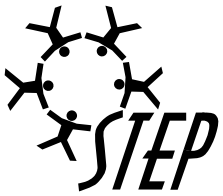
Health Microinsurance Schemes:
Monitoring and Evaluation Guide

Volume 2: Practical indications



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The programme's activities are carried out within the Social Security Department of the International Labour Office and the Global Campaign on Social Security and Coverage for All.

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List of abbreviations

ACOPAM	Cooperative and Organizational Support to Grassroots Initiatives
ANMC	Alliance Nationale des Mutualités Chrétiennes
BoD	Board of Directors
BRAC	Bangladesh Rural Advancement Committee
CBO	Community-Based Organization
CIDR	Centre International de Développement et de Recherche
DHC	District Health Centre
GA	General Assembly
GEFONT	General Federation of Nepalese Trade Unions
HMIS	Health Microinsurance Scheme
IBNR	Incurred But Not Reported
ILO	International Labour Organization, International Labour Office
INN	International Non-Proprietary Name
I/S	Income Statement
MIS	Management Information System
MUs	Monetary Units
NGO	Non-Governmental Organization
NHIP	National Health Insurance Program
NRs	Nepali Rupees
PAHO	Pan American Health Organization
PREM	People's Rural Education Movement
RBNP	Reported But Not Paid
RO	Responsible Organization
Rs	Rupees
SDC	Swiss Agency for Development and Cooperation
SEWA	Self-Employed Women's Association
STEP	Strategies and Tools against social Exclusion and Poverty
TPA	Third-Party Administrator
UPR	Unearned Premium Reserve
VDRC	Vijay Development Resource Centre
WHO	World Health Organization
WSM	World Solidarity

Part I. Completing the tables

Table 1. Simplified income statement (I/S)

Reference	Volume 1 – Part I, section 5.1
Sources of information	The information needed to produce the I/S is taken from the accounting documents.
Method of completion	It is assumed that managers, evaluators and support agencies know how to prepare an I/S. The I/S is presented here only because it is used to construct indicators.
Example	The imaginary example used in this case is an Asian rural HMIS supported by a project. It will be used in other examples illustrating how to calculate indicators. The VIMO HMIS started up operations on 1 January 2001. On 31 December 2006, it closed its third annual accounting period. The accounts for the 2006 accounting period, in rupees (Rs), were balanced as at 31 December 2006. The I/S was prepared by managers on the basis of all income and expenses recorded by the HMIS. ***Income*** ● As at 31 December 2006, 1,300 members had paid their premiums. ● Unearned premium reserve: Rs 100,000. Some members paid their annual premiums in July and in November 2006 in order to cover medical expenses in 2007 (see section on recording premiums). ● Funds deposited at the bank produced interest in the amount of Rs 5,000. ***Expenses*** ● Health benefits provided in 2006 by the VIMO HMIS totalled Rs 900,000. Of these, Rs 850,000 were entered in the accounts and 50,000 corresponded to health services provided to beneficiaries but not yet invoiced by the health care provider. ● The VIMO HMIS is managed by a management committee, whose members meet once a month. The treasurer and the secretary-general received allowances totalling Rs 50,000 for the year. ● Travel and subsistence expenses for committee members are paid by the VIMO HMIS. A total of Rs 50,000 was spent for this purpose during the year. ● The VIMO HMIS purchased office supplies totalling Rs 65,000. ● The VIMO HMIS organized a festival to promote its activities among the population. It allocated Rs 50,000 to this event. It also carried out information campaigns in new villages, the cost of which totalled Rs 150,000. The total for promotional expenses was Rs 200,000. In addition, the VIMO HMIS received an operating subsidy of Rs 150,000.

2006 Income Statement		
INCOME		
Premiums	1 300 000	A
Change in Unearned Premium Reserve (UPR)	100 000	B
Subtotal earned premium	**1 200 000**	**C = A − B**
Permanent subsidies and/or grants	0	D
Investment income	5 000	E
Other income • Membership fees • Ancillary services & other	0 0 0	F f1 f2
Total INCOME	**1 205 000**	**R = C + D + E + F**
EXPENSES		
Claims expenses		
Claims paid	850 000	g1
Change in Incurred But Not Reported claims	0	g2
Change in Reported But Not Paid claims	50 000	g3
Reinsurance expenses	0	g4
Subtotal incurred claims	**900 000**	**G = g1 + g2 + g3 + g4**
Operating expenses		
Administrative expenses		
Fixed expenses • Salaries and benefits • Rental and contractual charges • Depreciation	 50 000 0 0	 h1 h2 h3
Variable expenses • Travel • Office supplies • Miscellaneous	 50 000 65 000 0	 h4 h5 h6
Subtotal administrative expenses	165 000	H = h1 + h2 + h3 + h4 + h5 + h6
Distribution and communication expenses • Promotion • Distribution	 200 000 0	 i1 i2
Subtotal distribution and communication expenses	200 000	I = i1 + i2
Subtotal operating expenses	**365 000**	**J = H + I**
Other expenses		
Ancillary health services expenses	0	k1
Miscellaneous	0	k2
Subtotal other expenses	0	K = k1 + k2
Total EXPENSES	**1 265 000**	**X = G + H + I + K**
NET INCOME (OR LOSS) BEFORE SUBSIDIES AND GRANTS	**-60 000**	**Y = R − X**
Subsidies or grants received	150 000	S
NET INCOME (OR LOSS) AFTER SUBSIDIES AND GRANTS	**90 000**	**Z = Y + S**

Table 2. Simplified balance sheet

Reference	Volume 1 – Part I, section 5.2
Sources of information	The information needed to produce the balance sheet is taken from the accounting documents.
Method of completion	It is assumed that managers, evaluators and support agencies know how to prepare a balance sheet. The balance sheet is presented here only because it is used to construct indicators.
Example	The example used in this case is the same one that was used for the I/S. The VIMO HMIS started up operations on 1 January 2004. On 31 December 2006, it closed its third annual accounting period. The accounts for the 2006 accounting period, in rupees (Rs), were balanced as at 31 December 2006. The balance sheet, i.e. the capital position of the HMIS, was prepared by managers as at 31 December 2006.

Assets

- The scheme had Rs 390,000 in its current account and Rs 100,000 in cash.
- Members' premium payments in arrears amounted to Rs 50,000. These are debts owed to the HMIS and are accrued on the balance sheet.
- Rs 250,000 were invested in an interest-bearing bank account in order to earn a return on the scheme's funds.

Liabilities

- Health care services provided to beneficiaries but not yet invoiced to the HMIS totalled Rs 50,000.
- Premiums received in advance (unearned premium reserve) totalled Rs 100,000. Some members paid their annual premiums in July and in November 2006 in order to cover medical expenses in 2007 (see next section).
- Invoices received but not yet paid for, corresponding to health services provided to members in December, totalled Rs 100,000. These must be paid by the HMIS before 31 January 2007. They represent short-term liabilities to health care providers.
- Grant funds received by the HMIS as start-up capital when the scheme was established totalled Rs 150,000. (These should not be confused with grants received in 2006 to finance operations.)
- Reserves accumulated from the net income of the previous two years totalled Rs 300,000.
- Net income for the accounting period totalled Rs 90,000.

The balance sheet is drawn up in the following manner:

Balance sheet, as at 31 Dec. 2006		
Account		**Reference number**
ASSETS		
Cash and due from banks	490000	1
Accruals and prepayments	50000	2
Short-term investments in market instruments	0	3
Long-term investments	250000	4
Fixed assets	0	5
Intangible fixed assets	0	6
Total ASSETS	**790000**	**7**
LIABILITIES		
Claims and other actuarial liabilities		
Incurred But Not Reported Reserves (IBNR)	0	8
Reported But Not Paid Reserves (RBNP)	50000	9
Unearned Premium Reserve (UPR)	100000	10
Actuarial liabilities	0	11
Short-term liabilities	100000	12
Long-term liabilities	0	13
Total	**250000**	**14**
Equity		15
Paid-in equity from shareholders	0	16
Grant funds	150000	17
Retained earnings	390000	18
Total LIABILITIES	**790000**	**19**

Recording premiums and claims on the income statement and balance sheet

1. Recording premiums

It may be helpful to recall the following definitions regarding premiums:

- **Premiums due** within an accounting period, or premiums billed, refer to premiums that the HMIS should, in theory, receive under all contracts in force.
- **Premiums received** refers to premiums that the HMIS has actually received under all contracts in force.
- **Earned premium** (for a given period) refers to the portion of premiums due that is allocated to cover benefits for the period that falls within the relevant accounting period.

It is necessary to distinguish between premiums due, premiums received and earned premium in order to determine the amount of resources available to the HMIS to cover benefits in a given period (and those it must set aside because they correspond to the following period).

The accounting documents (journal, general ledger) are used to record:

- *In the premium account* (management account), all premiums due under contracts in force;
- *In the premium accrual account* (balance sheet account, as a debit), the equivalent of premiums due. When premiums are received by the HMIS, the amount is credited to this account.

At the end of the accounting period, when preparing the I/S and the balance sheet, two cases must be considered.

First case: The period for which premiums are due is different from the accounting period

From 1 January 2006 to 31 December 2006 (2006 accounting period), the VIMO HMIS had 1,300 members, each of whom was required to pay a premium of Rs 1,000. This premium covered a one-year period. Of these:

- Annual premiums were due for 1,120 members on 1 January. The amount of premiums due cover the same period as the accounting period and are equal to the amount of earned premiums for the accounting period, i.e. 1,120 × 1,000 = Rs 1,120,000 (segment [a] in the chart below).
- Annual premiums were due for 150 members on 1 July. The premiums due (Rs 150,000) cover the period 1 July 2006 to 30 June 2007. The amount of premiums earned for the 2006 accounting period correspond to the share of premiums covering the period 1 July to 31 December 2006 (6 months), i.e. 150,000 × 6/12 = Rs 75,000 (segment [b1] in the chart below). The remainder (Rs 150,000 − Rs 75,000) is treated as unearned premium.
- Annual premiums were due for 30 members on 1 November. The premiums due (Rs 30,000) cover the period from 1 November 2006 to 31 October 2007. The amount of earned premiums for the 2006 accounting period correspond to the share of premiums covering the period 1 November to 31 December 2006 (2 months), i.e. 30,000 × 2/12 = Rs 5,000 (segment [c1] in the chart below). The remainder (Rs 30,000 − Rs 5,000) is treated as unearned premium.

	Year 2006	Year 2007
Income statement account	01/01 31/12	01/01 31/12
Period covered *Members a* *Members b* *Members c*	*a* 1,120/...../ *b1* 150/...../ *c1* 30/...../	*b2* /...../ *c2* /...../
Premiums due	a + b + c, or (1 120 + 150 + 30) × 1 000 = 1 300 000	= 0
Earned premium	a + *b1* + *c1*, or (1 120 + 75 + 5) × 1 000 = 1 200 000	
Unearned premium	*b2* + *c2* or (75 + 25) × 1000 = 100 000	

In the accounting documents, the total of premiums due, i.e. 1,120,000 + 150,000 + 30,000, or Rs 1,300,000 is recorded as a credit in the *Premiums* account. This is the amount of premiums the HMIS expects to receive from its beneficiaries.

When the I/S is prepared at the end of the accounting period, only income for the relevant accounting period is taken into account (and only that income). Thus, only earned premium corresponding to the current accounting period must be shown in the I/S, i.e. 1,120,000 + 75,000 + 5,000 = Rs 1,200,000.

In order to show only the amount corresponding to earned premium, accountants make a year-end adjustment by recording in:

- *The Premiums account* (as a debit) the amount of premiums due, or Rs 1,300,000, line (A) of the income statement. The *Change in unearned premium*, or Rs 100,000, is recorded in line (B). The *Earned premium* is the difference between the two, or Rs 1,200,000, and is recorded in line (C). It corresponds to the amount of premiums actually earned for the 2006 accounting period.
- *The Unearned premium reserve account in the liabilities portion of the balance sheet* (line 10) (as a credit), the amount of income received in advance, or Rs 100,000.

At the beginning of the following accounting period, a debit to the *Unearned premium reserve* account eliminates the unearned premium reserve, and a corresponding credit is recorded in the income account.

Second case: Some premiums due have not been paid by the end of the accounting period

Using the above example in which premiums due totalled Rs 1,300,000, the HMIS actually received Rs 1,250,000. The difference between premiums due and premiums received, or Rs 50,000, is a debt that the HMIS must recover from its members.

In the accounting documents, the *Accruals and prepayments* account (in the assets portion of the balance sheet) is the counterpart (double-entry system) of the *Premiums* account (management account). It was debited a total of Rs 1,300,000 for the accounting period. However, since only Rs 1,250,000 were received (credited to the account), the balance at the end of the accounting period was Rs 50,000.

This is the amount shown on the balance sheet under *Accruals and prepayments* as debts to be recovered by the HMIS from its members (line 2 of the balance sheet).

2. Recording claims

The accounting documents are used to record:

- Under *Claims paid* (management account), all claims covered by the HMIS;
- Under *Short-term liabilities* (balance sheet), a credit for the amount of claims to be covered. As claims are paid by the HMIS (to members and/or providers), they are debited to this account.

At the end of the accounting period, when preparing the I/S and the balance sheet, two cases must be considered.

First case: Some health care providers' invoices were not received by the HMIS before the end of the accounting period

Members may have obtained health services towards the end of the accounting period and providers' invoices for these services may not have reached the HMIS by the date the financial statements were prepared. These expenses are nevertheless attributable to the accounting period just ended.

The example of the VIMO HMIS illustrates this situation.

The HMIS operates a third-party payment system. During the 2006 accounting period, it received invoices totalling Rs 850,000 from health providers. It estimates (on the basis of treatment certificates) that invoices totalling Rs 50,000 have not yet been received.

In the accounting documents, only the expenses for which invoices have been received, i.e. Rs 850,000, have been recorded in the *Claims paid* account. This amount does not, however, correspond to the actual expenses, which are Rs 50,000 higher.

When the financial statements are prepared, correcting entries must be made to reflect the actual expenses for the accounting period. These entries are made in the following manner:

- Use of the *Reported But Not Paid Reserves* account (line 9 on the balance sheet). This account is credited with the amount of invoices not received, or Rs 50,000.
- Use of the *expense* account, *Change in Reported But Not Paid claims* (health services received by beneficiaries and covered by the HMIS, line g3). The Rs 50,000 in health services, for which an invoice has not yet been received, is entered as a debit to the account. The *Subtotal of claims incurred* equals Rs 850,000 (claims paid) + Rs 50,000 (change in RBNP claims) or Rs 900,000 (line G).

Second case: Some invoices received by the HMIS were not paid during the 2006 accounting period

Again taking the example of the VIMO HMIS, with respect to the invoices received:

- Rs 750,000 was actually paid to service providers in 2006;
- Rs 100,000 was unpaid at the end of 2006 and will have to be paid by the end of January 2007.

In the accounting documents, the *Short-term liabilities* account (balance sheet) is the counterpart (double-entry system) of the *Claims paid* account (management account). The last invoices of the year must be recorded under *Claims paid* (which totals Rs 850,000 before making the correction described above). The Rs 100,000 corresponding to invoices not paid are entered as *Short-term liabilities* to service providers (line 12 of the balance sheet).

Table 5. Sociodemographic characteristics of the population of the area of operations and the target population

Reference

Volume 1 – Part II, section 2.2.1

Sources of information

- Demographic and economic data concerning the area of operations (or failing that, the country) obtained primarily from censuses
- Surveys of the target population, or information collected during a feasibility study
- Sociodemographic surveys carried out at the local level

Method of completion

The data entered in column 2 must be as recent as possible. It is also important to give the reference year (or years) in column 3 and the source of these data in column 4.

