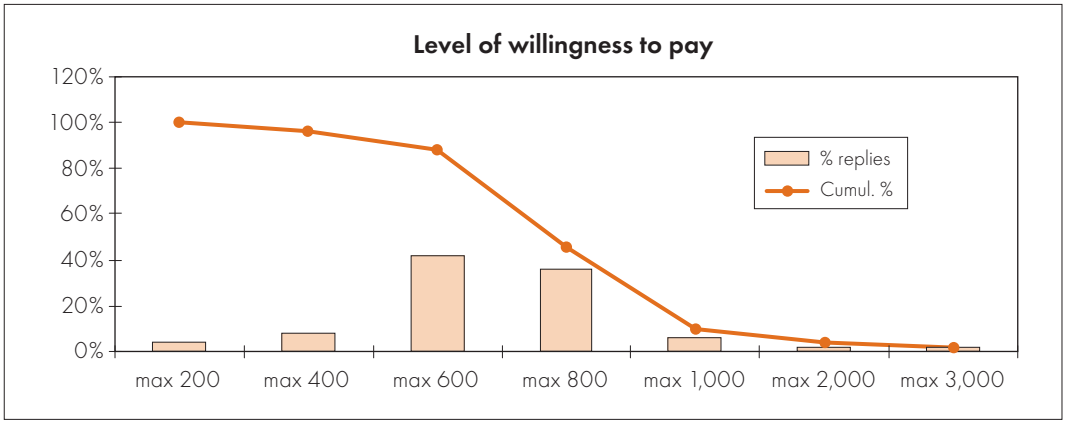
Sample data-presentation materials for data concerning the level of willingness to pay

For details concerning the method of processing collected data on the level of willingness to pay in order to produce directly usable information, please refer to:

▶ **3.4.8** – Example of processing the data collected for objective 8: "To evaluate the target population's willingness to pay", page 110.

Data concerning the population's level of willingness to pay may be illustrated by a graph that shows the percentage of positive replies and the cumulative percentage for each premium bracket.

In the following example, the premium level of 600 MUs was ticked on 42 per cent of the replies, and 88 per cent of households (cumulative percentage) would accept a premium level of 600 MUs or more. The premium level of 800 MUs was ticked on 36 per cent of the replies, and 46 per cent of households would accept a premium level of 800 MUs or more.



4.6 Preparing negotiations or agreements with partner organizations (health care providers and others)

Sample "Health care providers" chart

The "Health care providers" chart is a decision-making tool that may be used to specify the terms of agreements with health care providers. It contains the data compiled and indicators calculated for objective 9: "To establish a basis for negotiating with health care providers, negotiating with transport operators, collaborating with prevention programmes; and obtaining information on public aid". Such agreements may concern fees, quality standards, the establishment of treatment protocols or the method to be used to pay for health services (fee-for-service or global payment). They may also concern third-party payment agreements. In the case of the latter, an understanding must also be reached regarding the services to be included in the third party payment mechanism, the verification procedures to be followed and the rules pertaining to invoicing and payment.

Name of health facility: _____

Address: _____

Name of person contacted in order to prepare agreements: _____

Fees for health services (that the scheme plans to cover)

Name of service	Official fee	Fee negotiated by other HMISs	Overcharges (estimated)	First fee proposal Date:	Second fee proposal Date:	Negotiated fee Date:
Consultations						
Medicines						
...						

Quality standards

Quality criteria	Level of objective quality	Level of perceived quality	Problems relating to functioning	Suggestions for improvement	Quality objective envisaged by Date :	Accompanying measures envisaged
Length of wait to obtain an appointment						
Actual presence of health care staff						
Level of availability of medicines						
... *(non-exhaustive list)*						

Treatment protocols				
Pathology or treatment	**Current protocol**	**Problems identified**	**Improvements envisaged**	**Accompanying measures envisaged**

Method of payment		
Name of service covered	**Current method of fee setting**	**Method of payment envisaged**
...		

Third-party payment mechanism
Services concerned:
Checks to be performed before dispensing care:
Procedure to follow after dispensing care:
Preferred frequency for global payment (consolidated invoicing): ☐ bi-monthly ☐ monthly ☐ quarterly

4.7 Defining the scheme's organization

Sample table for defining internal bodies and actors

Decision-making function		
Who carries out the decision-making function? (name of internal body or bodies)	1.	
	2.	
	Body 1: Name _____	Body 2: Name _____ (if applicable)
Who can participate in the body?		
How are members appointed/elected?		
What are the powers/functions of the body?		
Actors contemplated (internal/external; volunteer, salaried or compensated)		

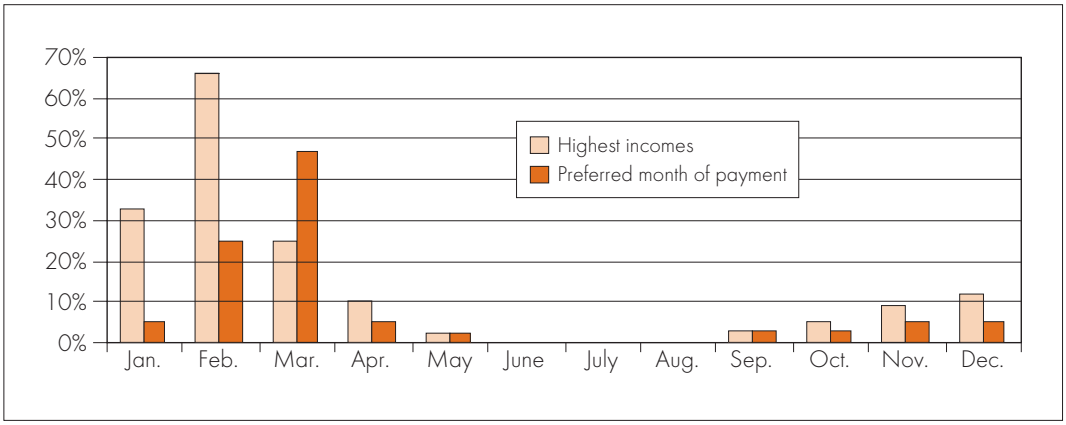
Executive function	
Who will perform the executive function? (name of body)	
Does this body have several subdivisions? Which ones?	
Who can participate in the body?	
How are members appointed/elected?	
What are the powers/functions of the body? Of each subdivision?	
Actors contemplated (internal/external; volunteer, salaried or compensated)	

Supervisory function	
Who will perform the supervisory function? (name of body)	
Who can participate in the body?	
How are members appointed/elected?	
What are the powers/functions of the body?	
Actors contemplated (internal/external; volunteer, salaried or compensated)	

4.8 Defining the scheme's methods of operation

Seasonal nature of income and willingness to pay

The same graph may be used to illustrate seasonal variations in income and willingness to pay. In the following example, income is seasonal and reaches a peak in February. Willingness to pay is highest in the following period (between late February and early March).



Devising a role table

The steering committee makes a list of the various activities associated with the operation and management of a health micro-insurance scheme in response to the question, "Who does what and how"? The role table is drawn up in the following manner:

1. A list is made of all the actors involved, ranging from members to providers and including the internal bodies of the scheme. (If these are not yet clearly identified, the role table will assist in defining them.) All these actors are then listed in the first row of the table.
2. All management activities are listed in chronological order (enrolment, payment of premiums, etc.). These are then placed in the left column of the table.
3. Each activity is broken down into one or more tasks.