These data refer to the population of the area of operations of the HMIS and its target population.

The population of the area of operations of the HMIS

1. Size (X). This is the number of people making up the population of the area in which the HMIS operates.

- *For a geographically based HMIS*, the population of the area of operations is easy to define.

> **Example.** If the HMIS operates in a single region, the population of the area of operations is equal to the total population of this region.

- *For a socio-occupationally based HMIS*, the population of the area of operations is the population that contains the socio-occupational category of persons targeted by the HMIS.

> **Example.** If the HMIS is aimed at fishermen, the population of the area of operations consists of the people living in coastal regions or near rivers or waterways.

Censuses are the main source of data for determining the size of the population of the area of operations. If the most recent census is several years old, the census data must be updated using the population growth rate (on average for the period). If the local growth rate is not available, a rough approximation can be made using the national population growth rate.

The method of calculating the total population (X) is as follows:

$$X_N = X_{N_0} (1 + PGR)^{N - N_0}$$

Where: X_N = Population in year N
X_{N_0} = Population in year N_0 (census year)
PGR = Population growth rate

Example. Population of the area (1991 census): 10,000
Population growth rate: 1% per year
Population of the area in 1999:

$$X = 10\,000 \times (1 + 0.01)^8$$
$$X = 10\,828.567$$
$$X = 10\,829 \text{ (rounded figure)}$$

2. Density (Y). This is the ratio of the number of inhabitants of the area of operations (X) to its area in km2 (Z). Y = X/Z (inhabitants per km^2).

Local population density is sometimes difficult to determine owing to a lack of data. It is important to at least have an idea of the magnitude of the population density.

3. Average annual income. This is sometimes indicated in studies carried out by projects or in studies relating to the feasibility of the HMIS. In the absence of specific data for the area, the average annual wage or the national minimum wage may serve as an indicative figure.

The target population of the HMIS

4. Size (P).

- For a geographically based HMIS, the target population is the population of the area of operations of the HMIS (within its geographical limits) who have the opportunity to access its services.

  Example. An HMIS operates in Bangladesh in a region where, in 2006, the population was estimated at 350,000. During that year, only some of the villages in the region, whose combined population was estimated at 150,000 inhabitants, had been contacted and were given the opportunity to access the services of the HMIS (either as members or as dependents). In this case, the population of the area of operations was 350,000, and the target population for 2006 was 150,000. If the HMIS had offered only maternity insurance, the target population would have comprised only those women capable of being pregnant out of the 150,000 inhabitants.

- For a socio-occupationally based HMIS, the target population consists of individuals belonging to the socio-occupational category of persons to whom the HMIS is aimed. These individuals may be scattered across several areas. If the HMIS does not restrict its activities on a geographic basis, the area of operations may be one or more districts or regions, or even an entire country.

> **Example.** If the HMIS is aimed at fishermen, the population of the area of operations consists of the people living in coastal regions or near rivers or waterways. The target population will consist of fishermen and their families (if the HMIS allows for the coverage of family members).

If the HMIS is set up within a trade union, and all the members of that trade union – and only they – may join, then the size of the target population is the same as the number of members of the trade union.

In some cases, the size of the target population may be determined on the basis of the total population, which is generally indicated in the population census. If the most recent census is several years old, the size of the target population must be estimated in similar fashion to the size of the population of the area of operations (see above).

5. Size as a percentage of the population of the area of operations. This is the ratio of the target population to the population of the area of operations, which, for year N is equal to $P_N / X_N \times 100$.

6. Average number of members per household. A household consists of family members living in the same house, sharing the same food and using the same resources for ordinary expenses. It usually consists of the mother, the father, the children and, often, other dependents. This line of the table indicates the average number of persons in a household.

7. Average annual income of the target population. It may happen that the target population does not have the same income as the population of the area of operations. This is often the case with socio-occupationally based schemes. It is useful (but not always possible) to know the average annual income of the target population. When conducting an evaluation, it is necessary to look for data in any previous surveys that may have been taken of this group.

Table 6. Renewal monitoring sheet

Reference

Volume 1 – Part II, section 2.2.1

Sources of information

- Insured and premium file
- Insured, premium and membership fee register

Method of completion

This monitoring sheet provides the basis for calculating renewal rates with reference to the expected month of renewal of members. If 2,000 HMIS members renew in the month of February, each of them is listed on the renewal monitoring sheet. This sheet contains the following headings (in the case of monthly monitoring):

Insurance promoter. The name of the person responsible for promoting the HMIS.

ID, name and address. The ID, name and address of the member to enable the insurance promoter to locate the member.

End date of contract. The date on which the contract between the member and the organization expires.

Renewed. If members renew their participation, the word "yes" is indicated; if not, the word "no" is indicated.

Date renewed. The date on which the member renews.

Example

The Sucura HMIS monitors member renewals each month. The list has proven useful in maintaining a high renewal rate.

Table 7. Beneficiaries monitoring sheet

Reference

Volume 1 – Part II, section 2.2.2

Sources of information

- Insured, premium and membership fee register
- Insured and premium file
- Lists of beneficiaries (or those excluded)

Method of completion

The beneficiaries monitoring sheet is a summary of the insured register and insured files. It allows managers to monitor at regular intervals the number of members and beneficiaries. The beneficiaries monitoring sheet contains the following headings (in the case of monthly monitoring):

X1. New members. Persons enrolled in the HMIS for the first time, who pay their premium for the month concerned (or who re-enrol in the scheme after a lapse in membership).

X2. Lapses. The number of members who are no longer entitled to the benefits of the HMIS owing to a voluntary termination of their membership or to their exclusion from the HMIS (owing, for example, to the prolonged non-payment of premiums).

X. Total contributing members. The total number of contributing members, which is equal to: $X\ month_j = X\ month_{j-1} + X1 - X2$.

Y1. New beneficiaries. The number of beneficiaries (members + dependents) who enrol during the month concerned (and are up to date with their premiums).

Y2. Lapses. The number of beneficiaries who lose their entitlement to the benefits of the HMIS in the month concerned.

Y. Total number of beneficiaries. The total number of beneficiaries who are entitled to the benefits of the HMIS. This total is: $Y\ month_j = Y\ month_{j-1} + Y1 - Y2$.

Z1, Z2, Z3. Beneficiaries by type of membership. This is the number of beneficiaries according to the type of membership in effect in the HMIS. Completion of this part of the sheet is optional. The data concerned are not used elsewhere. This part is useful only if the HMIS offers several types of membership.

Y/X. Average family size. This is the ratio of the total number of beneficiaries (Y) to the total number of contributing members (X) for the month concerned. This ratio may also be calculated for new beneficiaries and lapses.

Annual average (last column). In order to interpret trends in the number of members (and beneficiaries) from one year to the next, it is preferable for managers to use the average number for the year. In schemes with open enrolment periods, there are often significant seasonal variations in membership, which could distort the interpretation if the last available month was taken as a reference for the whole year.

Example

The Sucura HMIS, which has an open enrolment period (enrolment at any time of the year) and no waiting period, started up operations in January of year N–2. The premium covers a period of one year and is payable on enrolment. The last year for which data for a complete year are available is year N.

The beneficiaries monitoring sheet is shown on the following page.

Table 7. Beneficiaries monitoring sheet

		Year N–2												
	Number of contributing members and beneficiaries	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Ann. Av.
														35

		Year N–1												
	Number of contributing members and beneficiaries	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Ann. Av.
														92

		Year N													
	Number of contributing members and beneficiaries	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Ann. Av.	
X1	New members	15	25	10	30	50	160	135	185	40	30	20	25	60	603
X2	Lapses	15	25	35	30	40	60	180	232	50	60	32	23	65	519
X	Total contributing members (balance)	276	276	251	251	261	361	316	269	259	229	217	219	265	1529
Y1	New beneficiaries	120	185	67	201	356	1012	850	1160	325	215	145	158	400	
Y2	Lapses	98	155	231	190	255	380	1325	1520	360	340	205	155	435	1529
Y	Total beneficiaries (balance)	1810	1840	1676	1687	1788	2420	1945	1585	1550	1425	1365	1368	1705	0
	Beneficiaries by type of membership														0
Z1	Voluntary membership	1810	1840	1676	1687	1788	2420	1945	1585	1550	1425	1365	1368	1705	6.42
Z2	Automatic membership	0	0	0	0	0	0	0	0	0	0	0	0	0	
Z3	Compulsory membership	0	0	0	0	0	0	0	0	0	0	0	0	0	
Y/X	Average family size	6.56	6.67	6.68	6.72	6.85	6.70	6.16	5.89	5.99	6.22	6.29	6.25	6.43	

35
20
148
224
116
948
948
0
0
6.41

Table 8. Claims listings by provider

Reference

Volume 1 – Part II, section 2.2.4

Sources of information

- Treatment certificates
- Health care providers' invoices
- Claims registers

Method of completion

Managers create a basic listing for each provider authorized by the HMIS to provide care. These listings are drawn up on a periodic basis (monthly/quarterly/yearly).

Each listing groups together all claims for the various categories of health services provided by the HMIS for the relevant period. A service category includes various types of care (see Table 16). Each listing contains the same categories, for the same periods in order to make the information they contain comparable. On the other hand, all providers do not necessarily provide all services covered by the HMIS.

The listings are completed as follows:

Section 1 – Number of claims. For each category of care, the number of claims covered by the HMIS during the period in question is indicated. A claim is considered to have been covered when the HMIS has authorized payment of the provider (or reimbursement of the member). Whether or not the claim has actually been paid is not relevant here.

Section 2 – Total cost of claims. For each category of care, the total cost of claims covered by the HMIS for the period in question is indicated.

Example

In this example, the categories of health services covered by the Sucura HMIS are:

Category 1: Outpatient care

Category 2: Medicines

Category 3: Non-programmed surgical operations

Category 4: Gynaecological-obstetric treatment

Category 5: Non-programmed medical hospitalizations

Category 6: Programmed hospitalizations

Category 7: Specialist treatment

The Sucura HMIS works with two health care providers, Health Centre X and Hospital Y. The hospital provides all the services covered by the HMIS. The health centre provides only certain services in categories 1, 2 and 4.

The Sucura HMIS started up operations in January of Year N–2.

The scheme's managers draw up a yearly monitoring sheet by performing monthly monitoring of each provider. The following listings contain data for year N.

Table 8. Claims listings by provider

	Services covered	Claims listing for Health Centre X Year N–2 Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total
Number of claims														
1	Outpatient care	1	2	1	0	0	1	1	1	1	1	0	1	10
2	Medicines	5	1	1	1	9	2	6	1	1	4	1	8	40
3	Non-programmed surgical operations	–	–	–	–	–	–	–	–	–	–	–	–	–
4	Gynaecological-obstetric treatment	0	2	2	0	1	2	7	3	1	0	1	1	20
5	Non-programmed medical hospitalizations	–	–	–	–	–	–	–	–	–	–	–	–	–
6	Programmed hospitalizations	–	–	–	–	–	–	–	–	–	–	–	–	–
7	Specialist treatment	–	–	–	–	–	–	–	–	–	–	–	–	–
	Total	6	5	4	1	10	5	14	5	3	5	2	10	70
Cost of claims														
1	Outpatient care	4 000	8 000	3 500	0	0	4 500	3 000	3 000	6 000	4 000	0	4 000	40 000
2	Medicines	6 000	1 000	2 500	1 000	13 000	2 500	6 500	1 000	1 000	2 500	1 000	10 000	48 000
3	Non-programmed surgical operations	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Gynaecological-obstetric treatment	0	6 500	7 500	0	3 500	9 500	35 000	25 000	3 500	0	4 500	5 000	100 000
5	Non-programmed medical hospitalizations	–	–	–	–	–	–	–	–	–	–	–	–	–
6	Programmed hospitalizations	–	–	–	–	–	–	–	–	–	–	–	–	–
7	Specialist treatment	–	–	–	–	–	–	–	–	–	–	–	–	–
	Total	10 000	15 500	13 500	1 000	16 500	16 500	44 500	29 000	10 500	6 500	5 500	19 000	188 000

Table 8. Claims listings by provider

	Services covered	Claims listing for Hospital Y Year N–2 Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total
Number of claims														
1														
2														
3														
4														
5														
6														
7														
Cost														
1														
2														
3														
4														
5														
6														
7														

	Services covered	Claims listing for Hospital Y Year N–1 Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total
Number of claims														
1														
2														
3														
4														
5														
6														
7														
Cost														
1														
2														
3														
4														
5														
6														
7														

	Services covered	Claims listing for Hospital Y Year N Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total
Number of claims														
1	Outpatient care	2	1	0	0	2	1	2	0	0	1	1	2	12
2	Medicines	15	10	5	7	3	10	15	20	2	5	13	10	115
3	Non-programmed surgical operations	2	5	1	1	3	2	1	5	2	1	1	1	25
4	Gynaecological-obstetric treatment	1	5	0	1	2	5	6	3	5	2	2	3	35
5	Non-programmed medical hospitalizations	5	5	2	2	3	10	5	6	3	2	3	4	50
6	Programmed hospitalizations	0	1	0	0	0	0	0	0	1	0	0	0	2
7	Specialist treatment	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	25	27	8	11	13	28	29	34	13	11	20	20	239
Cost of claims														
1	Outpatient care	8 000	3 500	0	0	7 500	4 000	8 500	0	0	8 000	3 500	7 000	50 000
2	Medicines	30 000	17 000	8 000	9 000	8 000	25 000	35 000	45 000	4 500	10 500	10 000	18 000	220 000
3	Non-programmed surgical operations	18 000	53 000	9 000	8 500	30 500	20 000	7 000	55 000	17 000	10 000	12 000	10 000	250 000
4	Gynaecological-obstetric treatment	5 000	32 000	0	5 000	12 000	30 000	36 000	16 000	35 000	14 000	13 000	17 000	215 000
5	Non-programmed medical hospitalizations	90 000	85 000	35 000	30 000	56 000	170 000	71 000	98 000	55 000	35 000	50 000	75 000	850 000
6	Programmed hospitalizations	0	14 000	0	0	0	0	0	0	16 000	0	0	0	30 000
7	Specialist treatment	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	151 000	204 500	52 000	52 500	114 000	249 000	157 500	214 000	127 500	77 500	88 500	127 000	1 615 000

Table 9. Number and cost of claims monitoring sheet

Reference	Volume 1 – Part II, section 2.2.4
Sources of information	Claims listings by provider (Table 8)
Method of completion	Column 2 – *Number of claims.* For each category of care, the total number of claims covered by the HMIS for the period in question and for all providers is indicated here. Column 3 – *Claims (as a percentage of total claims).* This is a measure of the relative share of claims accounted for by each category of care, as follows: *(Number of claims by category/Total number of claims) × 100* Column 4 – *Total cost of claims.* For each category of care, the total cost of claims covered by the HMIS for the period in question and for all providers is indicated here. Column 5 – *Cost of claims (as a percentage of total cost of claims).* This is a measure of the relative cost attributable to each category of claims covered by the HMIS: *(Total cost per category/Total cost of claims) × 100*
Example	Using Table 8 above, the managers and evaluators of the Sucura HMIS have drawn up the number and cost of the following claims for year N:

Table 9. Number and cost of claims monitoring sheet

Category of services covered	Year N–2 Claims (number)	Year N–2 Claims (% of total)	Year N–2 Total cost of claims (MUs*)	Year N–2 Cost of claims (% of total)
Outp				
Med				
Non				
Gyn				
Non				
Prog				
Spe				
Tota				

Category of services covered	Year N–1 Claims (number)	Year N–1 Claims (% of total)	Year N–1 Total cost of claims (MUs*)	Year N–1 Cost of claims (% of total)
Outpati				
Medicir				
Non-pro				
Gynaec				
Non-pro				
Program				
Specialis				
Total				

Category of services covered	Year N Claims (number)	Year N Claims (% of total)	Year N Total cost of claims (MUs*)	Year N Cost of claims (% of total)
Outpatient care	22	7.1%	90 000	5.0%
Medicines	155	50.2%	268 000	14.9%
Non-programmed surgical operations	25	8.1%	250 000	13.8%
Gynaecological-obstetric treatment	55	17.8%	315 000	17.5%
Non-programmed medical hospitalizations	50	16.2%	850 000	47.1%
Programmed hospitalizations	2	0.6%	30 000	1.7%
Specialist treatment	0	0.0%	0	0.0%
Total	**309**	**100.0%**	**1 803 000**	**100.0%**

* MU's = Monetary units

Analysis note. At 50.2 per cent of the total, prescriptions of medicines account for the largest number of claims. Yet they represent only 14.9 per cent of the total cost of claims covered by the HMIS. Conversely, the most costly claims covered by the HMIS correspond to non-programmed hospitalizations, which represent 47.1 per cent of the total cost of claims but only 16.2 per cent of the total number of claims.

Table 10. Average claims cost monitoring sheet

Reference	Volume 1 – Part II, section 2.2.4
Sources of information	Claims listings by provider (Table 8)
Method of completion	The method for completing this table is the same as that for Table 8. The following formula is used to calculate the average costs accounted for by each category of service and each provider: *Total cost for each category/Number of claims for each category*
Example	The average costs of claims covered by the Sucura HMIS over the course of the last three years (N, N–1 and N–2) are calculated on the basis of Table 8 and are listed on three separate sheets. It should be noted that the average cost ("Annual" column) for the total of claims for the year is not equal to the mean of average monthly costs. The average annual cost for a given category of care is equal to the total cost of care for the year divided by the total number of claims for the year.

Table 10. Average claims cost monitoring sheet

	Services covered	Average costs – Year N–2												
		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Annual
	Health Centre X													

	Services covered	Average costs – Year N–1												
		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Annual
	Health Centre X													

	Services covered	Average costs – Year N												
		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Annual
Health Centre X														
1	Outpatient care	4000	4000	3500	0	0	4500	3000	3000	6000	4000	0	4000	**4000**
2	Medicines	1200	1000	2500	1000	1444	1250	1083	1000	1000	625	1000	1250	**1200**
3	Non-programmed surgical operations	–	–	–	–	–	–	–	–	–	–	–	–	**–**
4	Gynaecological-obstetric treatment	0	3250	3750	0	3500	4750	5000	8333	3500	0	4500	5000	**5000**
5	Non-programmed medical hospitalizations	–	–	–	–	–	–	–	–	–	–	–	–	**–**
6	Programmed hospitalizations	–	–	–	–	–	–	–	–	–	–	–	–	**–**
7	Specialist treatment	–	–	–	–	–	–	–	–	–	–	–	–	**–**
	Total claims	**1667**	**3100**	**3375**	**1000**	**1650**	**3300**	**3179**	**5800**	**3500**	**1300**	**2750**	**1900**	**2686**
Hospital Y														
1	Outpatient care	4000	3500	0	0	3750	4000	4250	0	0	8000	3500	3500	**4167**
2	Medicines	2000	1700	1600	1286	2667	2500	2333	2250	2250	2100	769	1800	**1913**
3	Non-programmed surgical operations	9000	10600	9000	8500	10167	10000	7000	11000	8500	10000	12000	10000	**10000**
4	Gynaecological-obstetric treatment	5000	6400	0	5000	6000	6000	6000	5333	7000	7000	6500	5667	**6143**
5	Non-programmed medical hospitalizations	18000	17000	17500	15000	18667	17000	14200	16333	18333	17500	16667	18750	**17000**
6	Programmed hospitalizations	0	14000	0	0	0	0	0	0	16000	0	0	0	**15000**
7	Specialist treatment	0	0	0	0	0	0	0	0	0	0	0	0	**0**
	Total claims	**6040**	**7574**	**6500**	**4773**	**8769**	**8893**	**5431**	**6294**	**9808**	**7045**	**4425**	**6350**	**6757**
All health care providers														
1	Outpatient care	4000	3833	3500	0	3750	4250	3833	3000	6000	6000	3500	3667	**4091**
2	Medicines	1800	1636	1750	1250	1750	2292	1976	2190	1833	1444	786	1556	**1729**
3	Non-programmed surgical operations	9000	10600	9000	8500	10167	10000	7000	11000	8500	10000	12000	10000	**10000**
4	Gynaecological-obstetric treatment	5000	5500	3750	5000	5167	5643	5462	6833	6417	7000	5833	5500	**5727**
5	Non-programmed medical hospitalizations	18000	17000	17500	15000	18667	17000	14200	16333	18333	17500	16667	18750	**17000**
6	Programmed hospitalizations	0	14000	0	0	0	0	0	0	16000	0	0	0	**15000**
7	Specialist treatment	0	0	0	0	0	0	0	0	0	0	0	0	**0**
	Total claims	**5194**	**6875**	**5458**	**4458**	**5674**	**8045**	**4698**	**6231**	**8625**	**5250**	**4273**	**4867**	**5835**

Table 11. Risk frequency monitoring sheet

Reference

Volume 1 – Part II, section 2.2.4

Sources of information

- Beneficiaries monitoring sheet (Table 7).
- Claims listings by provider (Table 8)

Method of completion

The frequency of risk (or use of health services), expressed as a percentage, is calculated for each category of service and each provider for the period concerned using the following formula:

Number of claims in a health care category/
Average number of beneficiaries entitled to claims

With respect to the calculation of the risk frequency, it is important to note that some health microinsurance schemes offer a number of different contracts (benefit plans). Consequently, their beneficiaries do not all have access to the same types of benefits. In order to calculate the risk frequency in such cases, a distinction should be made between claims (Table 8) and beneficiaries (Table 7) according to type of contract, and separate monitoring sheets should be prepared in order to keep track of the risk frequency for each type of contract in effect.

Example

Based on Tables 7 and 8, the utilization frequency for years N, N–1 and N–2, for claims submitted to the Sucura HMIS, is as follows on the opposite page.

Table 11. Risk frequency monitoring sheet

	Services covered	Risk frequency – Year N–2 (per cent)												
		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Annual
	Health Centre X													

	Services covered	Risk frequency – Year N–1 (per cent)												
		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Annual
	Health Centre X													

	Services covered	Risk frequency – Year N (per cent)												
		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Annual
Health Centre X														
1	Outpatient care	0.06	0.11	0.06	0	0	0.04	0.05	0.06	0.06	0.07	0	0.07	**0.59**
2	Medicines	0.28	0.06	0.06	0.06	0.50	0.08	0.31	0.06	0.06	0.28	0.07	0.58	**2.35**
3	Non-programmed surgical operations	–	–	–	–	–	–	–	–	–	–	–	–	**–**
4	Gynaecological-obstetric treatment	0	0.11	0.12	0	0.06	0.08	0.36	0.19	0.06	0	0.07	0.07	**1.17**
5	Non-programmed medical hospitalizations	–	–	–	–	–	–	–	–	–	–	–	–	**–**
6	Programmed hospitalizations	–	–	–	–	–	–	–	–	–	–	–	–	**–**
7	Specialist treatment	–	–	–	–	–	–	–	–	–	–	–	–	**–**
	Total claims	**0.33**	**0.27**	**0.24**	**0.06**	**0.56**	**0.21**	**0.72**	**0.32**	**0.19**	**0.35**	**0.15**	**0.73**	**4.11**
Hospital Y														
1	Outpatient care	0.11	0.05	0	0	0.11	0.04	0.10	0	0	0.07	0.07	0.15	**0.70**
2	Medicines	0.83	0.54	0.30	0.41	0.17	0.41	0.77	1.26	0.13	0.35	0.95	0.73	**6.75**
3	Non-programmed surgical operations	0.11	0.27	0.06	0.06	0.17	0.08	0.05	0.32	0.13	0.07	0.07	0.07	**1.47**
4	Gynaecological-obstetric treatment	0.06	0.27	0	0.06	0.11	0.21	0.31	0.19	0.32	0.14	0.15	0.22	**2.05**
5	Non-programmed medical hospitalizations	0.28	0.27	0.12	0.12	0.17	0.41	0.26	0.38	0.19	0.14	0.22	0.29	**2.93**
6	Programmed hospitalizations	0	0.05	0	0	0	0	0	0	0.06	0	0	0	**0.12**
7	Specialist treatment	0	0	0	0	0	0	0	0	0	0	0	0	**0**
	Total claims	**1.38**	**1.47**	**0.48**	**0.65**	**0.73**	**1.16**	**1.49**	**2.15**	**0.84**	**0.77**	**1.47**	**1.46**	**14.02**
All health care providers														
1	Outpatient care	0.17	0.16	0.06	0	0.11	0.08	0.15	0.06	0.06	0.14	0.07	0.22	**1.29**
2	Medicines	1.10	0.60	0.36	0.47	0.67	0.50	1.08	1.32	0.19	0.63	1.03	1.32	**9.09**
3	Non-programmed surgical operations	0.11	0.27	0.06	0.06	0.17	0.08	0.05	0.32	0.13	0.07	0.07	0.07	**1.47**
4	Gynaecological-obstetric treatment	0.06	0.38	0.12	0.06	0.17	0.29	0.67	0.38	0.39	0.14	0.22	0.29	**3.23**
5	Non-programmed medical hospitalizations	0.28	0.27	0.12	0.12	0.17	0.41	0.26	0.38	0.19	0.14	0.22	0.29	**2.93**
6	Programmed hospitalizations	0	0.05	0	0	0	0	0	0	0.06	0	0	0	**0.12**
7	Specialist treatment	0	0	0	0	0	0	0	0	0	0	0	0	**0**
	Total claims	**1.71**	**1.74**	**0.72**	**0.71**	**1.29**	**1.36**	**2.21**	**2.46**	**1.03**	**1.12**	**1.61**	**2.19**	**18.12**

Table 12. Budget monitoring sheet

Reference	Volume 1 – Part II, section 3.1
Sources of information	• Supporting documents • Cash book • Bank statements • Journal • General ledger • Budget
Method of completion	Column 2 of the table contains the budget estimates for the year, broken down into different budget lines. The budget is broken down quarterly in subsequent columns. For each quarter, the total income and expense planned for the period is shown in column 3 under "Budgeted". In the "Actual" column, the income and expense recorded in the accounting documents for the quarter are entered. The difference between the budgeted and actual amounts is shown as both a value and a percentage in columns 5 and 6 for the quarter. The percentage difference is equal to the ratio of the difference in value to the budgeted amount.

Table 13. Cash flow monitoring sheet

Reference	Volume 1 – Part II, section 3.2
Sources of information	• Supporting documents • Cash book • Bank statements • Journal • General ledger • Cash flow plan
Method of completion	The cash flow monitoring sheet has headings that are similar to those of the budget monitoring sheet, but which concern only cash flows. The cash flow monitoring sheet is completed according to the same principle as the budget monitoring sheet.

Table 14. List of investments

Reference

Volume 1 – Part II, section 2.3

Sources of information

- Supporting documents
- Cash book
- Bank statements
- Journal
- General ledger

Method of completion

All investments and resources of the HMIS are listed by asset class. The book value of the investment is listed in the second column. The current market value, if available, is listed in the third column. The share accounted for by the asset class (expressed as a percentage) in the total book value of the scheme's investments is listed in the fourth column. The final column lists the expected yield or return on investment for the asset class.

Table 15. List of management and monitoring tools

Reference

Volume 1 – Part II, section 2.4

Sources of information

The management information system of the HMIS

Method of completion

Health microinsurance schemes use a variety of management and monitoring tools. The list provided in the table is thus not exhaustive, and other tools may be added to it. The most important consideration is to ensure that the tools used by the HMIS are adequate to allow for effective monitoring and management.

Column 2 of the table shows which tools are used by the HMIS.

Column 3 is reserved for evaluation of the way these tools are used. The following elements may be described:

- *The frequency with which information is updated;*
- *The quality and accuracy of entries* (corrections, crossings out, errors/omissions, etc.);
- *Effective use of tools to produce summarized information* (financial statements, risk frequency monitoring, average costs monitoring, etc.).

Table 16. Reference list of services covered by an HMIS

Reference

Volume 1 – Part III, section 2.2

Sources of information

- Insurance contracts
- Statutes and internal rules
- Meetings with managers and officials in charge of the HMIS

Method of completion

Column 1 of the table is a reference list of the services most commonly offered by health microinsurance schemes (see complete table below). Evaluators should select from the reference list only the services covered by the HMIS under evaluation (or create new categories). If certain services are subject to special conditions of coverage, these should be mentioned.

The figures in column 2 under *"Exposure to insurance-related risks"* show the degree of exposure to the risk of adverse selection and/or over-consumption for each type of service covered. These figures (1, 2 or 3) correspond to the categories described under parameter b1 in Volume 1, (Part III, section 2.1.2). Evaluators must determine from among the services provided by the HMIS those that are, by their nature, subject to the risk of adverse selection and over-consumption.

Evaluators must complete columns 3 to 11 on the basis of measures taken by the HMIS to limit insurance-related risks.

In column 3, under *"Waiting period"*, the length of the waiting period is indicated. The waiting period is frequently the same for all services offered. However, an HMIS may apply a waiting period to only some of the services covered and/or apply a specific waiting period to certain services (delivery, for example).

In columns 4, 5 and 6 ("Deductible", "Percentage co-payment" and "Maximum benefit"), the existence of any co-payment should be indicated for the health service in question. Co-payments may vary from one health service to another and may take the following forms:

- *Deductible.* The amount of the deductible is entered in column 4.
- *Percentage co-payment.* The percentage co-payment is entered in column 5.
- *Maximum benefit (capping).* The amount of the maximum benefit is entered in column 6.

In column 7, under *"Prior agreement"*, an indication is made as to whether, for each health service offered, a prior agreement mechanism is applied by the HMIS. Some services are, in principle, not affected (such as non-programmed hospitalizations, for example).

In column 8, under *"Compulsory referral"*, an indication is made as to whether, for each health service offered, a compulsory referral mechanism is applied by the HMIS, i.e. whether before going to a provider at a given level, a beneficiary must consult a provider at a lower level.

In column 9, under *"Payment mechanisms"*, the payment mechanism used by HMIS is indicated. If, for the same benefit, different payment methods are used, depending on the provider, this should be mentioned.

In column 10, under *"Rationalization of benefits"*, an indication should be made as to whether the care provided is subject to a treatment protocol or to a contract between the HMIS and health care providers, or whether treatment varies according to the practitioner or other factors.

In column 11, under *"Selection of providers"*, an indication is made for each benefit as to whether providers have been pre-selected, or whether the beneficiary is free to choose the health care provider.

These tasks may seem tedious. Practice shows that for many health microinsurance schemes the table will be relatively easy to complete. In fact, the methods and conditions of coverage are often the same or differ very little from one health service to another.

Completing the table is necessary for performing a qualitative analysis of the risk portfolio. Moreover, this table will be of direct use in calculating Indicator G.2 concerning the quality of the risk portfolio.