   Example: The "Enrolment" activity includes the following actions: application for membership, acceptance or denial of application, payment of membership fees and annual premium, recording in membership register.

4. The person responsible for each action is determined by answering the question, "Who does what"?

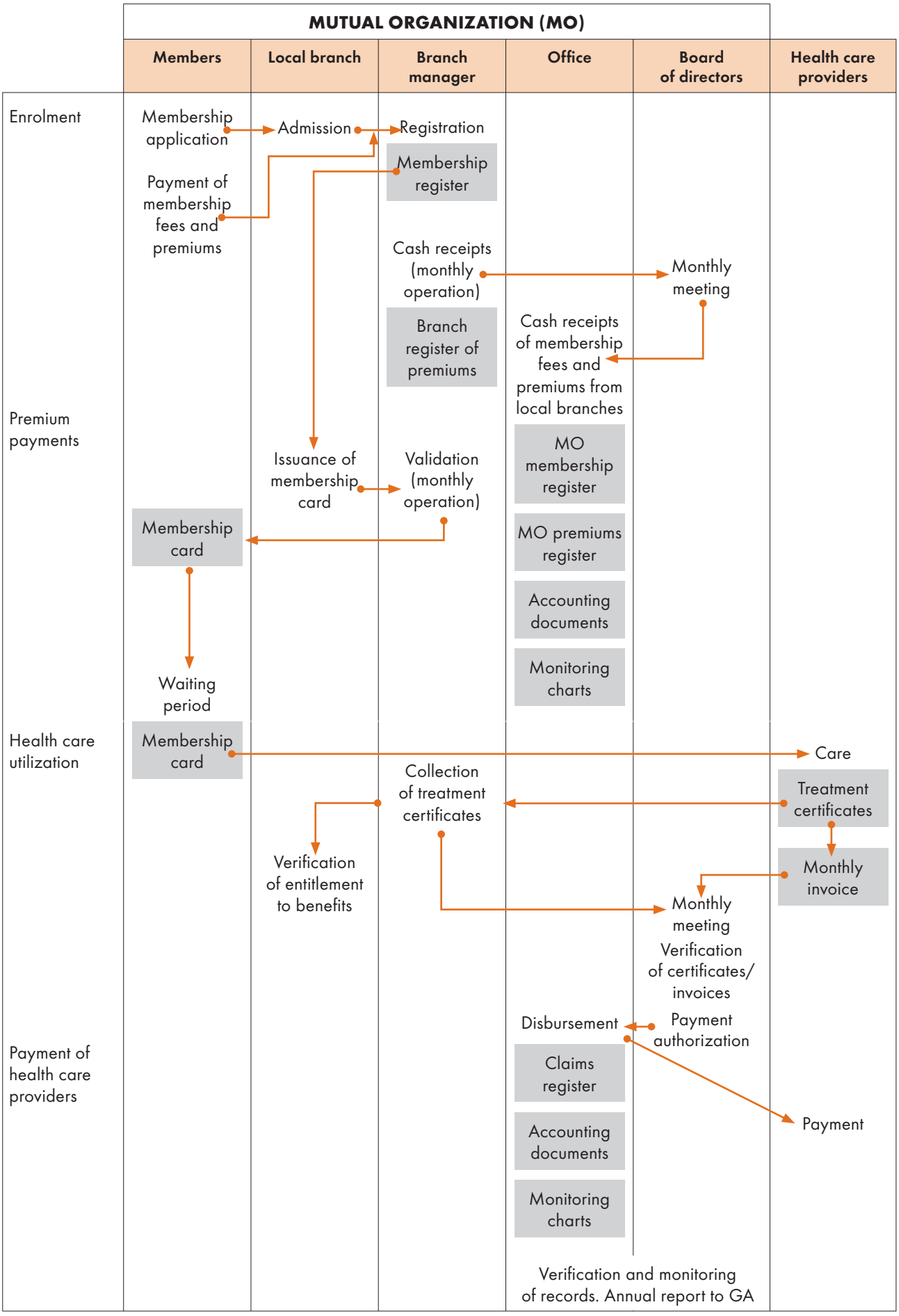
   Example: The reply to the question "Who is applying for membership?" is "the member". The reply to the question, "Who is accepting the application?" is "the local branch".

5. Each action is placed in the column corresponding to the actor identified.

   Example: The action "Membership application" is placed in the column corresponding to the member.

6. When an action is attributed to an actor, the management tools (documents, registers, data-processing tools, etc.) that will be used are identified.

   Example: Membership register of the branch/mutual organization, monitoring charts.


MUTUAL ORGANIZATION (MO)
Members
Local branch
Branch manager
Office
Board of directors
Health care providers
Enrolment
Membership application
Admission
Registration
Membership register
Payment of membership fees and premiums
Cash receipts (monthly operation)
Monthly meeting
Branch register of premiums
Cash receipts of membership fees and premiums from local branches
Premium payments
MO membership register
Issuance of membership card
Validation (monthly operation)
Membership card
MO premiums register
Accounting documents
Monitoring charts
Waiting period
Health care utilization
Membership card
Care
Collection of treatment certificates
Treatment certificates
Verification of entitlement to benefits
Monthly invoice
Monthly meeting
Verification of certificates/ invoices
Payment of health care providers
Disbursement
Payment authorization
Claims register
Payment
Accounting documents
Monitoring charts
Verification and monitoring of records. Annual report to GA

4.9 Preparing the scheme's budget estimate

Preparing the budget estimate is a painstaking operation that requires an accurate estimate of income and expenses. This estimate is based on a certain number of assumptions (the number of members and dependents, the level of medical consumption, etc.). As a precaution, it is advisable to include an item for "contingency reserve" that may be used to compensate for higher-than-expected expenses or lower-than-expected income.

Compilation and evaluation of income

Income is derived primarily from:

- premiums: these may be fixed amounts or linked to members' income; family premiums or individual premiums, which are dependent or not dependent upon insured persons' characteristics;
- membership fees;
- donations and grants: gifts or subsidies from the State or from external actors, such as cooperation programmes, NGOs, etc., extended freely to the health micro-insurance scheme. Donations and grants may be in cash or in kind;
- income from fee-based activities: the emergency transport service or the health information sessions may also be of interest to non-members and, from that standpoint, constitute a separate source of income when they are fee-based;
- other income: interest income from financial investments; services billed to external users, such as meeting room or supply rentals; income generating activities, such as lotteries, cultural evenings, etc.

Premiums

This section discusses individual premiums, which are the most common type of premiums, according to which a family of five pays five times the individual premium.[7] The premium used in the following example is not related to the individual characteristics of the insured person (age, sex, health status, place of residence, occupation), nor is it linked to the insured person's income. It is paid on an annual basis.

The total amount of income from premiums is equal to:

Income from premiums = Average number of insured persons × Annual individual premium

The annual individual premium has already been calculated. It includes the premium corresponding to medical services and any additional amounts related to proposed services.

An estimate of the number of persons who will be covered by the end of the first accounting period may be made on the basis of a target population survey or the results of similar experiences in other regions.

Example: It is estimated that 1,000 persons will be covered by the end of the first accounting period.

[7] In the case of "family" premiums, all that is required is to estimate the number of members and to multiply the family premium by the average number of members.

When the health micro-insurance scheme has a **closed enrolment period**, all persons insured by the end of the first accounting period will have been "recruited" during this initial period, with no new enrolments accepted after its conclusion.