Example

An HMIS functions in the following manner:

- *With regard to services offered*, it covers all services set out in the table included below.
- *With regard to conditions of membership*, the HMIS:
  - Allows membership at any time of the year (open membership);
  - Imposes a waiting period only for gynaecological-obstetric treatment.

In terms of claims management, the HMIS:

- Has introduced a percentage co-payment of 20 per cent on all claims;
- Allows programmed hospitalizations only on the basis of prior agreement;
- Pays authorized providers by episode of illness;
- Has concluded a contract with two health care providers, Health Centre X and Hospital Y, and covers expenses for services offered only by them.

For this HMIS, Table 16 is completed in the following manner (see next pages):

Reference list of services covered by the health microinsurance scheme	Exposure to insurance-related risks	Measures to limit insurance-related risks								
		Waiting period	Deductible	Percentage co-payment	Maximum benefit	Prior agreement	Compulsory referral	Payment mechanisms	Rationalization of benefits	Selection of providers
Acute outpatient treatment										
Health services										
Curative consultations	3			20%				per case	Yes	Yes
Nursing services	2			20%				per case	Yes	Yes
Minor surgery	2			20%				per case	Yes	Yes
Other	2			20%				per case	Yes	Yes
Medicines										
Generic and essential drugs	2			20%				per case	Yes	Yes
Brand-name and specialist drugs	2			20%				per case	Yes	Yes
Tests										
Laboratory	2			20%				per case	Yes	Yes
X-rays	2			20%				per case	Yes	Yes
Other	2			20%				per case	Yes	Yes
Preventive consultations										
Health services										
Prenatal consultations	2			20%				per case	Yes	Yes
Mother and child care	3			20%				per case	Yes	Yes
Vaccinations	3			20%				per case	Yes	Yes
Other	2			20%				per case	Yes	Yes
Medicines										
Generic and essential drugs	2			20%				per case	Yes	Yes
Brand-name and specialist drugs	2			20%				per case	Yes	Yes
Chronic outpatient treatment										
Health services										
Tuberculosis	3			20%				per case	Yes	Yes
Leprosy	3			20%				per case	Yes	Yes
HIV/AIDS	2			20%				per case	Yes	Yes
Other	2			20%				per case	Yes	Yes
Medicines										
Generic and essential drugs	2			20%				per case	Yes	Yes
Brand-name and specialist drugs	2			20%				per case	Yes	Yes

Reference list of services covered by the health microinsurance scheme	Exposure to insurance-related risks	Measures to limit insurance-related risks								
		Waiting period	Deductible	Percentage co-payment	Maximum benefit	Prior agreement	Compulsory referral	Payment mechanisms	Rationalization of benefits	Selection of providers
Non-programmed surgical operations										
Health services										
Treatment of strangulated hernias	1			20%				per case	Yes	Yes
Appendectomy	1			20%				per case	Yes	Yes
Other intestinal occlusions	1			20%				per case	Yes	Yes
Setting of fractures	1			20%				per case	Yes	Yes
Other	1			20%				per case	Yes	Yes
Medicines										
Generic and essential drugs	2			20%				per case	Yes	Yes
Brand-name and specialist drugs	2			20%				per case	Yes	Yes
Gynaecological and obstetric treatment										
Health services										
Deliveries without complications	2	6 months		20%				per case	Yes	Yes
Caesarean	1	"		20%				per case	Yes	Yes
Dystocic delivery: Use of forceps, dilators, etc.	2	"		20%				per case	Yes	Yes
Curetting – Post partum or after spontaneous or induced abortion	1	"		20%				per case	Yes	Yes
Other	1	"		20%				per case	Yes	Yes
Medicines										
Generic and essential drugs	2	"		20%				per case	Yes	Yes
Brand-name and specialist drugs	2	"		20%				per case	Yes	Yes
Non-programmed medical hospitalizations										
Health services										
Treatment of complications in common diseases	1			20%				per case	Yes	Yes
Malaria (under hospitalization)	1			20%				per case	Yes	Yes
Acute respiratory infections	1			20%				per case	Yes	Yes
Diarrhoea with dehydration	1			20%				per case	Yes	Yes
Intensive care service	1			20%				per case	Yes	Yes
Other	1			20%				per case	Yes	Yes

Reference list of services covered by the health microinsurance scheme	Exposure to insurance-related risks	Measures to limit insurance-related risks								
		Waiting period	Deductible	Percentage co-payment	Maximum benefit	Prior agreement	Compulsory referral	Payment mechanisms	Rationalization of benefits	Selection of providers
Medicines										
Generic and essential drugs	2			20%				per case		
Brand-name and specialist drugs	2			20%				per case		
Programmed hospitalizations										
Health services										
Chronic diseases	3			20%				per case	Yes	Yes
Treatment of simple hernia	3			20%				per case	Yes	Yes
Removal of a goitre	3			20%				per case	Yes	Yes
Hysterectomy or removal of a fibroid tumour	2			20%				per case	Yes	Yes
Other	2			20%				per case	Yes	Yes
Medicines										
Generic and essential drugs	2			20%				per case	Yes	Yes
Brand-name and specialist drugs	2			20%				per case	Yes	Yes
Transport/evacuation										
All	1			20%				per case	Yes	Yes
Specialist services										
Health services										
Ophthalmology	3			20%				per case	Yes	Yes
Cataract	3			20%				per case	Yes	Yes
Eye glasses	2			20%				per case	Yes	Yes
Dental extraction	3			20%				per case	Yes	Yes
Dental treatment	2			20%				per case	Yes	Yes
Prostheses	3			20%				per case	Yes	Yes
Other	2			20%				per case	Yes	Yes
Medicines										
Generic and essential drugs	2			20%				per case	Yes	Yes
Brand-name and specialist	2			20%				per case	Yes	Yes

Note: The empty shaded boxes are used to indicate those benefits for which the scheme's methods of coverage take insufficient account of insurance-related risks. Measures to limit these risks not shown in the example concern in particular:

The *waiting period* (with the exception of gynaecological and obstetric treatment), the application of which can limit the risk of adverse selection. In the absence of a waiting period, individuals may be attracted to the HMIS only when they fall ill, thereby creating a financial imbalance in the system;

The *maximum benefit*, which is designed to contain costs. Hospitalization costs, for example, can be very high, thereby creating a financial imbalance;

The *compulsory referral*, which is a means of reducing costs. Beneficiaries may be tempted, for example, to go directly to specialists (who are more expensive) before consulting a general practitioner.

Tables 19a and 19b. Theoretical and actual role tables

Reference

Volume 1 – Part IV, section 1.1.2

Sources of information

- Statutes
- Internal rules
- Operating manual
- Minutes of annual meeting or general assembly
- Other regulations governing the functioning of the HMIS
- Meetings with HMIS managers, officials in charge and beneficiaries
- Management tools

Method of completion

The role table is filled out in two copies. The format of the two tables is identical (same functions, same questions asked). Only the source of the data used to fill them out is different.

- **Table 19a: Theoretical role table.** It is used to identify the organizational structures and actors "theoretically" responsible for the operation of the HMIS, according to the distribution of roles defined in the regulations of the scheme.
- **Table 19b: Actual role table.** This is used to identify the organizational structures and actors who actually perform the various operations in use at the time of the evaluation. To fill out the actual role table, the various actors concerned must be asked the questions contained in the table, and the information collected must be checked for consistency (minutes, signatures, etc.).

The completion of each table is carried out in two stages:

First stage: Identifying organizational structures and actors

All the organizational structures and actors involved in the management and administration of the HMIS must be identified.

In principle, each function, corresponding to a question in the table, is performed by a single organizational structure. Yet, several actors within each organizational structure (box in the *"Actors within the organizational structure"* column) may be involved. It is advisable to code each organizational structure or actor identified by means of an abbreviation. Evaluators may subdivide the *"Organizational structure"* column into columns for each organizational structure identified (board of directors, executive committee, etc.). It may do the same with the *"Actors"* column. This format can only be used if the number of persons or organizational structures is limited (owing to the number of columns). In such cases, the table is completed by marking the table with an "X" each time an organizational structure or an actor (column) is involved in a function (row).

Different categories of organizational structures and actors have been identified in advance (see Volume 1, Part IV, section 1.1.1).

Second stage: Filling in the squares

The main functions performed by an HMIS are indicated as questions in the table (column 1). A function may be performed by several actors who are internal or external to the HMIS.

The functions are classified according to whether they are:

- Decision-making functions;
- Executive functions;
- Supervisory functions.

For each function, the organizational structure involved and actors responsible should be indicated in the corresponding column.

If the regulations do not mention a particular function, or the function does not exist in the HMIS, the row is left blank.

If the regulations are unclear or ambiguous, question marks should be entered following the name of the actor who is most closely responsible, adding a remark to explain why a question mark was indicated.

Table 20. Analysis of a contract with a health care provider

Reference

Volume 1 – Part IV, section 3.3

Sources of information

Contracts with health care providers

Method of completion

This table is relevant only if the HMIS has formalized its relationship with a service provider by means of a written contract.

The most important contractual provisions in contracts with providers are shown in the table. The content of contracts used by the HMIS may vary according to provider. Consequently, a separate table should be used for each group of similar contracts.

In column 2 of the table, the word "yes" should be entered if the various items listed in column 1 are covered in the contract and "no" if they are not. These items are:

- *The definition of services covered.* In the "Remarks" column, an indication is made as to whether the services are described in detail.
- *Fees.* In the "Remarks" column, an indication is made as to whether the list of fees is complete.
- *Methods of payment of providers.* Four mechanisms are commonly used by the HMIS (see Volume 1, Part III, section 2.1.2):
  - Fee-for-service;
  - Payment per Diagnostic Related Group (or by episode of illness);
  - Fixed daily rate per hospitalization day;
  - Capitation.
- *Payment deadlines.* The agreed upon payment deadlines are indicated in the "Remarks" column.
- *Procedures for applying co-payments.* If the HMIS applies co-payments, the term "procedures" refers to the type of co-payment in effect, the type of benefits subject to co-payment, rules for modifying co-payments, etc.
- *Conditions for modifying fees charged for health services covered by the scheme.*
- *Medical audit procedures.*
- *Procedures for applying treatment protocols.*
- *Methods used by health providers to verify beneficiaries' entitlement to benefit.* The purpose of this item, in particular, is to determine whether the contract explicitly describes the type of check to be performed by the provider (checking membership cards, consulting a list of beneficiaries, etc.)
- *Provider's guarantee with respect to the quality of health services.* This involves identifying the commitments made by the provider with respect to the quality of health services, and the methods, if any, of controlling that quality.
- *Duration of the contract and termination clauses.*
- *Dispute settlement terms.* This involves ascertaining whether the contract contains explicit provisions concerning arbitration in the event of a dispute, such as recourse to judicial authorities or to a third party.

Table 21. Progressive stages towards legal recognition

Reference	Volume 1 – Part IV, section 4.1 [1]
Sources of information	List of regulations of the responsible organization (RO) or, in some cases, the supervisory authority
Method of completion	The following should be checked: *Stage 1:* Whether there are any regulations governing the activities of the RO. *Stage 2:* Whether the RO has statutes or internal rules. In the case of a mutual organization, evaluators should check whether the statutes and internal rules have been adopted by the members. *Stage 3:* Whether the RO has deposited its statutes with the competent authorities. Evaluators should consult the deposit (or declaration) slip. *Stage 4:* Whether the RO has legal personality. If so, it must have received documents from the competent authorities certifying the official registration of its legal personality, accompanied by a registration number. *Stage 5:* Whether the responsible organization has a specific legal status as an insurance provider or an HMIS. Two conditions must be satisfied: ● There must be specific legislation in the country (health microinsurance act or insurance act, for example). ● The legal personality of the responsible organization must have been granted officially through application of the above-mentioned legislation.

[1] The table presented in Volume 1 and referred to here is used in cases in which the insurance scheme is the only activity of the responsible organization (RO). If it is not, the numerous possibilities that exist for establishing separate statutes and entities for the various activities would make the presentation of this table more complex.

Table 22. Statutory and regulatory obligations

Reference

Volume 1 – Part IV, section 4.2

Sources of information

- Statutes
- Internal rules
- Legislative texts governing the functioning of the HMIS

Method of completion

The following should be indicated:

- In column 2, the intervals at which statutory and regulatory obligations should be fulfilled according to the documents of the HMIS *(theoretical intervals)*;
- In column 3, the actual frequency with which the activities subject to statutory and regulatory obligations are carried out.

By comparing the two columns, it is possible to determine the level of compliance of the HMIS with statutory and regulatory obligations. Remarks concerning discrepancies, if any, are recorded in column 4.

The various obligations listed in the table (rows of the table) should be adjusted and, if necessary, supplemented by evaluators, depending on the specific characteristics of each HMIS.

Part II. Calculation of indicators

1. Evaluation indicators of administrative viability

T.1. Distribution and communication monitoring

Reference

Volume 1 – Part III, section 1.1

Sources of information

- HMIS promotional material
- Communication plans
- Training materials for insurance promoters
- List of insurance promoters, indicating length of service with the HMIS, amount of compensation, number of members enrolled, etc.
- Surveys of members' needs and degree of satisfaction with the scheme

Method of calculation

Indicator T.1.1. Communication strategy

Indicator T.1.1 concerns the existence and quality of communication tools. It evaluates the extent to which these tools contain certain items of information considered necessary for the proper communication of facts concerning the HMIS. Three items of information have been selected. One third of a point is attributed each time one of these items is contained in the tools of the HMIS (the information may not necessarily be up-to-date). The sum of the points multiplied by 100 produces an indicator score expressed as a percentage. The maximum score is 100 per cent.

Items of information	Weighting coefficient
1. Written or illustrated material describing benefits	1/3
2. Specific messages describing insurance principles (e.g. The HMIS is a mechanism used to pool resources.)	1/3
3. Periodically updated communication materials	1/3
Total	**1**

If there are no communication monitoring tools, or if the tools do not contain any of the above-mentioned items of information, the indicator score is 0.

Indicator T.1.2. Promoters

Indicator T.1.2 concerns the utilization of management and monitoring tools to measure the effectiveness of promoters. These tools should enable managers to conduct a number of monitoring activities. Four activities have been selected on the basis of their importance.

Activities	Weighting coefficient
1. Training materials for insurance promoters are developed	1/4
2. Training is provided at least once a year	1/4
3. Managers monitor the effectiveness of insurance promoters	1/4
4. Managers monitor HMIS promoters' turnover	1/4
Total	**1**

One fourth of a point is attributed for each activity that the scheme carries out. The sum of the points multiplied by 100 produces an indicator score expressed as a percentage. The maximum score is 100 per cent.

If there are no management monitoring tools, or if none of the above mentioned activities is carried out, the indicator score is 0.

Indicator T.1.3. Member satisfaction

Indicator T.1.3 concerns the utilization of management and monitoring tools to measure the target population's satisfaction with the HMIS. These tools should enable managers to carry out a number of monitoring activities. Two activities have been selected on the basis of their importance. One half of a point is attributed for each activity that the scheme carries out. The sum of the points multiplied by 100 produces an indicator score expressed as a percentage. The maximum score is 100 per cent.

Activities	Weighting coefficients
1. Managers measure members' satisfaction with the HMIS	½
2. Surveys are conducted to understand why members left the scheme	½
Total	**1**

If none of the activities is being carried out at the time of the evaluation, the indicator score is 0.

Indicator T.1 is the arithmetic mean of indicators T.1.1, T.1.2 and T.1.3:

$$T.1 = \frac{T.1.1 + T.1.2 + T.1.3}{3}$$

The indicator can range between 0 and 100 per cent.

T.2. Membership monitoring

Reference

Volume 1 – Part III, section 1.2

Sources of information

- Insured and premium file
- Insured, premium and membership fee register
- List of beneficiaries (or those excluded)

Method of calculation

Indicator T.2.1. Membership management and monitoring tools

Indicator T.2.1 concerns the existence and quality of membership management and monitoring tools. It evaluates whether these tools contain certain items of information considered essential for monitoring membership adequately. Three items of information have been selected. One third of a point is attributed each time one of these items is contained in the tools of the HMIS (the information may not necessarily be up-to-date). The sum of the points multiplied by 100 produces an indicator score expressed as a percentage. The maximum score is 100 per cent.

Items of information	Weighting coefficient
1. ID number and/or name of member	1/3
2. Starting date of coverage	1/3
3. Ending date of coverage	1/3
Total	**1**

If there are no membership monitoring tools, or if the tools do not contain any of the above-mentioned items of information, the indicator score is 0.

Indicator T.2.2. Use of membership management and monitoring tools

Indicator T.2.2 concerns the use of the membership management and monitoring tools of the HMIS. These tools should enable managers to carry out a number of monitoring activities. Four activities have been selected on the basis of their importance. One fourth of a point is attributed to each activity that the scheme carries out. The sum of the points multiplied by 100 produces an indicator score expressed as a percentage. The maximum score is 100 per cent.

Activities	Weighting coefficient
1. A calculation is made of the number of beneficiaries covered	1/4
2. A calculation is made of the average number of beneficiaries per contributing member	1/4
3. The list of members and beneficiaries is updated	1/4
4. The list of members with premiums in arrears and members temporarily or permanently excluded from the HMIS is updated regularly	1/4
Total	**1**

If none of the activities is being carried out at the time of the evaluation, the indicator score is 0.

Indicator T.2 is the arithmetic mean of indicators T.2.1 and T.2.2:

$$T.2 = \frac{T.2.1 + T.2.2}{2}$$

The indicator can range between 0 and 100 per cent.

T.3. Premium collection monitoring

Reference

Volume 1 – Part III, section 1.3

Sources of information

- Insured and premium file
- Insured, premium and membership fee register
- List of beneficiaries (or those excluded)

Method of calculation

Indicator T.3 measures the existence and quality of monitoring tools for collecting premiums and membership fees, as well as the type of information these tools contain. In order to calculate this indicator, it is necessary to distinguish between health microinsurance schemes in which premiums are paid in a single amount and those in which they are paid in instalments.

Schemes in which premiums are paid in a single amount

Two items of information have been selected for their importance in monitoring the collection of premiums. One half of a point is attributed each time one of these items is contained in the tools of the HMIS (the information may not necessarily be up-to-date). The sum of the points multiplied by 100 produces an indicator score expressed as a percentage. The maximum score is 100 per cent.

Items of information	Weighting coefficients
1. Amount of premiums due	1/2
2. Total amount of premiums received for the period	1/2
Total	**1**

Schemes in which premiums are paid in instalments

Six items of information have been selected for their importance in monitoring the collection of premiums. One sixth of a point is attributed each time one of these items is contained in the tools of the HMIS (the information may not necessarily be up-to-date). The sum of the points multiplied by 100 produces an indicator score expressed as a percentage. The maximum score is 100 per cent.

Items of information	Weighting coefficients
1. Amount of premiums due	1/6
2. Total amount of premiums received for the period	1/6
3. Amount of premiums to be collected on the due date	1/6
4. Amount of premiums received for the current accounting period	1/6
5. Amount of premiums received for the next accounting period	1/6
6. Number of members (and/or dependents) who are up-to-date with their premium payments	1/6
Total	**1**

T.4. Verification of benefit entitlement

Reference

Volume 1 – Part III, section 1.4

Sources of information

- HMIS management information system
- HMIS administrative procedures
- Meetings with managers and health care providers

Method of calculation

Indicator T.4 concerns the existence and implementation of procedures carried out by health providers and the HMIS to verify entitlement to benefits. These procedures vary depending on the verification tools used. Such tools include: Membership cards (or insurance certificates), guarantee letters, treatment certificates and lists of persons excluded from coverage by the HMIS. This indicator is calculated on the basis of a number of possibilities:

- The HMIS may use only one verification tool – for example, the membership card.
- The HMIS may perform several controls using various tools, for example membership card plus guarantee letter, or membership card plus treatment certificate and list of excluded persons.

For each use of a tool as part of a control procedure, a point is attributed according to the scoring table below.

Actors	Activities	Membership card	List of excluded persons	Guarantee letter	Treatment certificate
HMIS	Insured files and registers are updated	1	1	1	1
	Validity of membership card is checked			1	
	Appearance of beneficiary's name on membership file is checked			1	
	List of excluded persons is updated		1		
	Insured files (or persons excluded) are compared to invoices	1	1		
	Guarantee letters are compared to invoices			1	
	Treatment certificates are compared to invoices				1
Provider	Validity of membership card is checked	1			1
	Appearance of beneficiary's name on membership card is checked	1			1
	A list of excluded persons, drawn up by the HMIS, is checked		1		
	Total scores for each tool	**4**	**4**	**4**	**4**

The score for each tool may range between 0 and 4.

Indicator T.4, expressed as a percentage, is calculated on the basis of the following formula:

$$T.4 = \frac{\textit{Sum of scores for each tool used}}{4 \times \textit{number of tools used}} \times 100$$

For example, if two tools are used, and each has a total score of 2 points, the value of the indicator will be:

$$T.4 = \frac{2+2}{4 \times 2} \times 100$$

or T.4 = 50 per cent.

It is, in fact, more important to analyse the verification activities listed on the table in order to determine whether they have been carried out by the scheme than it is to determine the indicator score.

When analysing indicator T.4, evaluators must check to see whether service providers take measures to refuse to provide coverage to cheats when detected, and/or whether the HMIS penalizes them (refusal to reimburse services, withdrawal of membership card, exclusion from benefit, etc.).

The application of control procedures, no matter how effective, is useless if beneficiaries, or non-beneficiaries, for that matter, can wrongfully access the services of the HMIS without fear of punishment.

T.5. Claims monitoring

Reference

Volume 1 – Part III, section 1.5

Sources of information

HMIS management information system

Method of calculation

Indicator T.5.1. Claims monitoring by service and provider

Indicator T.5.1 concerns the existence of claims management and monitoring tools and the quality of the information they contain. This indicator should be calculated on the basis of the information contained in Table 8.

Indicator T.5.1 applies to cases in which monitoring is carried out by provider. Monitoring carried out by provider facilitates detection of slippages, if any, in the cost of claims.

Three assessment criteria have been selected to evaluate the quality of monitoring. One third of a point is attributed each time one of these criteria is satisfied. The sum of the points multiplied by 100 produces an indicator score expressed as a percentage. The maximum score is 100 per cent.

Assessment criteria	Weighting coefficients
1. The monitoring tools for each provider contain the number of claims	1/3
2. The monitoring tools for each provider contain the cost of claims	1/3
3. The monitoring tools are regularly updated (up-to-date at the time of the evaluation)	1/3
Total	**1**

Indicator T.5.2. Claims management information system

Indicator T.5.2 is similar to indicator T.5.1. It concerns the existence of aggregated data (for all providers combined) on claims, and should be calculated on the basis of the information contained in Table 9.

As with the previous indicator, three assessment criteria have been selected to evaluate the quality of monitoring. One third of a point is attributed each time one of these criteria is satisfied. The sum of the points multiplied by 100 produces an indicator score expressed as a percentage. The maximum score is 100 per cent.

Assessment criteria	Weighting coefficients
1. The monitoring tools contain the total number of claims for each category	1/3
2. The monitoring tools contain the cost of claims for each category	1/3
3. The monitoring tools are regularly updated (up–to-date at the time of the evaluation)	1/3
Total	**1**

Indicator T.5 provides an overall assessment of monitoring in this area.

It is the arithmetic mean of indicators T.5.1 and T.5.2:

$$T.5 = \frac{T.5.1 + T.5.2}{2}$$

This indicator may range between 0 and 100 per cent.

T.6. Risk portfolio monitoring

Reference

Volume 1 – Part III, section 1.5

Sources of information

HMIS management information system

Method of calculation

Indicator T.6 may be used to determine whether managers possess the tools needed to monitor the risk portfolio. It is calculated on the basis of six criteria for monitoring the number, average costs and frequency of claims. This indicator should be calculated on the basis of information contained in Tables 9, 10 and 11.

One sixth of a point is attributed each time one of these criteria is satisfied. The sum of the points multiplied by 100 produces the indicator score expressed as a percentage. The maximum score is 100 per cent.

Criteria	Weighting coefficients
Existence of monitoring tools	
1. The tools may be used to monitor the average cost of claims (by category and/or benefit)	1/6
2. The tools may be used to monitor the frequency of risks (by category and/or benefit)	1/6
Maintenance of monitoring tools	
3. The tools used for monitoring average costs are updated annually	1/6
4. The tools used for monitoring average costs are updated quarterly	1/6
5. The tools used for monitoring the frequency of risks are updated annually	1/6
6. The tools used for monitoring the frequency of risks are updated quarterly	1/6
Total	**1**

T.7. Accounting records monitoring

Reference

Volume 1 – Part III, section 1.6

Sources of information

- Accounting documents and tools
- Accounting management procedures

Method of calculation

Indicator T.7 measures the existence and the quality of accounting records monitoring, assuming that an accounting system exists. The purpose is not to assess the management of the accounting function, but rather the monitoring procedures implemented by the scheme.

Six activities have been selected. One sixth of a point is attributed for each activity carried out. The sum of the points multiplied by 100 produces an indicator score expressed as a percentage. The maximum score is 100 per cent.

Activity	Weighting coefficients
1. Collection of accounting documents	1/6
2. Filing of accounting documents	1/6
3. Regular checking of accounting entries and balances (for example, balancing the accounts)	1/6
4. Monthly cash control and reconciliation of bank statements	1/6
5. Verification of the annual income statement	1/6
6. Verification of the annual balance sheet	1/6
Total	**1**

T.8. Financial monitoring

Reference

Volume 1 – Part III, section 1.7

Sources of information

- Financial management tools
- Financial management procedures

Method of calculation

Indicator T.8 relates to the existence and quality of budget, cash flow and investment monitoring.

Five monitoring activities have been selected. One fifth of a point is attributed for each activity carried out by the scheme. The sum of the points multiplied by 100 produces an indicator score expressed as a percentage. The maximum score is 100 per cent.

Activity	Weighting coefficients
1. Establishment of the budget at the beginning of the period	1/5
2. Budget monitoring carried out at least twice a year	1/5
3. Construction of a cash flow plan at the beginning of the year covering at least one year, and monitoring on at least a quarterly basis	1/5
4. Investments monitored annually	1/5
5. Monitoring of the premium collection rate (M.6) on at least a quarterly basis	1/5
Total	**1**

T.9. Overall quality of monitoring

Reference

Volume 1 – Part III, section 1.8

Sources of information

Indicators T.1 to T.8

Method of calculation

This indicator provides an evaluation of the overall quality of monitoring carried out by the HMIS on the basis of the monitoring indicators presented above.
The scores for the various monitoring indicators are entered in the following table:

No.	Indicators of good management	Score obtained	Optimal score	Difference
T.1	Distribution and communication monitoring		100%	
T.2	Membership monitoring		100%	
T.3	Premium collection monitoring		100%	
T.4	Verification of benefit entitlement		100%	
T.5	Claims monitoring		100%	
T.6	Risk portfolio monitoring		100%	
T.7	Accounting records monitoring		100%	
T.8	Financial monitoring		100%	
	Total score		**100%**	

The indicator is equal to the arithmetic mean of the other monitoring indicators:

$$T.9 = \frac{Total\ score\ obtained}{8}$$

2. Evaluation indicators of technical viability

G.1. Membership arrangements

Reference

Volume 1 – Part III, section 2.2

Sources of information

- Statutes
- Internal rules
- Membership rules (or other regulations)

Method of calculation

Using the table presented below, an evaluation is made of the risk of adverse selection to which the HMIS is exposed as a result of the membership arrangements used.

Membership	Voluntary	Compulsory	Automatic
Individual	3	0	0
Family	2	0	0
Group	1	0	0

0 = no risk of adverse selection, 1 = low risk of adverse selection, 2 = moderate risk of adverse selection, 3 = high risk of adverse selection

If membership is compulsory or automatic (for a socio-occupational group or the population of a particular community), the risk of adverse selection is considered to be zero. In voluntary membership schemes, on the other hand, the smaller the membership base, the greater the risk of adverse selection for the HMIS.

If a scheme offers various membership arrangements, the scores should be weighted on the basis of the proportion of beneficiaries pertaining to each of the categories of membership offered (see Table 7). The indicator is then constructed as follows:

Category	Voluntary	Compulsory	Automatic
Individual	A × 3 points	0	0
Family	B × 2 points	0	0
Group	C × 1 points	0	0
Score	Sum of points		

A = Proportion of beneficiaries with voluntary individual membership, B = Proportion of beneficiaries with voluntary family membership, C = Proportion of beneficiaries with voluntary group membership.

Example

A HMIS has 500 beneficiaries, of which:

- 250 have voluntary individual membership;
- 250 have voluntary family membership.

The proportion of beneficiaries is calculated as follows:

- A = 250/500 = 0.5
- B = 250/500 = 0.5

Category	Voluntary	Compulsory	Automatic
Individual	0.5 × 3 points = 1.5	0	0
Family	0.5 × 2 points = 1.0	0	0
Group	0	0	0
Score	G.1 = 1.5 + 1.0 = 2.5		

The closer indicator G.1 is to 0, the less exposed the HMIS is to the risk of adverse selection as a result of its membership arrangements. The closer indicator G.1 is to 3, the more it is exposed to this risk. In the example shown, an indicator score of 2.5 means that the risk exposure of the HMIS is high.

G.2. Quality of the risk portfolio

Reference

Volume 1 – Part III, section 2.2

Sources of information

- Insurance contracts
- Internal rules (or regulations of the HMIS)
- Meetings with HMIS managers

Method of calculation

This indicator supplements the qualitative analysis carried out on the basis of Table 16. The score for indicator G.2 is obtained from the same reference list as follows:

- In column 1, the services covered by the HMIS are selected. The table provides a reference list of the services most frequently covered. Services not covered by the HMIS should be deleted.
- In column 2, *"Exposure to health insurance-related risks"*, the highest score for each service offered by the HMIS is circled. These scores are then added together to obtain the theoretical total (X, last line of the table) corresponding to an optimal quality for the risk portfolio. If the HMIS provides all the services on the reference list, the maximum score is 194.

For each service offered (each line), a "1" is circled in those cases in which the HMIS applies adequate measures to limit health insurance-related risks, such as those shown in the headings of columns 3 to 11. For example, one point is attributed if a flat-rate system of payment (column 9) is applied. The number of "1s" per line is then added together. The result is the score for the service in question. The scores obtained are added together to produce the real total for the HMIS (Y, last line of the table).