In this **example**, the average number of insured persons = the number of persons insured at the end of the first accounting period = 1,000. Consequently:

Income from premiums = 1000 × Annual individual premium

When the health micro-insurance scheme has an **open enrolment period**, the "recruitment" of insured persons is spread out over the course of the first accounting period with, perhaps, a peak at the start-up of the scheme or following specific promotional efforts.

In this case, the amount assigned to "income" is the amount of individual premiums, pro-rated on the basis of the number of months left in the year. Thus, for persons "recruited" in the first month, a complete year of premiums (12 months) is counted; for persons "recruited" in the second month, only 11 out of 12 months of premiums are counted, etc.

The number of insured persons used in the formula for calculating income from premiums is thus equal to the sum of the persons "recruited" each month, weighted proportionally for the respective lengths of coverage of these persons (portion of the year).

In this **example**, the number of persons insured at the end of the first accounting period = 1,000. It is assumed that the distribution of "recruitments" is as follows:

Month	1	2	3	4	5	6	7	8	9	10	11	12	**Total**
Number	500	200	50	10	10	5	200	5	5	5	5	5	**1000**

The average number of persons insured = (12/12 × 500) + (11/12 × 200) + (10/12 × 50) + (...) + (1/12 × 5) = 848.33. Hence:

Income from premiums = 848.33 × Annual individual premium

Estimates of the number of persons "recruited" each month are quite arbitrary. They may, however, be used as outcome objectives for the various promotional efforts carried out over the course of the accounting period.

Additional/optional premiums

These refer to additional premiums required for subscriptions to an optional service, such as emergency transport. The amount of income from additional premiums is equal to:

Income from optional premium =
Average number of persons subscribing to service
× Annual individual premium for the service

The average number of persons subscribing to a given service is calculated in the same way as the average number of persons insured (see above) using one of two methods of calculation, depending upon whether the enrolment period is open or closed.

Membership fees

Membership fees are paid at the time of registration of a new member and are not reimbursable. The total amount of income from membership fees is equal to:

Income from membership fees =
Number of members
× Individual membership fees

Membership fees are generally assessed on each member (one per family). The amount of such fees should not constitute a disincentive to enrolment. Regardless of whether the enrolment period is open or closed, the number of members used as an input in the formula is equal to the number of members enrolled by the end of the accounting period (since membership fees are paid on a one-time only basis and their amount remains the same, regardless of the time of enrolment).

Income from fee-based activities

Ancillary services – emergency transport, health education/prevention sessions may be of interest to members and non-members alike. Since such services are fee-based for non-members, they constitute an additional source of revenue.

Income from fee-based activities =
Number of non-member participants
× Unit fee for activities

Donations and grants

The health micro-insurance scheme may receive gifts or subsidies from the State (e.g. premium subsidies), cooperation programmes, NGOs, or from any other source, on a cost-free basis.

Compilation and evaluation of expenses

Expenses include:

- expenses related to covered health services;
- expenses associated with the organization of health education/prevention sessions;
- operating costs (payroll, travel expenses, rent payments, office supplies, etc.);
- training and facilitation costs (remuneration of external trainers or facilitators, travel expenses related to training, teaching materials, meeting room rentals, lodging for participants, etc.);
- other expenses (payment of membership fees to a federation, payment of a reinsurance premium).

Expenses related to covered health services (benefits)

For each covered health service and each individual, these expenses are equal to the sum of the pure premium and the safety loading.

Thus, the amount of total projected benefits is equal to:

Benefits =
Average number of persons covered
× [sum $_{\text{for covered services}}$ (Pure premium + Safety loading)]

The calculation of the average number of covered persons was described previously and is based on two methods, depending upon whether the enrolment period is open or closed. In determining this figure, waiting periods – during which beneficiaries are not entitled to receive benefits – must also be taken into account. The fact that certain members may not be up-to-date with their premium payments, thereby invalidating their entitlement to benefits, must also be taken into account. The number of covered persons must therefore consist of the number of persons effectively entitled to benefits for the period in question.

Costs associated with the organization of health education/prevention sessions

The organization of these sessions is relatively low in cost if the scheme works out a partnership agreement with a prevention programme financed by the State or by an external financing institution.

Operating costs

These are expenses related to the administration and management of the health micro-insurance scheme, such as staff salaries, travel expenses, office rental, office supplies, etc. All these expenses must be determined for the first accounting period.

In the case where a health micro-insurance scheme sets up a health facility, separate accounting systems should be used to record the operating costs and income of such facilities in order to differentiate the management of the two structures.

Training and facilitation costs

These are expenses associated with information, education and communication activities that are carried out beginning with the inception of the feasibility study and throughout the existence of the health micro-insurance scheme. They may also be included in the scheme's operating costs.

Establishing the budget estimate

Income

The basic premium has been determined to be 3,587.6 MUs (rounded figure) per person and per year (see 4.5.6 – Performing premium calculations (practical example), page 149, for details on how to calculate the premium). The population covered in the first year is estimated to be 1,000 persons. The enrolment period is closed; consequently, all covered persons pay a full year of premiums. Income from premiums is thus equal to **3,587,600 MUs**.

Costs associated with third-party payment for pharmacy services and those associated with health information sessions are added to the basic premium (+ 50 MUs per person and per year for each, which represents a total of **100,000 MUs** for the total covered population).

The average cost of coverage for emergency transport is estimated at 100 MUs per person and per year. According to a survey, only 250 insured persons would be interested in this service. The total optional premium for this service is **25,000 MUs**.

The number of members is estimated to be 160 for the first year, and membership fees are set at 500 MUs per member. Membership fees therefore total **80,000 MUs**.

Health information sessions will be fee-based for non-members and billed at 100 MUs per session. They will concern, a priori, 120 persons, for a total of **12,000 MUs**.

Additionally, the scheme will receive a donation from an NGO in the amount of **20,000 MUs**.

Expenses

The amount of the "Pure premium + Safety loading" equals 3,106.2 MUs (rounded figure) per person and per year. The total amount of health benefits is thus 3,106.2 × 1,000 = **3,106,200 MUs**. (For the sake of simplicity, it is assumed that there is no waiting period.)

Costs related to financing the emergency transport service are estimated at **25,000 MUs**.

Costs associated with the organization of health information sessions are fully covered by a prevention programme sponsored by a donor. They therefore do not represent any cost to the health micro-insurance scheme.

Operating costs (salaries, travel expenses, rent, office supplies) are estimated at **530,000 MUs**.

The table

Once income and expenses have been calculated, this information is indicated on a table listing expenses on the left and income on the right.

Expenses

	Annual amount per person	Number of persons	Total
Benefits			
Pure premium + Safety loading	3 106.2	1000	3 106 200
Transport	100	250	25 000
Operating costs			
Salaries			280 000
Travel expenses			100 000
Rent			100 000
Supplies			50 000
Total			**3 661 200**

Contingency reserve	**163 400**

Income

	Annual amount per person	Number of persons	Total
Premiums			
Basic premium	3 587.6	1 000	3 587 600
Third-party payment/ pharmacy	50	1 000	50 000
Health info/prevention	50	1 000	50 000
Transport	100	250	25 000
Membership fees	500	160	80 000
Fee-based activities			
Health information sessions	100	120	12 000
Donations			20 000
Total			**3 824 600**

According to the table, operating costs are higher than expected, representing 17 per cent of the sum "Pure premium + Safety loading", as opposed to the 10 per cent used in the premium calculation. At this point, it is possible to reintroduce into the premium calculation the adjusted value of the percentage of operating costs (17 per cent instead of 10 per cent), which will have the effect of slightly increasing premiums, as well as the amount of the contingency reserve.