This indicator is calculated using the following formula:

$$G.2 = \frac{Y}{X} \times 100 \text{ (expressed as \%)}$$

Reference list of services covered by the health microinsurance scheme	Exposure to insurance-related risks		Measures to limit insurance-related risks								
			Waiting period	Deductible *(note 2)*	Percentage co-payment	Maximum benefit	Prior agreement	Compulsory referral	Payment mechanisms (flat-rate payment = 1)	Rationalization of benefits	Selection of providers
Acute outpatient treatment											
Health services											
Curative consultations	4		1		1			1			1
Nursing services	4		1		1			1			1
Minor surgery	4		1		1			1			1
Other	4		1		1			1			1
Medicines *(note 1)*											
Generic and essential drugs	5		1		1			1		1	1
Brand-name and specialist drugs	6		1		1		1	1		1	1
Tests											
Laboratory	5		1		1		1	1			1
X-rays	5		1		1		1	1			1
Other	5		1		1		1	1			1
Preventive consultations											
Health services											
Prenatal consultations	5		1				1	1	1		1
Mother and child care	2		1						1		
Vaccinations	2		1						1		
Other	2		1						1		
Medicines											
Generic and essential drugs			–		–			–		–	–
Brand-name and specialist drugs			–		–		–	–		–	–
Chronic outpatient treatment											
Health services											
Tuberculosis	7		1	1		1	1	1	1	1	
Leprosy	7		1	1		1	1	1	1	1	
HIV/AIDS	7		1	1		1	1	1	1	1	
Other	7		1	1		1	1	1	1	1	
Medicines											
Generic and essential drugs			–		–			–		–	–
Brand-name and specialist drugs			–		–		–	–		–	–

Reference list of services covered by the health microinsurance scheme	Exposure to insurance-related risks		Measures to limit insurance-related risks								
			Waiting period	Deductible *(note 2)*	Percentage co-payment	Maximum benefit	Prior agreement	Compulsory referral	Payment mechanisms (flat-rate payment = 1)	Rationalization of benefits	Selection of providers
Non-programmed surgical operations											
Health services											
Treatment of strangulated hernias	2		1						1		
Appendectomy	2		1						1		
Other intestinal occlusions	2		1						1		
Setting of fractures	2		1						1		
Other	2		1						1		
Medicines											
Generic and essential drugs			–		–			–		–	–
Brand-name and specialist drugs			–		–		–	–		–	–
Gynaecological and obstetric treatment											
Health services											
Deliveries without complications	4		1		1			1	1		
Caesarean	2		1						1		
Dystocic delivery: Use of forceps, dilators, etc.	2		1						1		
Curetting – Post partum or after spontaneous or induced abortion	2		1						1		
Other	2		1						1		
Medicines											
Generic and essential drugs			–		–			–		–	–
Brand-name and specialist drugs			–		–		–	–		–	–
Non-programmed medical hospitalizations											
Health services											
Treatment of complications in common diseases	4		1		1	1			1		
Malaria (under hospitalization)	4		1		1	1			1		
Acute respiratory infections	4		1		1	1			1		
Diarrhoea with dehydration	4		1		1	1			1		
Intensive care service	4		1		1	1			1		
Other	4		1		1	1			1		
Medicines											
Generic and essential drugs			–		–			–		–	–
Brand-name and specialist drugs			–		–		–	–		–	–

Reference list of services covered by the health microinsurance scheme	Exposure to insurance-related risks		Measures to limit insurance-related risks								
			Waiting period	Deductible *(note 2)*	Percentage co-payment	Maximum benefit	Prior agreement	Compulsory referral	Payment mechanisms (flat-rate payment = 1)	Rationalization of benefits	Selection of providers
Programmed hospitalizations											
Health services											
Chronic diseases	5		1	1		1	1	1			
Treatment of simple hernia	5		1	1		1	1	1			
Removal of a goitre	5		1	1		1	1	1			
Hysterectomy or removal of a fibroid tumour	5		1	1		1	1	1			
Other	5		1	1		1	1	1			
Medicines											
Generic and essential drugs			–		–			–		–	–
Brand-name and specialist drugs			–		–		–	–		–	–
Transport/evacuation											
All	5		1	1			1	1		1	1
Specialist services											
Health services											
Ophthalmology	5		1		1	1			1		1
Cataract	6		1		1	1	1		1		1
Eye glasses	5		1	1		1			1		1
Dental extraction	5		1		1	1			1		1
Dental treatment	5		1		1	1			1		1
Prostheses	6		1	1		1	1		1		1
Other	5		1		1	1			1		1
Medicines											
Generic and essential drugs			–		–			–		–	–
Brand-name and specialist			–		–		–	–		–	–
TOTAL	**X = 194**	**Y**	**46**	**33**		**22**	**17**	**21**	**31**	**6**	**18**

Note 1: In calculating this indicator, medicines are counted only once, unless subject to different arrangements for different categories of service.

Note 2: In the case of services for which the deductible or the percentage co-payment limit health insurance-related risks, it is considered sufficient to apply only one of the two measures at a time.

G.3. Average claims costs

Reference

Volume 1 – Part III, section 2.2

Sources of information

- Claims listings by provider (Table 8)
- Average claims costs monitoring sheet (Table 10)
- Financial data made available by providers
- Surveys

Method of calculation

G.3.1. Trends in average claims costs

This indicator may be calculated in two ways:

- Based on gross figures for average claims costs, presented as a table or a graph;
- Based on the rate of growth in the average cost of various claims. The following formula is used in such cases:

$$G.3.1 = \frac{Average\ cost_{N} - Average\ cost_{N-1}}{Average\ cost_{N-1}}$$

Trends in average costs may be analysed in a variety of ways:

- By analyzing trends in the average cost of claims over time. This makes it possible to detect an increase in cost and characterize it: as a reversible increase, a regular increase, etc.;
- By comparing trends in the average costs of health care provided by different providers. This can reveal abuses on the part of certain providers or variations in the treatment techniques they use.

Graphs may be prepared in both cases. The comparison of average costs should be made over a sufficiently long period in order for the results to be meaningful.

G.3.2. Comparison of average claims costs for beneficiaries and non-beneficiaries

This indicator may be useful for confirming the existence, if any, of over-prescription. However, it is not always possible to obtain the information necessary to calculate this indicator.
For each service (or category of services) and for the same period, the following information is required:

- X = Average cost of the claim (or category) concerned.
- Y = Co-payment (deductible, percentage co-payment, maximum benefit) to be paid by the HMIS beneficiary for the benefit concerned. The co-payment is calculated on the basis of the average of co-payments to be paid by beneficiaries for the benefit concerned.
- Z = Average cost of the same claim invoiced to a non-beneficiary (based on data made available by the service provider, or on surveys of a representative sample of non-beneficiaries).

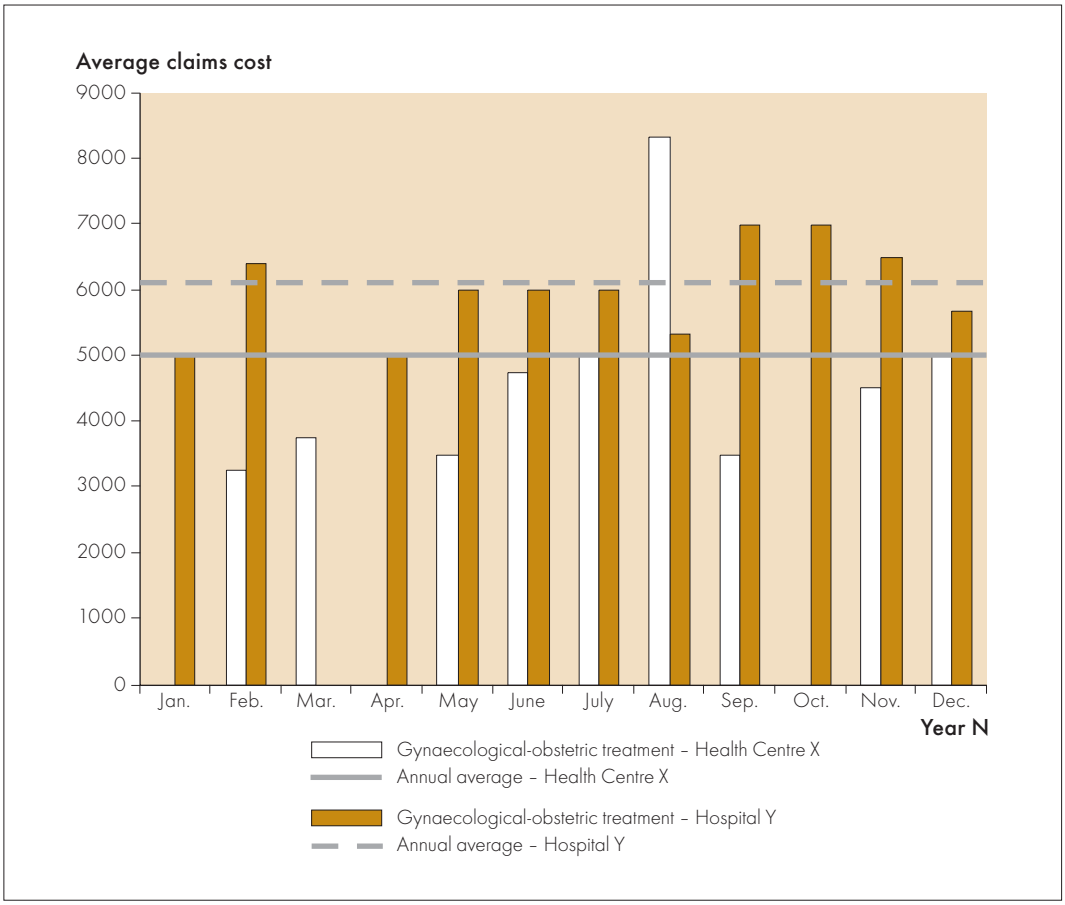
Indicator G.3.2, which compares the average costs of claims for beneficiaries and non-beneficiaries is obtained as follows:

$$G.3.2 = \frac{X + Y}{Z} \times 100$$

A rate higher than 100 per cent indicates that there is a possibility of over-prescription on the part of providers. To verify the existence of over-prescription, other analyses are required.

Examples

G.3.1. The following graph was constructed on the basis of data from the average claims costs monitoring sheet of the Sucura HMIS.



Analysis note. This graph shows that the costs relating to gynaecological/obstetric treatment provided at Hospital Y are fairly stable. The same cannot be said of Health Centre X, where average costs increased sharply in August. An analysis of this increase showed that the Health Centre did not refer a complicated case requiring costly treatment to the hospital, despite the referral arrangements agreed upon with the HMIS. As a result of ongoing monitoring carried out by the HMIS, the increase was quickly identified and the HMIS was able to contact the Health Centre about the matter in order to prevent such cases occurring in the future.

G.3.2. With the assistance of the Chief District Medical Officer, it was possible to estimate the average cost of a simple delivery for an HMIS beneficiary and for a non-beneficiary. For beneficiaries, the cost in year N was Rs 5,000; for non-beneficiaries, it was Rs 3,000. When asked about these differences, the midwife explained that she could not provide all the necessary care for non-beneficiaries – an argument that was not corroborated by the Medical Officer's analysis of the medical files.

3. Evaluation indicators of functional viability

M.1. Overall membership growth rate

Reference

Volume 1 – Part III, section 3.1

Sources of information

- Insured, premium and membership fee register
- Insured and premium file
- Beneficiaries monitoring sheet (Table 7)
- List of beneficiaries (or those excluded)

Method of calculation

Three overall growth rates may be calculated on the basis of identical periods (e.g. months, years), depending on the data available, using the following formulas: [2]

M.1: Overall membership growth rate

$$M.1 = \frac{Members_{YearN} - Members_{YearN-1}}{Members_{YearN-1}} \times 100$$

M.1.1: Overall growth rate in the number of beneficiaries

$$M.1.1 = \frac{Beneficiaries_{YearN} - Beneficiaries_{YearN-1}}{Beneficiaries_{YearN-1}} \times 100$$

M.1.2: Overall growth rate in the number of dependents

$$M.1.2 = \frac{Dependents_{YearN} - Dependents_{YearN-1}}{Dependents_{YearN-1}} \times 100$$

Example

The overall growth rates of the Sucura HMIS in years N and N–1, calculated on the basis of the data in Table 7, are as follows:

Overall growth rate	Year N–1	Year N
Members (M.1)	[(238 – 148)/148] × 100 = **+60.8%**	[(265 – 238)/238] × 100 = **+11.3%**
Beneficiaries (M.1.1)	[(1529 – 948)/948] × 100 = **+61.3%**	[(1705 – 1529)/1529] × 100 = **+11.5%**
Dependents (M.1.2)	[(1291 – 800)/800] × 100 = **+61.4%**	[(1440 – 1291)/1291] × 100 = **+11.5%**

[2] For the sake of simplicity in presenting the formulas, the term "number" has not been included in the formulas. Thus the term "members" should be understood to mean "number of members".

M.2. Renewal rate

Reference

Volume 1 – Part III, section 3.1

Sources of information

- Insured, premium and membership fee register
- Insured and premium file

Method of calculation

The renewal rate corresponds to the rate of renewal of membership, and thus, to the renewal of contracts concluded between the HMIS and its members.

The type of contract varies as a function of the type of HMIS concerned. In a commercial insurance scheme, the contract is concluded between the insurer and the insured person. In a mutual health organization, it is a tacit contract whose terms are contained in the statutes and internal rules of the organization.

In all cases, the contract is usually concluded on an annual basis. Several particular situations need to be taken into account in calculating the renewal rate.

- *For health microinsurance schemes with a closed enrolment period*, the indicator is calculated at the end of the enrolment period and corresponds to the ratio of the number of contributing members in year N–1 who renewed their membership in year N to the total number of members in year N–1, multiplied by 100.

$$M.2 = \frac{Renewing\ members_{Year\,N}}{Members_{Year\,N-1}} \times 100$$

When premiums are paid annually, contract renewals coincide with premium renewals, and the term "annual renewal rate" is used.

When premiums are paid in instalments on a weekly, monthly, quarterly, etc. basis, premium renewals consist of the regular payment of premiums when billed by the HMIS. A distinction must then be made between the annual contract renewal rate and the premium renewal rate, the latter being measured by the rate of the collection of premiums.

- *For health microinsurance schemes with an open enrolment period*, the indicator is calculated in two stages:
  - Each month, the HMIS calculates the rate of renewal of contracts concluded (or renewed) in the same month of the previous year by applying the formula provided above.
  - At the end of the year, the monthly rates are averaged to produce the renewal rate.

Example

The following example illustrates the calculation of the renewal rate of an HMIS with a closed enrolment period for years N and N–1, given the following situations for each year:

	N–2	N–1	N
New members	100	250	160
Lapses	–	10	20
Total members	**100**	**340**	**480**

The renewal rates for years N–1 and N are as follows:

For year N–1: **M.2** = [(340 – 250)/100] × 100 = **90%**

For year N: **M.2** = [(480 – 160)/340] × 100 = **94%**

This indicator could also be calculated in the following manner:

For year N: **M.2** = [(340 – 20)/340] × 100 = **94%**

M.3. Internal membership growth rate

Reference

Volume 1 – Part III, section 3.1

Sources of information

- Insured, premium and membership fee register
- Insured and premium file

Method of calculation

This indicator measures the rate of growth in the number of members living in the old areas of operation of the HMIS. It is calculated using the following formula:

$$M.3 = \frac{Members_{Year\,N}\ in\ old\ MHIS\ areas\ of\ operations\ in\ year\ N\text{-}1 - Members_{Year\,N\text{-}1}}{Members_{Year\,N\text{-}1}} \times 100$$

As was the case with indicator M.1, this rate may be calculated for beneficiaries and dependents using the above formula by replacing the number of members with either the number of beneficiaries or the number of dependents.

Example

Using the addresses of registered members contained in the monitoring tools of the Sucura HMIS, it is possible to divide contributing members in year N–1 into two categories, based on their place of residence.

Contributing members	Year N–2	Year N–1
Old areas	148	135
New areas	0	103
Total	**148**	**238**

The internal growth rate in year N–1 is:

$$\mathbf{M.3} = [(135 - 148)/148] \times 100 = \mathbf{-8.8\%}$$

Analysis note. Indicator M.3 is negative, whereas the overall growth rate (M.1) is positive (+60.8 per cent). This indicates that there has been no growth in the number of members in the old area of operations, and that the growth in the total number of members is due to the geographic extension of the scheme.

M.4. External membership growth rate

Reference

Volume 1 – Part III, section 3.1

Sources of information

- Insured, premium and membership fee register
- Insured and premium file

Method of calculation

This indicator measures the percentage of members from the new areas of operation of the HMIS, using the following formula:

$$M.4 = \frac{Members_{YearN} \text{ in new MHIS areas of operations in year N-1} - Members_{YearN-1}}{Members_{YearN-1}} \times 100$$

As was the case with indicator M.1, this rate may be calculated for beneficiaries and dependents using the above formula by replacing the number of members with either the number of beneficiaries or the number of dependents.

Example

Using the addresses of registered members contained in the monitoring tools of the Sucura HMIS, it is possible to divide contributing members in year N–1 into two categories, based on their place of residence.

Contributing members	Year N–2	Year N–1
Old areas	148	135
New areas	0	103
Total	**148**	**238**

The external rate of growth of the Sucura HMIS in year N–1 is:

$$M.4 = (103/148) \times 100 = \mathbf{69.6\%}$$

Analysis note. The indicator shows that for year N–1, external growth accounted for a very large proportion of the enrolment trend.

M.5. Penetration rate

Reference

Volume 1 – Part III, section 3.1

Sources of information

- Socio-demographic characteristics of the population of the area of operations and the target population (Table 5)
- Beneficiaries monitoring sheet (Table 7)
- Insured, premium and membership fee register
- Insured and premium file
- List of beneficiaries (or those excluded)

Method of calculation

This indicator measures the percentage of beneficiaries among the target population. It is calculated using the following formula:

$$M.5 = \frac{Beneficiaries_{Year\,N}}{Target\ population_{Year\,N}} \times 100$$

The penetration rate may also be calculated for specific categories of beneficiaries and members of the target population. These categories may be based, for example, on gender, age or income.

Example

The penetration rates for the Sucura HMIS in its first three years of operation are as follows:

	Number of beneficiaries and size of target population		
	Year N-2	Year N-1	Year N
Beneficiaries	948	1 529	1 705
Target population	10 000	10 200	10 300
Penetration rate	**9.5%**	**15%**	**16.6%**

M.6. Premium collection rate

Reference

Volume 1 – Part III, section 3.2

Sources of information

- Insured, premium and membership fee register
- Insured and premium file

Method of calculation

This indicator measures the percentage of premiums due that were actually collected by the HMIS (as of a given date). It is calculated using the following formula:

$$M.6 = \frac{Amount\ of\ premiums\ received}{Amount\ of\ premiums\ due} \times 100$$

Example

The amount of premiums due of the VIMO HMIS is Rs 1,300,000 for year N, which covers the period from 1 January to 31 December. At the due date, it had actually collected Rs 1,250,000. The premium collection rate is:

M.6 = (1,250,000/1,300,000) × 100 = **96.2%**

M.7. Average period for reimbursement of members and/or payment of providers

Reference

Volume 1 – Part III, section 3.3

Sources of information

- Income statement
- Balance sheet

Method of calculation

The rules in effect concerning the terms of reimbursement of members or the payment of providers (third-party payment) differ depending on the HMIS in question.

Two indicators are provided below:

M.7.1: Average period for payment of providers

This indicator is calculated on the basis of the amount of liabilities to service providers shown on the balance sheet (Table 2, line 12) and the total amount of claims shown on the income statement (Table 1, line G).

$$M.7.1 = \frac{\textit{Liabilities to service providers}}{\textit{Total claims}} \times 365 \text{ days}$$

The average period for the payment of providers must be evaluated in relation to the periods agreed upon with the provider or, failing this, according to practices observed, in the area concerned, relating to the payment of providers.

M.7.2: Average period for reimbursement of members

This indicator is calculated on the basis of the amount of liabilities to members shown on the balance sheet (Table 2, line 12) and the total amount of claims shown on the income statement (Table 1, line G).

$$M.7.2 = \frac{\textit{Liabilities to members}}{\textit{Total claims}} \times 365 \text{ days}$$

The value of this indicator should be compared with the lengths of periods observed in similar health microinsurance schemes. Managers should also look into any complaints members may have in this area. Lastly, the trend of this indicator can provide useful information in evaluating the functioning of an HMIS.

Example

Based on its I/S and balance sheet (Tables 1 and 2), the indicator for the average period for the payment of providers of the VIMO HMIS, which operates a third-party payment system, is as follows:

M.7.1 = (line 12)/(line G) × 365
= (100,000/900,000) × 365 days = **41 days**

4. Evaluation indicators of financial viability

F.1. Quick ratio

Reference Volume 1 – Part III, section 4.1.1

Sources of information Balance sheet

Method of calculation This ratio is calculated on the basis of readily disposable current assets, i.e. amounts in bank accounts and in cash (Table 2, line 1) and short-term liabilities (Table 2, line 12). Other current assets (receivables, investments and fixed assets) are not included because they are not readily disposable.

To determine the quick ratio, the following formula is applied:

$$F.1 = \frac{Cash\ and\ due\ from\ banks}{Short\ term\ liabilities}$$

Example In the case of the VIMO HMIS (Table 2), the quick ratio is as follows:

F.1 = (line 1) / (line 12) or (490,000/100,000) = **4.9**

> **Analysis note.** A high value for this ratio means that the HMIS will have no problem meeting its short-term liabilities; however, it is necessary to review the cash flow plan because the HMIS may be keeping too much cash.

F.2. Equity-debt ratio

Reference Volume 1 – Part III, section 4.1.1

Sources of information Balance sheet

Method of calculation This ratio is calculated on the basis of equity capital (Table 2, lines 16, 17 and 18) and total liabilities (line 14).

To determine the equity-debt ratio, the following formula is applied:

$$F.2 = \frac{Equity\ capital}{Liabilities} \times 100$$

Example In the case of the VIMO HMIS (Table 2), the equity-debt ratio is:

F.2 = (lines 16 + 17 + 18)/(line 14) × 100 or (0 + 150,000 + 390,000)/250,000 = **216%**

This ratio indicates that the overall solvency of the HMIS is excellent.

F.3. Reserve or cover ratio (of claims)

Reference

Volume 1 – Part III, section 4.1.1

Sources of information

- Balance sheet
- Income statement (I/S)

Method of calculation

This ratio is calculated on the basis of retained earnings, as shown on the balance sheet (Table 2, line 18), and claims (see Vol. 1, p. 21), as shown on the I/S (Table 1, line G).

To determine the reserve or cover ratio (of claims), the following formula is applied:

$$F.3.1 = \frac{Retained\ earnings}{Claims} \times 100\ (\%)$$

$$F.3.2 = \frac{Retained\ earnings}{Claims} \times 12\ (months)$$

Example

In the case of the VIMO HMIS (Tables 1 and 2), and assuming that the entire amount of earnings is transferred to reserves, the reserve ratio is:

$$F.3.1 = [(\text{line } 18)/(\text{line } G)] \times 100$$
$$= [(390{,}000)/900{,}000] \times 100$$
$$= \mathbf{43.3\%}$$

$$F.3.2 = [(\text{line } 18)/(\text{line } G)] \times 12$$
$$= [(390{,}000)/900{,}000] \times 12$$
$$= \mathbf{5.2\ months}$$

F.4. Expense ratio

Reference

Volume 1 – Part III, section 4.1.2

Sources of information

Income statement

Method of calculation

F.4.1. Operating expense to earned premium ratio

This ratio is calculated on the basis of the operating expense of the HMIS for the relevant accounting period (Table 1, line J) and the earned premium (Table 1, line C).

$$F.4.1 = \frac{Operating\ expenses}{Earned\ premium}$$

F.4.2. Total expense to earned premium ratio

This ratio is calculated on the basis of the total expenses for the relevant accounting period (Table 1, line X) and the earned premium (Table 1, line C).

$$F.4.2 = \frac{Total\ expenses}{Earned\ premium}$$

Example

In the case of the VIMO HMIS (Table 1), these ratios are as follows:

F.4.1 = (line J)/(line C)
= 365,000/1,200,000
= **0.30**

F.4.2 = (line X)/(line C)
= 1,265,000/1,200,000
= **1.05**

Analysis note. The HMIS was not able to achieve an adequate operating expense/earned premium ratio (lower than 0.2) and to cover all its expenses from earned premiums. The attractiveness of the HMIS may not be strong enough.

The ratio F.4.2 would have been higher than 1.05 if the HMIS had had to amortize equipment or buildings.

F.5. Claims ratio

Reference

Volume 1 – Part III, section 4.1.3

Sources of information

Income statement (I/S)

Method of calculation

This ratio is calculated on the basis of total claims (Table 1, line G) and earned premium for the accounting period (Table 1, line C), as shown on the I/S.

To determine the claims ratio, the following formula is applied:

$$F.5 = \frac{Total\ claims}{Earned\ premium} \times 100$$

Example

In the case of the VIMO HMIS (Table 1), the claims ratio is as follows:

F.5 = (line G)/(line C) = (900,000/1,200,000) × 100 = **75%**

Analysis note. The value of the ratio shows that a major proportion of premiums is used to finance claims. This is a satisfactory level.

F.6. Gross operating expense ratio

Reference

Volume 1 – Part III, section 4.1.3

Sources of information

Income statement

Method of calculation

This ratio is calculated on the basis of the total operating expenses (Table 1, line J) and total income of the HMIS for the relevant year (Table 1, line R), as shown on the I/S.

To determine the gross operating expense ratio, the following formula is applied:

$$F.6 = \frac{Total\ operating\ expenses}{Total\ income} \times 100$$

Example

In the case of the VIMO HMIS (Table 1), the gross operating expense ratio is as follows:

F.6 = (line J)/(line R) = (365,000/1,205,000) × 100 = **30.3%**

Analysis note. Although this ratio is high, almost half the operating expenses were attributable to training and promotion (200,000). It is normal for an HMIS in the start-up phase to undertake a major information and training effort. The trend of this ratio should be carefully monitored.

F.7. Investment concentration ratio

Reference	Volume 1 – Part III, section 4.1.4
Sources of information	List of investments (Table 14)
Method of calculation	This ratio is calculated on the basis of the list of investments shown in Table 14, using the highest percentage on the table, which is contained in column 4.

F.8. Asset-liability matching

Reference	Volume 1 – Part III, section 4.1.4
Sources of information	Management reports
Method of calculation	This indicator is either 1 or 0. If the HMIS practises asset-liability matching, then the indicator is 1. If it does not, the indicator is 0.

F.9. Financial risk management mechanisms

Reference	Volume 1 – Part III, section 4.2.2
Sources of information	• Management reports • Contracts with reinsurers and insurers
Method of calculation	This indicator is either 1 or 0. If the HMIS has some capacity, such as guarantee funds or reinsurance, to deal with a large co-variant risk, the indicator is 1. If it does not, the indicator is 0.

5. Method of estimating hidden costs and calculating operating income

Reference

Volume 1 – Part III, section 4.3.1

Sources of information

- Role tables (Tables 19a and 19b)
- Income statement
- Balance sheet

Identifying and estimating hidden costs

Identifying hidden costs

Evaluators should identify activities whose costs are not included in the income statement and balance sheet.

> **Example.** In its start-up phase, the VIMO HMIS was supported by a project. The following activities were carried out at no cost to the HMIS:
>
> - Filling out membership cards. This activity was carried out by project staff and a secretary, who were made available to the HMIS.
> - Preparation of the income statement and balance sheet. This was carried out by the project.
> - Organization of three training sessions for officials in charge and managers of the HMIS. This activity was carried out by an NGO and was financed by the project.

Estimating hidden costs

To estimate the amount of hidden costs, a calculation is made of the cost of the activities that the HMIS would have had to perform in order to benefit from the same services that were provided to it free of charge.

Using the above example, the hidden costs for the various activities may be estimated as follows:

- *Filling out membership cards*. If the HMIS had had to contract the services of a person to fill out membership cards, this would have cost it Rs 20,000.
- *Preparation of the income statement and balance sheet*. The HMIS estimated the cost of having the financial statements prepared by a local certified accountant to be Rs 50,000.
- *Organization and financing of three training sessions*. The cost of the training sessions was estimated at Rs 100,000 (travel, accommodation for five people for four days).

In this example, hidden costs came to a total of:

$$\text{Rs } 20{,}000 + 50{,}000 + 100{,}000 = \text{Rs } 170{,}000$$

Calculating operating income

Taking hidden costs into account

After having identified hidden costs, those to be taken into account in calculating the operating income of the HMIS must be distinguished. This requires assessing the need to repeat these activities in the future, the sustainability of the external sources of financing used (project, public institution, community etc.), the level of autonomy desired by the HMIS, etc. It should be borne in mind that the primary objective of estimating hidden costs is to assess the capacity of the HMIS to meet all its expenses in the long term.

Calculating operating income

The operating income is equal to net income for the accounting period minus estimated hidden costs.

Example. In the case of the VIMO HMIS, net income for the accounting period is +Rs 90,000. However, the operating income for the same period is equal to:

Rs 90,000 − Rs 170,000 = −Rs 80,000

The HMIS has a negative operating income (after subtracting hidden costs) even though its income statement showed a positive net income (after subsidies). From the standpoint of this accounting period, the HMIS is not in a position to meet all the expenses required for its operation.

6. Evaluation indicators of economic viability

V.1. Self-financing ratio

Reference

Volume 1 – Part III, section 4.3.3

Sources of information

- Income statement
- Reported hidden costs

Method of calculation

The self-financing ratio assesses the ability of the HMIS to finance all of its expenses. It is calculated on the basis of the own revenue of the HMIS for the relevant accounting period (Table 1, line R), its total expenses, as shown on the income statement (Table 1, line X), and its estimated hidden costs.

To determine the self-financing indicator, the following formula is applied:

$$V.1 = \frac{\textit{Total income}}{\textit{Total expenses + estimated hidden costs}} \times 100$$

Example

In the case of the VIMO HMIS (Table 1), the self-financing ratio is equal to:

$$\begin{aligned} V.1 &= \{(\text{line R})/[(\text{line X}) + (\text{estimated hidden costs})]\} \times 100 \\ &= [1{,}205{,}000/(1{,}265{,}000 + 170{,}000)] \times 100 = \mathbf{84\%} \end{aligned}$$

Analysis note. This ratio shows that the HMIS financed 84 per cent of its expenses (including hidden costs) from its own income (excluding subsidies) over the course of the relevant accounting period.

V.2. (Expense + hidden costs)/earned premium ratio

Reference

Volume 1 – Part III, section 4.3.3

Sources of information

- Income statement
- Reported hidden costs

Method of calculation

This ratio complements the total expense/earned premium ratio (F.4.2). Unlike that ratio, it takes hidden costs into account.