5. Tools used to prepare for setting up the scheme

The tools used to prepare for setting up the scheme include:

Sample thematic and chronological outlines for the feasibility study report	**Tool 5.1** Provides outlines for drafting the report using two different approaches
A sample plan of actions	**Tool 5.2** Describes the various components of a plan of actions
A contract framework and a sample individual contract	**Tool 5.3** Describes the form and the content of a contract
An agreement framework and a sample agreement with health care providers	**Tool 5.4** Describes the form and the content of an agreement

5.1 Sample outlines of the feasibility study report

The outline of the feasibility study report may be organized thematically or follow the chronology of the feasibility study.

Sample outline using a thematic presentation

1. Introduction

- Presentation of organization promoting the scheme
- Description of origin of health micro-insurance project

2. Sequence of events of study

- Team charged with conducting the study
- Budget, discrepancies (if any) with respect to budget estimate
- Sequence of events: description of the phases and steps of the study, dates on which intermediate objectives were reached, definitive Gantt chart (which may differ from chart initially formulated)

3. Methodology used in study

- Data-collection procedure: strategic and implementation charts
- Data-collection materials (see Annex 1 for details concerning data-collection materials)
- Scheme design process: use of participatory method or not

4. Feasibility preconditions

- Brief description of initial situation and fulfilment of preconditions

5. Context

- Results of data collected for objective 1: "To understand the context": description of economic, demographic, social, health, and political contexts, etc.

6. Target population

- Results of data collected for objective 2: "To establish a basis for selecting the target population"
- Selection criteria used
- Target population selected: villages, neighbourhoods, cooperatives, etc.

7. Health services to be covered

- Results of data collected for objective 4: "To establish a basis for selecting the health services to be covered"
- Selection criteria used
- Health services selected

8. Partner health care providers and relations with health care supply

- Results of data collected for objective 3: "To establish a basis for selecting the partner health care providers" and objective 5: "To establish a basis for determining methods of coverage: direct payment or third-party payment"
- Selection criteria used
- Health care providers selected. Services and providers for which a third-party payment mechanism is envisaged

9. Benefit plans and corresponding premium amounts

- Results of data collected for objective 6: "To establish a basis for calculating premiums based on the health expenses of the target population" or objective 7: "To establish a basis for calculating premiums based on the operating costs of health facilities"; and objective 8: "To evaluate the target population's willingness to pay"
- Results of calculations for various scenarios contemplated
- Selection criteria used to select best benefit/premium combination
- Benefit/premium combination(s) selected, i.e. benefit plans that members may choose

10. Partnership agreements with health care supply and other partner organizations, and requests for public aid

- Results of data collected for objective 9: "To establish a basis for negotiating with health care providers, negotiating with transport operators, collaborating with prevention programmes, and obtaining information on public aid"
- Content of agreements
- See Annex 2 for texts of agreements

11. Scheme organization

- Methods of organization contemplated and selection criteria used
- Method of organization selected
- See Annex 2 for constituent documents: statutes, organizational chart

12. Operating rules

- Operating rules contemplated
- Operating rules selected
- See Annex 2 for procedures manual, internal rules or contract(s)

13. Budget and plan of actions

- Budget estimate
- Plan of actions

Annex 1: Data-collection materials developed during data-collection phase

- Data-entry forms, interview forms, survey questionnaires

Annex 2: Documents and tools produced during phase to prepare for setting up scheme

- Statutes, internal rules or contract(s), management procedures manual, agreements with health care supply, etc.

Sample outline using a chronological presentation

1. Introduction

- Presentation of organization promoting the scheme
- Description of origin of health micro-insurance project

2. Sequence of events of study

- Team charged with conducting the study
- Budget, discrepancies (if any) with respect to budget estimate
- Sequence of events: description of the phases and steps of the study, dates on which intermediate objectives were reached, definitive Gantt chart (which may differ from chart initially formulated)

3. Feasibility preconditions

- Brief description of initial situation and fulfilment of preconditions

4. Data collection

Data-collection procedure

- Strategy chart, defining objectives and listing information sought and sources utilized for each objective
- Implementation chart, listing information sought from each source and its purpose

Data-collection materials

- Data-entry forms, interview forms, survey questionnaires
- See Annex 1 for detailed discussion of data-collection materials

Organization of data collection

- Team charged with conducting data collection
- Sampling of surveyed population
- Testing of forms and questionnaires
- Number of interviews, household surveys
- Entering collected data using computerized tool

Establishing a basis for selections according to objective

- Data concerning context
- Data used in selecting target population
- Data used in selecting partner health care providers
- Data used in selecting health services to be covered
- Etc.

5. Scheme design

Procedure used: participatory or not

Methods and tools used

- Data-presentation and decision-making tools, calculation tools, etc.

Alternatives and selections made

- Target population
- Partner health care providers and relations with health care supply
- Benefit plans and corresponding premium amounts
- Partnership agreements with health care supply and other partner organizations
- Public aid
- Scheme organization
- Operating rules
- Budget and plan of actions

6. Preparing to set up scheme

- List of documents and tools produced
- See Annex 2 of report for a detailed discussion of documents and tools

Annex 1: Data-collection materials produced during data-collection phase

- Data-entry forms, interview forms, survey questionnaires

Annex 2: Documents and tools produced during phase to prepare for setting up scheme

- Statutes, internal rules or contract(s), management procedures manual, agreements with health care supply, etc.

5.2 Sample plan of actions

Sample plan of actions for the first accounting period (15/09/2005 – 14/09/2006)

1. Objectives

By the end of the first accounting period (14 September 2006), the scheme will have been set up in three urban districts and three rural districts.

Two information/communication campaigns are planned: the first, to be held in September 2005, will be aimed primarily at inhabitants of urban districts; the second, scheduled for February 2006, will be aimed primarily at inhabitants of rural districts.

The three urban districts comprise a total of 6,000 families, or 35,000 persons. The objective is to cover 8 per cent of the target population, or 2,800 persons (480 members) by the end of the first accounting period. The three rural districts comprise a total of 2,000 families, or 14,000 persons. The objective is to cover 5 per cent of the target population by the end of the first accounting period, or 700 persons (100 members). (The average size of a family in rural areas is 7 persons, as compared to 5.8 in urban areas.) The expected distribution of enrolments over the course of the first accounting period is as follows:

	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	
Number of beneficiaries (urban)	600	1200	500	200	100	80	
Number of beneficiaries (rural)	0	0	0	0	0	500	
Total	600	1200	500	200	100	580	
	Mar.	**Apr.**	**May**	**June**	**July**	**Aug.**	**Total Sep.-Aug.**
Number of beneficiaries (urban)	30	30	30	10	10	10	2800
Number of beneficiaries (rural)	150	30	20	0	0	0	700
Total	180	60	50	10	10	10	3500

2. Stages

- Official establishment of scheme: inaugural GA on 15 August.
- First communication campaign: start-up of communication operations: 1 September; "final rehearsal" for enrolment procedures: 12-13 September; official inaugural meeting: 14 September; start-up of enrolments: 15 September; "final rehearsal" for claims procedures: 7-8 December; start-up of claims settlement: 15 December.
- Second communication campaign: start-up of communication operations: 15 January; "final rehearsal" for enrolment procedures: 29-30 January; start-up of enrolments: 1 February; "final rehearsal" for claims procedures: 24-25 April; start-up of claims settlement: 1 May.

3. Contents of each stage

Communication activities shall include:

- in urban areas: three meetings with the neighbourhood associations (one per district), three meetings in collaboration with managers of health centres (one per centre), one mobile campaign during markets and specific events held at this time;
- in rural areas: two meetings with members of cooperatives, three meetings in collaboration with managers of health centres (one per centre), one mobile campaign during markets.

Mobile campaigns will then be repeated monthly, on average.

Rehearsals are scheduled prior to the start of enrolments and prior to the start of claims settlement, which means, after taking into account the waiting period, three months after the start of enrolments.

An inaugural meeting will be organized prior to the first communication campaign. The following persons will be present: the provincial administrator, the mayor, the director of the provincial hospital, the managers of the health centres of the three urban and rural districts, etc.

Enrolments will take place at the branches responsible for promoting the scheme. In urban areas, five branches will be opened: one at the headquarters of the health micro-insurance scheme, one on hospital premises and three on the premises of the three health centres located in the city. In rural areas, three branches will be opened on the premises of the health centres (one per centre). Coverage through third-party payment will be provided at health facilities with which agreements have been signed: at the hospital (for emergency hospitalization and maternity) and the six health centres (three urban, three rural).

4. Resources, materials and related costs

Communication activities

- Resources: six facilitators.
- Materials: brochures (6,000 copies), facilitation plan (six copies).
- Travel and miscellaneous expenses: 2,000 MUs.

Rehearsals

- Resources: steering committee members and actors concerned with future scheme: facilitators, managers, health care staff of health facilities.
- Materials: scenarios (15 copies).
- Miscellaneous expenses: 500 MUs.

Inaugural meeting

Along with steering committee members, actors concerned with the future scheme, local authorities, health authorities and leaders of civil society organizations, the inaugural meeting will also be open to the target population. The objective is to take this opportunity to carry out a wide-ranging information and communication campaign on the topic of the health micro-insurance scheme.

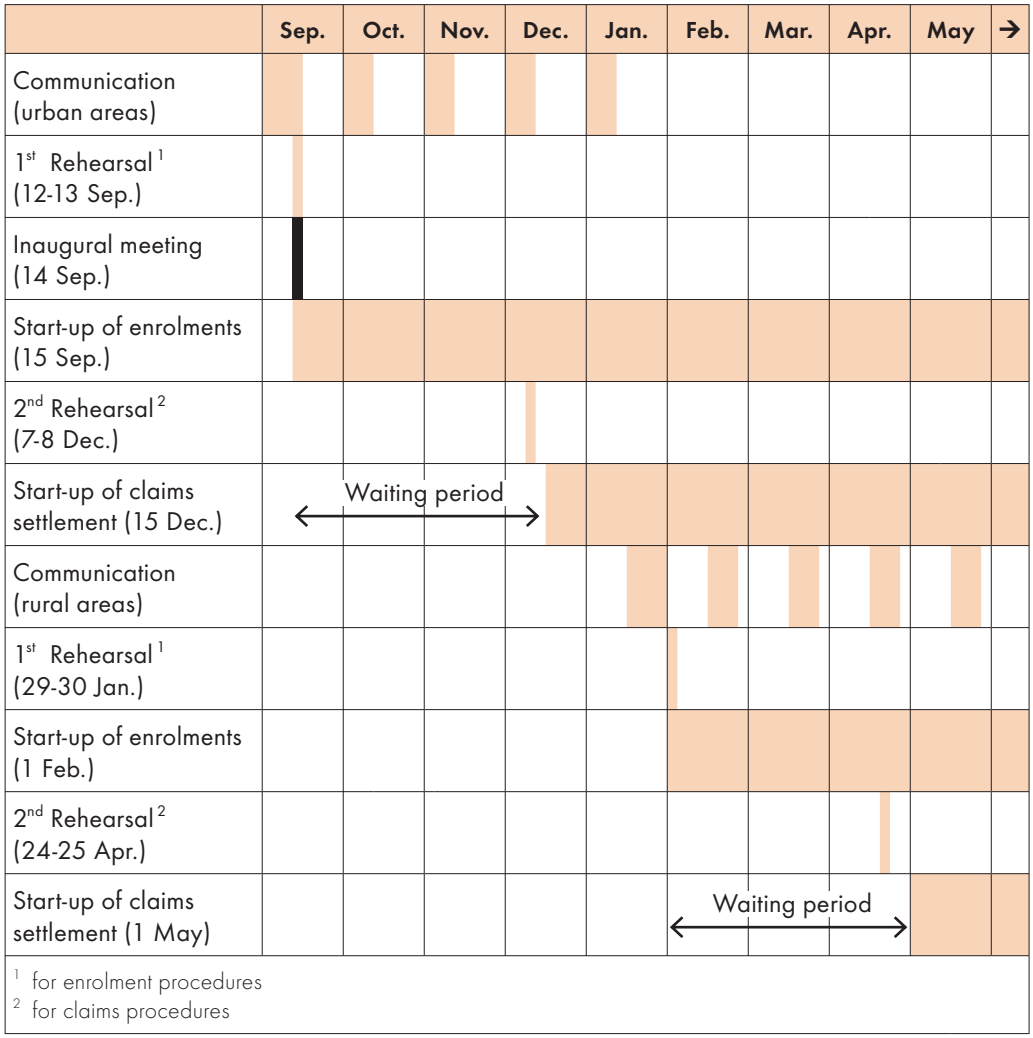
Enrolments

- Resources: 16 facilitators and two scheme managers to carry out computer registration
- Materials: Membership sheets (4,000 copies), explanatory brochures (4,000), "paper-based" registers (eight), computerized record tool (one), payment receipts for membership fees (4,000).
- Production costs for materials: 2,500 UM.

Claims settlement

- Resources: staff of health facilities with which agreements have been signed and two scheme managers.
- Materials: blank membership cards (4,000), treatment certificate forms (7,000), prior agreement request forms (1,000), model consolidated invoice forms (30).
- Production costs for materials: 2,000 MUs.

5. Timetable



[1] for enrolment procedures
[2] for claims procedures

5.3 Contract framework and sample health insurance contract

Sample contract framework

Section 1

The parties to the contract, i.e. the health micro-insurance scheme and the member, in the case of an individual contract, or the health micro-insurance scheme and the organization (cooperative, trade union, enterprise, etc.) underwriting the contract on behalf of its members, in the case of a group contract.

Legislative framework: act or code applicable to contract

Type of contract: individual or group

Section 2

Purpose of contract

Section 3 Exclusively for group contracts

Provisions concerning the contract concluded between the health micro-insurance scheme and the organization:

- entry into effect, duration and renewal of contract;
- possible changes;
- cancellation of contract;
- provisions in event of litigation.

Section 4 Provisions concerning insurance coverage

Qualifying conditions:

- definition of member;
- definition of dependent.

Enrolment and membership:

- enrolment procedure;
- entry into effect of membership;
- duration and renewal of membership;
- changes in membership: for each change, date on which request for change must be made, specific supporting materials used and date on which change enters into effect;
- withdrawal: date for submission of withdrawal request, specific supporting materials used, date on which withdrawal enters into effect;
- termination of a member: circumstances of termination, deadline for informing member concerned, date of entry into effect;
- termination of a dependent: circumstances of termination, deadline for informing the member and dependent of the termination, date of entry into effect.

Cessation of benefits and services.

Section 5 Provisions concerning benefits and ancillary services

Benefits:

- list of covered health services;
- list of actions or events whose medical consequences are not covered (e.g. epidemics, wars);

- waiting periods, if any;
- in cases in which scheme does not plan to use third-party payment for all health services: date entitlement to benefit expires, i.e. maximum period of time during which member must submit claims;
- methods of claims settlement: payment in cash, by check, by transfer to bank or postal account;
- possibility of choosing benefit plan, if applicable;
- benefit plan schedule, listing services and levels of coverage for each plan.

Ancillary services (e.g. prevention programme).

Section 6 Provisions concerning premiums

- Principle used to calculate premiums for a family, based on individual fees
- Fee schedule
- Rules for adjusting fees
- Methods of payment for premiums

Sample individual contract

SAMPLE INDIVIDUAL INSURANCE CONTRACT

"The Provident Society" insurance company (fictitious name)

Preamble

This contract, which shall be governed by _____ (*title of applicable act or code*), is entered into between "The Provident Society" (hereinafter referred to as the "insurance company"), or the party of the first part, whose registered office is located at _____ (*address*), and "the member", or the party of the second part.

This is an individual insurance contract.

Article 1 – Purpose

The purpose of this contract is to offer the **member** and persons in his/her family health insurance coverage, including benefits and services.

Article 2 – Qualifying conditions

Definition of ***member*** – Any person aged 18 or above, with domicile in district K and not benefiting from any other health insurance coverage (social security, private insurance or other type of insurance) may accede to this contract.

Definition of dependent – **Members** may designate one or more dependents from among the members of their family (spouse, partner, ascendant, descendant or collaterals). The number of dependents is not limited; however, all dependents must be registered by name on the membership sheet. They enjoy the same benefits and services as the **member**. In order to be registered, dependents must not be benefiting from any other health insurance coverage (social security, private or other type of insurance).

Article 3 – Enrolment and membership

Enrolment procedure – The **member** must fill out a membership request and submit it to the **insurance company**, which reserves the right to accept or refuse the request.

Validity of membership – Membership becomes valid on the first day of the month following the date of the request for membership, provided that the request was accepted.

Duration of membership and renewal – Membership is valid for a period of one year, following which it is automatically renewed on a regular annual basis.

Addition/termination of a dependent – **Members** may, at any time, make a written request to add a dependent. Such addition becomes effective the first day of the month following the request. The member may, at any time, make a written request to terminate a dependent. This termination does not become effective until the anniversary date of membership, except in the case of the dependent's death, in which case it becomes effective the first day of the month following the death. A dependent who has been terminated may not be reinstated until completion of a lapse of two years.

Changes to benefit plan – **Members** may request to make changes in their benefit plan no later than one month prior to the anniversary date of their enrolment. Such changes become effective on the above-mentioned anniversary date.

Subscription to/withdrawal from a service – **Members** may request to subscribe to a service or to withdraw from a service no later than one month prior to the anniversary date of their enrolment. Such subscriptions and withdrawals become effective on the above-mentioned anniversary date.

Other changes – **Members** may also request a change in the amount of the premium instalment payment, the method of payment of the premium or the method of payment of the claim. Such requests must be submitted no later than one month prior to the anniversary date of their enrolment. The changes become effective on the above-mentioned anniversary date.

Members may, at any time, request a change in the administrative information they receive. Such changes become effective on the date of reception of the request or at a later date chosen by the **member**.

Withdrawal – **Members** have the right to withdraw from the scheme. Requests for withdrawal must be received by the **insurance company** no later than one month prior to the anniversary date of the member's enrolment. Withdrawal becomes effective on the above-mentioned anniversary date.

Termination of membership – Membership may be terminated by the **insurance company** on the grounds of manifest fraud and abuse on the part of the **member**. The termination takes effect immediately and without advance notification.

A **member** who is in arrears in payment of premiums for 15 days receives formal notice to pay. If the situation is not corrected within the next 15 days, benefits and services are suspended and remain so pending payment. At the end of three consecutive months of suspension, membership is terminated. Persons whose membership is terminated are liable for any unwarranted benefits received during the period preceding the suspension (15 days in arrears in payment + 15 days of formal notice).

Persons whose membership has been terminated cannot again subscribe to an individual or group contract with the **insurance company**, nor be considered a dependent member under the terms of a contract until completion of a lapse of two years.

Termination of a dependent's entitlement to insurance – A dependent's entitlement to insurance may be terminated on the grounds of manifest fraud and abuse on his/her part. The termination takes effect immediately and without advance notification. A dependent whose entitlement to insurance has been terminated may not subscribe to an individual or group contract with the **insurance company**, nor be considered a dependent under the terms of a contract until completion of a lapse of two years.

Article 4 – Cessation of benefits and services

Benefits and services to **members** and their dependents are discontinued on the date on which membership ends, whether as a result of withdrawal, termination of membership or death. Benefits and services to dependents are also discontinued on the date of the termination of their entitlement to insurance as a dependent.

In the event of the death of the **member**, benefits and services to the member's dependents are discontinued as of the first day of the month following the member's death. The dependents, or their legal representative, if all dependents are minors, may, if they so desire, conclude an equivalent individual contract beginning on the date of the cessation of benefits.

Article 5 – Benefits

List of covered health services – Only certain health services dispensed by the health centres and district hospital of K are covered. They include the following health services:

- in health centres: consultations, pharmacy (only medicines included on the list of essential drugs*), uncomplicated deliveries, X-rays, laboratory tests;
- at the hospital: consultations, pharmacy (only medicines included on the list of essential drugs*), medical hospitalization, uncomplicated deliveries, dystocic deliveries, X-rays, laboratory tests, unplanned surgery. Planned surgical operations may, in certain cases, be covered. The agreement to provide coverage must be requested before such care is delivered (prior agreement forms).

* The list of essential drugs is available from the headquarters of the **insurance company**, from each health centre and from the pharmacy of the district hospital of K.

List of actions or events whose medical consequences are not covered – In the event of war or epidemic, the above-mentioned health services are not covered.

Waiting period – Coverage may be provided only for health expenses incurred at least three months following the date of enrolment of a member, or at least three months following the date of affiliation of a dependent. This deadline shall be extended to nine months for uncomplicated deliveries and dystocic deliveries and to 12 months for planned surgical operations.

Expiration of any entitlement to benefit – Claims must be made no later than six months after the date of the medical expenses; expenses cannot be reimbursed beyond this period.

Procedure for claims settlement – Claims are paid out in cash at each branch of the **insurance company** or at the central offices of the fund. Payment may also be made by check or by transfer to the **member's** bank or postal account. The method of payment of claims is selected at the time of enrolment. Payments are made on the first day of the month following the reception of the claim.

Levels of coverage – Levels of coverage for adults and children are identical. **Members** may choose the "Health centre" benefit, the "Hospital" benefit, or both simultaneously. The benefit or benefits chosen apply to the **member** and to his/her dependents.

"Health centre" benefit	
Covered services	**Level of coverage**
Consultations	100% of expenses incurred
Pharmacy	100% of expenses incurred
Uncomplicated deliveries	100% of expenses incurred
X-rays	80% of expenses incurred
Laboratory tests	80% of expenses incurred

"Hospital" benefit	
Covered services	**Level of coverage**
Consultations	100% of expenses incurred
Pharmacy	100% of expenses incurred
Medical hospitalization	100% of expenses incurred
Uncomplicated deliveries	100% of expenses incurred
Dystocic deliveries	100% of expenses incurred
X-rays	80% of expenses incurred
Laboratory tests	80% of expenses incurred
Unplanned surgery	100% of expenses incurred
Planned surgery *	100% of expenses incurred

*Subject to prior agreement

Article 6 – Ancillary and optional services

The following services are offered on an optional basis in exchange for the payment of an additional premium.

Third-party payment for pharmacy services – Refers to the exemption from payment of covered health costs in pharmacies that have signed an agreement with the **insurance company** for medicines and medical consumables prescribed by the medical staff of approved health centres and the district hospital of K. The list of approved pharmacies and health centres is available from the **insurance company**.

Third-party payment for hospital services – Refers to the exemption from payment of health costs at the district hospital of K. for the following services: medical hospitalization, uncomplicated deliveries, dystocic deliveries, unplanned surgery.

Emergency transport – Refers to coverage of the cost of a taxi journey for emergency transport to the district hospital of K. for a sick person incapable of walking or a pregnant woman in labour. Expenses incurred for the taxi journey are fully covered up to a limit of 4,500 MUs per patient evacuation.

In addition, members and their dependents may participate on a cost-free basis in prevention or health information programmes. The list of prevention activities and health information sessions is available from the headquarters of the **insurance company**.

Article 7 – Premiums

Formula for calculating family premium – The family premium is the sum of the individual premiums for the covered members of the family.

Premium schedule

	"Health centre" benefit		"Hospital" benefit	
	Annual adult premium (MUs)	Annual child premium (MUs)	Annual adult premium (MUs)	Annual child premium (MUs)
Rural districts	2000	1500	1500	1000
Urban districts	2400	1800	1800	1200

	Annual premium per person (MUs)
Third-party payment for pharmacy services	200
Third-party payment for hospital services	50
Emergency transport	100
Health information/ prevention programmes	Cost-free

Rules for updating premium levels – Premium levels are indexed according to the official rate of inflation. They are adjusted each year at the end of the accounting period for the following period. The new premium levels apply to all members and their dependents.

Procedure for payment of premiums – At the discretion of the **member**, premiums may be remitted weekly, monthly or bi-annually. Premiums may be paid by automatic deduction, by check or in cash. The instalments and method of payment are chosen at the time of enrolment.

5.4 Agreement framework and sample agreement with a health care provider

The content of an agreement may vary from one health micro-insurance scheme and one health care provider to the next. The elements to be included depend on the decisions made when designing the scheme: establishment of a third-party payment mechanism, quality standards or treatment protocols to be observed, choice of particular methods of payment, negotiation of preferential fees, etc. The content of an agreement also depends on the parameters of the context in question: regulations, establishment of health coverage plan system, possibility of developing a network among health care facilities at different levels of the health pyramid, possibility of introducing financial incentives for members of the health care staff, etc.

Sample agreement framework

Regardless of its textual content, an agreement is essentially a contract that can be formulated according to the following framework:

Section 1: Parties to the agreement

Section 2: Purpose of the agreement and objective of the health facility network, if such a network is contemplated

Section 3: Entry into effect, duration and renewal

Section 4: Amendments

Section 5: Termination

Section 6: Disputes and methods of arbitration

Section 7: Obligations of the two parties

Sample agreement

The following sample provides a very precise description of the obligations of the two parties, in the particular context of the formation of a network of health care providers. Agreements, such as the one presented here, are concluded with each health facility belonging to the network. Provisions concerning the provider network (Article 1) and progress groups may be omitted if the health micro-insurance scheme does not contemplate forming such a network.

The idea of forming a network of the health care providers with which agreements have been concluded is, however, an interesting one: it motivates providers to become informed and to seek training, and it provides their establishment with a guarantee of quality. It serves to increase the effectiveness of health care and to contain costs as a result of better coordination and better circulation of information among the providers in the network, particularly as concerns patient medical records.

The relatively explicit nature of the wording may appear to be cumbersome, but it is necessary if one wishes to produce an agreement that may be considered a proper legal instrument.

SAMPLE AGREEMENT
between "The Provident Society" insurance company
and the health facility _____ (name of health facility)

Agreement No. _____

Preamble

The text of this agreement was approved on 2 October 2004 by the General Assembly of **"The Provident Society" insurance company**.

This agreement is concluded between the **"The Provident Society" insurance company**, hereinafter referred to as the "insurance company", or the party of the first part, whose registered office is located at _____, and _____, hereinafter referred to as the "health facility", or the party of the second part, whose registered office is located at _____ .

Article 1 – The purpose of the agreement

This agreement defines the mutual obligations of the **insurance company** and the **health facility** with respect to the network of approved health facilities established by the **insurance company**.

The objective of this network is to:

- facilitate access to health care for members of the **insurance company** and their families by setting up a third-party payment mechanism for certain services in network health facilities, and by improving the circulation of information within the network concerning the type of treatment suited to each pathology;
- improve the quality of health care through the application of quality standards stipulated under the agreements and through the good practices defined by the progress groups (see definition below);
- improve the level of health education of the members of the **insurance company** and their families through prevention and health information programmes;
- improve the cost recovery of the network health facilities through the provision of coverage by the **insurance company** for medical expenses associated with the consumption of certain health services;
- facilitate the further training of health professionals in the network, and increase their knowledge base as a result of the establishment and development of progress groups;
- increase the effectiveness of health care, and limit costs as a result of better coordination and better circulation of information among the network health facilities, particularly concerning patient medical records.

Article 2 – Entry into effect, duration and renewal

This agreement shall remain in effect from 1 January 2005 to 31 December 2005. It shall then be revised and renewed on an annual basis. Such revisions may, in particular, concern quality standards, the degree of compliance with each standard, the degree of compliance with treatment protocols, and the level of participation in progress groups and in health information and prevention sessions (see definitions below). They may also concern the dates and frequency of evaluations.

Article 3 – Amendments

Each year, by 31 November at the latest, either party may propose to the other, in writing, that amendments be made to the agreement.

To the extent that such amendments concern the objectives of the **health facility** (quality standards, treatment protocols, participation in progress groups, facilitation of health information and prevention sessions) or the methods of payment, the consent of the two parties shall suffice. The new agreement shall enter into effect for the **health facility** as of the following 1st of January.

To the extent that the amendments concern provisions of the agreement affecting other health facilities in the network (such as fees that are identical in all approved health facilities), they must be approved by all network health facility managers and the **insurance company's** board of directors. If approved, these amendments shall be incorporated into the text of a new agreement, which must be ratified by the general assembly of the **insurance company**. The new agreement shall enter into effect for all health facilities in the network as of the following 1st of January.

Article 4 – Termination

Each party has the right to terminate the agreement in writing. The letter of termination must be received by the other party prior to 31 October of the current year. The termination enters into effect as of the following 1st of January.

Article 5 – Disputes

In the event of a dispute, the parties shall submit to the arbitration of a third party, or in the event of the failure of such arbitration, to the judgment of the Court _____ *(name of court)*.

Article 6 – Obligations of the two parties

1. Obligations of the health facility

The **health facility** agrees to:

- observe verification procedures (see Article 7);
- observe procedures concerning requests for prior agreement (idem);
- depending on the case, issue a treatment certificate or individual invoice (idem);
- observe quality standards (idem);
- observe treatment protocols (idem);
- participate in progress groups and apply good practices defined by these groups (idem);
- organize and carry out prevention and health information efforts aimed at scheme members and their families (idem);
- authorize the **insurance company** to undertake periodic evaluations of the extent to which these obligations have been observed (idem).

2. Obligations of the insurance company

The **insurance company** agrees to:

- observe the procedures for paying the **health facility** (see Article 7);
- utilize the contractual fees for calculating the amounts of payments (idem);
- transmit documents enabling the **health facility** to follow verification procedures in the case of third-party payment (printout of members and dependents who are up-to-date with their premium payments and who have completed their waiting period);
- transmit blank forms for prior agreement requests, treatment certificates, and individual and consolidated invoices;
- promote the **health facility** among members and their families (idem);
- organize progress groups in which **health facility** staff members will participate (idem);
- organize prevention and health information efforts aimed at scheme members, and compensate **health facility** staff members who prepare and facilitate such sessions (idem).

Article 7 – Details of obligations

1. Verification procedures

If the health services utilized by a patient are provided through a third-party payment mechanism, the **health facility** staff must previously have verified that the patient is entitled to coverage: patient's name appears on the membership card, entitlement to third-party payment services, entitlement to coverage (patient's name appears on the printout of covered persons that is updated each month and transmitted by the **insurance company**). When in doubt, the health facility staff must contact the **insurance company**. In non-urgent cases, it may request that the patient submit a letter of guarantee signed by the **insurance company**.

In the case of a third-party payment mechanism, the health facility staff must, after having dispensed services, require that the patient sign a treatment certificate (form provided by the **insurance company**) and give the patient a duplicate of the certificate, which the patient must, in turn, submit to the **insurance company**. This certificate is proof that the health services were effectively dispensed.

In the absence of a third-party payment mechanism, the staff of the health facility must produce a detailed invoice of the services dispensed (invoice forms supplied by the **insurance company**) and give it to the patient, so that the patient can, in turn, obtain reimbursement from the **insurance company**.

2. Procedures for request of prior agreement

In certain cases, the services included under planned surgical operations may be covered by the **insurance company**. The staff of the **health facility** must – before such services are dispensed – fill out a form requesting prior agreement (form supplied by the **insurance company**) and give it to the patient, who then brings it back signed by the **insurance company**, provided the latter has approved the request.

3. Quality standards

As of 1 January 2006, the average waiting time before delivery of the first medical treatment or service to members or dependents of the **insurance company** shall be reduced from 3.5 hours (current level) to 2 hours.

As of 1 January 2006, the percentage of days without stock shortages of 5 essential drugs (list drugs: _____) shall be increased from 65 per cent (current percentage) to 90 per cent.

As of 1 January 2006, the following procedures shall be applied systematically in order to ensure the confidentiality of medical records:

- non-medical staff is not authorized to ask questions of a medical nature;
- all questions of a medical nature shall be asked in private, i.e. behind closed doors, out of the sight and hearing of others, in the absence of persons who are not part of the medical staff (other patients, visitors, administrative staff of the **health facility** and others);
- Female patients may – if they so desire – be examined/treated by female medical staff;
- if the patient is accompanied by a relative or a friend, the medical staff shall request the patient's consent prior to authorizing the accompanying person or persons to enter the consultation or examination room;
- the medical staff shall keep a medical record for each patient and file these records in a locked location. The patient's file shall be taken out at the time of consultation or treatment and returned when these are finished.

4. Treatment protocols

As of 1 January 2006, the percentage of prescriptions for generic drugs issued to the members of the **insurance company** or their dependents shall increase from 35 per cent of the total number of prescriptions (current level) to 70 per cent. This increase will be facilitated by the organization of information sessions on generic drugs for the members of the **insurance company** and their families.

5. Progress groups

These groups shall be composed of health care workers from several health facilities and, in some cases, external partners (directors of foreign clinics, public health physicians, administrators of health care networks). They shall meet each month to: reflect upon topics concerning specific issues related to medical practice, envisage common measures to combat certain illnesses or better treat sick persons, lead prevention and health information sessions and prepare information materials directed to members of the **insurance company** and their dependents.

As of 1 March 2005, the **insurance company** shall have set up four progress groups in various locations throughout the province. As of 1 January 2006, 50 per cent of the doctors and nurses of the **health facility** shall be members of a progress group and shall have participated in at least six of the nine meetings held by the group during the first year.

6. Prevention and health information actions

These are prevention and health information sessions on specific topics: prevention of sexually transmitted diseases and HIV/AIDS, prevention of occupational accidents, prevention of the damaging effects of tobacco, basic measures to be taken in the event of a malaria crisis, generic drugs, etc.

As of 1 January 2006, the **insurance company** shall have organized three prevention or health information sessions at the **health facility** on the topics that were given the highest scores by the health facility's users. Such sessions shall be organized in collaboration with a partner prevention programme. The staff members of the health facility are invited to participate actively in promoting these sessions among their patients (whether the latter are members of the **insurance company** or not) and, if the staff members so desire, in preparing the content of these sessions and leading them.

7. Periodic evaluations

An initial evaluation shall be undertaken in May 2005. It shall enable evaluators to determine whether the verification procedures and requests for prior agreement have been properly applied and whether the levels of the quality indicators are increasing.

A second evaluation shall be undertaken in early January 2006. It shall enable evaluators to determine whether quality objectives have been reached: average length of waiting time, availability of medicines, confidentiality of medical records, treatment protocols, participation in progress groups, and participation in the promotion, organization and facilitation of prevention and health information sessions.

8. Procedures for payment of health facility

On the first day of each month, the **health facility** shall send the **insurance company** a consolidated invoice (model invoice supplied by the **insurance company**). The **insurance company** shall perform the necessary checks and pay the **health facility** on the basis of this invoice prior to the first day of the following month. Payment is made by bank

transfer to the **health facility's** account. The price of the health services is determined on the basis of the contractual fees (see below). The contractual fees are higher than the official fees because they take into account the increase in the level of quality of the health services and the increased availability of the **health facility** staff.

9. Contractual fees

		Contractual fee	Official fee (indicative)
Health centre	Consultations	600	500
	Pharmacy	1.2 × Official fee	Official fee
	Uncomplicated deliveries	1200	1000
	X-rays	840	700
	Laboratory tests	1.2 × Official fee	Official fee
Hospital	Consultations	840	700
	Pharmacy	1.2 × Official fee	Official fee
	Medical hospitalization	1.2 × Official fee	Official fee
	Uncomplicated deliveries	1800	1500
	Dystocic deliveries	3600	3000
	X-rays	1080	900
	Laboratory tests	1.2 × Official fee	Official fee
	Planned surgical operations *	Official fee	Official fee
	Unplanned surgical operations	1.2 × Official fee	Official fee

* Subject to the prior agreement of the insurance company

10. Promotion of the health facility

The **insurance company** agrees to provide a list of the network health facilities to the members and their dependents. This list is part of the welcome package for new members, which is given to each new enrolee. The list is also posted at the premises of the **insurance company** and at each local branch.