This ratio is calculated on the basis of total expenses and hidden costs for the relevant accounting period (Table 1, line X + estimated hidden costs) and earned premium (Table 1, line C).

$$V.2 = \frac{\textit{Total expenses + estimated hidden costs}}{\textit{Earned premium}} \times 100$$

Example

In the case of the VIMO HMIS (Table 1), this ratio is equal to:

$$\textbf{V.2} = [(\text{line X}) + (\text{estimated hidden costs})]/(\text{line C}) \times 100$$
$$= [(1{,}265{,}000 + 170{,}000)/1{,}200{,}000] \times 100 = \textbf{119\%}$$

Analysis note. A financial analysis shows that the ratio of total expenses to earned premium (F.4.2) was 1.05. Indicator V.2 shows 119%, which is an even greater gap. The HMIS was not able to meet all its expenses for the accounting period from premiums.

The HMIS is in even less of a position to meet all its expenses from premiums when hidden costs are taken into account. This is illustrated by the value for ratio V.2.

7. Evaluation indicators of human resources

H.1. Staff administration tools

Reference

Volume 1 – Part IV, section 1.2.1

Sources of information

Staff administration tools

Method of calculation

Indicator H.1 measures the existence and quality of the staff administration tools of the HMIS. Only two tools have been taken into account for the calculation of this indicator: the operating manual and the staff regulations. The same principle may be applied to similar tools.

Eight items of information have been selected because of their importance. One eighth of a point is attributed each time one of these items is contained in a tool. The total score multiplied by 100 produces the indicator value expressed as a percentage.

Items of information	Weighting coefficients
The operating manual contains the following information:	
1. The objectives of each function of the HMIS	1/8
2. The level of qualification required for the function	1/8
3. The unit (or organizational structure) to which the function is assigned	1/8
4. Description of the tasks corresponding to the function	1/8
The staff regulations contain the following information:	
5. Daily working hours	1/8
6. Dispute settlement	1/8
7. Staff rights	1/8
8. Staff obligations	1/8
Total	**1**

H.2. Investment in training

Reference

Volume 1 – Part IV, section 1.2.2

Sources of information

- Income statement
- Invoices of organizations (or persons) who have provided training
- Estimated cost of training (delivered by support agencies, projects or other bodies).

Method of calculation

Two indicators are provided in order to take into account the fact that a third party often finances some amount of training costs. If the HMIS alone finances all its training costs, the two indicators are identical.

H.2.1. Gross investment in training

The first indicator estimates the cost of training with respect to total annual operating expenses, regardless of whether or not this cost was borne directly by the HMIS. To calculate this indicator, it is thus necessary to estimate the hidden costs relating to training (based on invoices or estimates) and to add them to the training costs shown on the income statement.

To calculate indicator H.2.1 for the relevant accounting period, the following formula is applied:

$$\text{H.2.1} = \frac{\textit{Total training costs}}{\textit{Total operating expenses}} \times 100$$

H.2.2. Net investment in training

The second indicator is similar to the first, but takes into account only training expenses borne by the HMIS. It may be used to determine the percentage of HMIS expenses accounted for training.

To calculate indicator H.2.2 for the relevant accounting period, the following formula is applied:

$$\text{H.2.2} = \frac{\textit{Training expenses}}{\textit{Total operating expenses}} \times 100$$

8. Indicators of effectiveness

E.1. Rate of utilization of health services by beneficiaries

Reference

Volume 1 – Part V, section 1.1

Sources of information

- Beneficiaries monitoring sheet (Table 7)
- Claims listings by provider (Table 8)
- Risk frequency monitoring sheet (Table 11)
- Insured, premium and membership fee register

Method of calculation

The indicator may be calculated for a health service or category of health services covered by the HMIS, for a provider and a group of providers. The data in the numerator and the denominator must correspond to the same period and concern the same beneficiaries. This point is important when the HMIS offers differing benefit packages.

The formula for calculating the indicator, for a health service Z (or category of health services) during the period concerned, is as follows:

$$E.1 = \frac{\textit{Number of benefits Z covered}}{\textit{Average number of HMIS beneficiaries}} \times 100$$

Example

Tables 7 and 8 for the Sucura HMIS show that:

- 50 non-programmed medical hospitalizations were covered by the HMIS.
- The average number of HMIS beneficiaries for the same period was 1,705.

The rate of utilization of non-programmed medical hospitalizations by HMIS beneficiaries in year N was:

$$E.1 = (50/1{,}705) \times 100 = \mathbf{2.9\%}$$

E.2. Comparative rate of utilization of health services

Reference

Volume 1 – Part V, section 1.1

Sources of information

- Beneficiaries monitoring sheet (Table 7)
- Claims listings by provider (Table 8)
- Risk frequency monitoring sheet (Table11)
- Insured, premium and membership fee register
- Management information system for health services dispensed by providers
- Reference population of providers

Method of calculation

The indicator may be calculated for a health service or category of services covered by the HMIS, for a provider or a group of providers. The data required to calculate the indicator can be obtained from the service provider, or by reference to a representative sample of non-beneficiaries living in the area of operations of the HMIS.

The formula for calculating the indicator for a health service Z (or category of health services) for the relevant period is as follows:

$$E.2 = \frac{\dfrac{\textit{Number of benefits Z covered for beneficiaries}}{\textit{Average number beneficiaries}}}{\dfrac{\textit{Number of benefits Z covered for non-beneficiaries}}{\textit{Average number non-beneficiaries}}}$$

Example

Using the example of non-programmed hospitalizations covered by the Sucura HMIS:

- 50 non-programmed medical hospitalizations were covered by the HMIS.
- 2,400 non-programmed medical hospitalizations were provided by the hospital to the population of the area of operations who were not beneficiaries of the HMIS.
- The average number of HMIS beneficiaries for the same period was 1,705.
- For the relevant period, the population of the area covered by the hospital was 105,000, excluding HMIS beneficiaries.

The rate of utilization of non-programmed medical hospitalizations by HMIS beneficiaries in year N was:

Rate of utilization by beneficiaries = (50/1,705) × 100 = **2.9%**

Rate of utilization by non-beneficiaries = (2,400/105,000) × 100 = **2.3%**

The comparative rate of utilization of health services: ***E.2*** = 2.9/2.3 = **1.26**

Beneficiaries use non-programmed medical hospitalizations 1.26 times more often than non-beneficiaries.

E.3. Comparative latent period

Reference

Volume 1 – Part V, section 1.1

Sources of information

- Surveys of health care providers authorized by the HMIS
- Specific household surveys
- Surveys of HMIS beneficiaries using health services

Method of calculation

This indicator may not be precise, inasmuch as it relies on statements (concerning the onset of illness) made by persons who have obtained treatment. It also requires that the dates on which services were obtained are known, which assumes that providers keep updated records on all patient visits.

This indicator is calculated on the basis of average times between:

- *The starting date of the illness (X) necessitating the treatment in question.*
- *The date on which services were obtained (Y) (consultation, hospitalization, etc.).*

The formula for calculating the indicator is as follows:

Latent period for HMIS beneficiaries

$$\text{E.3.1} = \frac{\sum_{i=1}^{n} (Y_i - X_i)}{N}$$

Where N equals the number of beneficiaries surveyed during the period in question.

Latent period for non-beneficiaries

$$\text{E.3.2} = \frac{\sum_{j=1}^{m} (Y_j - X_j)}{M}$$

Where M equals the number of non-beneficiaries surveyed during the period in question.

The comparative latent period is equal to:

$$E.3 = E.3.2 - E.3.1$$

Example

For the sake of simplicity, in this example, information on only four beneficiaries is taken into account for the period from 1 January to 31 December.

Latent period

For beneficiary 1 = 20 March − 15 March = 5 days
For beneficiary 2 = 25 October − 12 October = 13 days
For beneficiary 3 = 12 April − 11 April = 1 day
For beneficiary 4 = 12 June − 9 June = 3 days
The average latent period for HMIS beneficiaries is equal to:

$$E.3.1 = (5 + 13 + 1 + 3)/4 = 5.5 \text{ days}$$

Similarly, information pertaining to four non-beneficiaries is taken into account for the same period.

Latent period

For non-beneficiary 1 = 30 March − 22 March = 8 days
For non-beneficiary 2 = 15 June − 2 June = 13 days
For non-beneficiary 3 = 12 October − 1 October = 11 days
For non-beneficiary 4 = 17 September − 2 September = 15 days
The average latent period for non-beneficiaries is equal to:

$$E.3.2 = (8 + 13 + 11 + 15)/4 = 11.8 \text{ days}$$

The comparative latent period is equal to:

$$E.3 = 11.8 - 5.5 = 6.3 \text{ days}$$

Beneficiaries wait, on average, six days less than non-beneficiaries before seeking treatment.

E.4. Comparative average length of stay for non-programmed hospitalizations

Reference

Volume 1 – Part V, section 1.1

Sources of information

- Management information system of health care providers authorized by the HMIS
- Treatment certificates

Method of calculation

This indicator must be calculated on the basis of a representative sample of beneficiaries and non-beneficiaries from the same area who have undergone a non-programmed hospitalization in the same health facility. The data are retrieved from the medical records of beneficiaries and non-beneficiaries.

The indicator is calculated on the basis of average lengths of stay for non-programmed hospitalizations, i.e.:

- The date of admission to hospital (X)
- The date of discharge from hospital (Y)

The formula for calculating the indicator is as follows:

Average length of stay in hospital for beneficiaries

$$E.4.1 = \frac{\sum_{i=1}^{n} (Y_i - X_i)}{N}$$

Where N equals the number of beneficiaries surveyed during the period in question.

Average length of stay in hospital for non-beneficiaries

$$E.4.2 = \frac{\sum_{j=1}^{m} (Y_j - X_j)}{M}$$

Where M equals the number of non-beneficiaries surveyed during the period in question.

The comparative average length of stay for a non-programmed hospitalization is:

$$E.4 = E.4.2 - E.4.1$$

Example

For the sake of simplicity, in this example, information concerning only four beneficiaries and five non-beneficiaries is taken into account. All these individuals are from the same area and were admitted to hospital during the period from 1 January to 31 December.

Beneficiaries: (non-programmed hospitalizations)
Length of stay in hospital

For beneficiary 1 = 25 March − 17 March = 8 days
For beneficiary 2 = 25 December − 14 December = 11 days
For beneficiary 3 = 12 March − 2 March = 10 days
For beneficiary 4 = 11 July − 6 July = 5 days
The average length of stay in hospital for beneficiaries is equal to:

$$(8 + 11 + 10 + 5)/4 = 8.5 \text{ days}$$

Non-beneficiaries: (non-programmed hospitalizations)
Length of stay in hospital

For non-beneficiary 1 = 10 January − 2 January = 8 days
For non-beneficiary 2 = 25 November − 10 November = 15 days
For non-beneficiary 3 = 12 February − 3 February = 9 days
For non-beneficiary 4 = 12 June − 1 June = 11 days
For non-beneficiary 5 = 15 August − 3 August = 12 days
The average length of stay in hospital for non-beneficiaries is equal to:

$$(8 + 15 + 9 + 11 + 12)/5 = 11 \text{ days}$$

$$E.4 = 11 - 8.5 = 2.5 \text{ days}$$

Beneficiaries are hospitalized, on average, 2.5 days fewer than non-beneficiaries.

E.5. Comparative average costs of non-programmed hospitalizations

Reference

Volume 1 – Part V, section 1.1

Sources of information

- Average claims cost monitoring sheet (Table 10)
- Management information system of health care providers authorized by the HMIS

Method of calculation

The method of calculation of indicator E.5 is similar to that of indicator E.4. To calculate indicator E.5, the average length of stay in E.4 must be replaced by the average cost of a non-programmed hospitalization.

The average costs of hospitalizations can be compared only if the same fees are applied to beneficiaries and non-beneficiaries.

E.6. Rate of exclusion of beneficiaries

Reference

Volume 1 – Part V, section 1.1

Sources of information

Surveys of a sample of households of HMIS beneficiaries and of households of non-beneficiaries

Method of calculation

The rate of exclusion of beneficiaries is estimated on the basis of observations of local morbidity and a comparison of the treatment-seeking behaviour of beneficiaries and non-beneficiaries.

This requires carrying out a survey covering a relatively long period in order to include a sufficient number of cases of illness.

The questions mainly have to do with the size of the household, the number of cases of illness (regardless of the type of illness), the means of treatment sought in each case and the reasons for seeking treatment (quality, proximity, money problems, etc.).

A survey of this kind can provide a snapshot of:

- Local morbidity, which is calculated by dividing the number of new cases of illness (irrespective of gravity) in the household during the period by the number of persons in the household;
- The utilization of different local health care providers and health facilities;
- The impact of the HMIS on the utilization of these providers and health facilities;
- The rate of exclusion (if any) of HMIS beneficiaries from the services covered, as well as the reasons for the exclusion, and comparison with the situation of non-beneficiaries.

Example

An HMIS covers the health services (consultations, minor hospitalizations, maternity care and pharmacy) provided by a district health centre (DHC) (third-party payment system with a variable percentage co-payment, depending on the service).

A survey of the target population of the HMIS (inhabitants of villages covered by the DHC) conducted in the context of an impact assessment produced the following results:

- The rates of morbidity observed, projected over one year, were 1.2 cases of illness per person per year in beneficiary households and 1.3 in non-beneficiary households.
- The treatment-seeking behaviour observed is summarized in the table on next page.

Providers	Frequency with which treatment is sought from providers	
	Beneficiary households	Non-beneficiary households
Traditional self-medication (1)	5%	15%
Modern self-medication (2)	10%	50%
Traditional health practitioners (3)	7%	7%
"Charlatans" (4)	–	35%
Private health care providers (5)	–	3%
District health centre	95%	25%
Regional hospital (consultation)	–	3%
Regional hospital (hospitalization)(6)	4%	8%
Other health care providers (7)	–	–
Number of treatments sought per patient	**1.21**	**1.46**

(1) Use of traditional pharmacopoeia at home
(2) Purchase of medicines in the marketplace and in shops, and use of various medicines available at home
(3) Traditional health practitioners
(4) Tooth-pullers, peddlers and other "practitioners" lacking medical qualifications
(5) Modern health care
(6) The regional hospital has a health centre for the inhabitants of the district in which it is located and admits for hospitalization inhabitants of other districts who are referred by health centres, including the district health centre.
(7) Other community health centres and providers outside the region.

Analysis note. With comparable rates of morbidity between beneficiaries and non-beneficiaries (1.2 and 1.3 cases of illness per person per year respectively), the HMIS has attracted 95 per cent of beneficiary patients to the district health centre, while only 25 per cent of non-beneficiary patients have utilized it.

Twenty-two per cent of beneficiary patients initially sought modern and/or traditional self-medication and traditional health practitioners. This may be a form of temporary exclusion, but the reasons given by households show that, when the case is considered mild, people prefer to seek treatment in the village first in order to save time or to avoid going to the district health centre. Many patients also continue to mix modern and traditional care.

The 5 per cent of beneficiary patients who used traditional self-medication, but who did not use the district health centre, may be broken down as follows:

- 2 per cent, owing to lack of enough money at the time of illness to pay the percentage co-payment;
- 3 per cent considered traditional self-medication to be better able to treat the illness concerned.

The rate of exclusion of beneficiaries for financial reasons was thus 2 per cent. The rate of exclusion of non-beneficiaries, based on their replies, was 32 per cent.

Four per cent of beneficiary patients were treated in the regional hospital (cases referred by the district health centre) as compared with 8 per cent of non-beneficiaries. When asked about this, the DHC nurse and the chief medical officer of the hospital explained that it was quicker and more direct for beneficiaries to seek treatment from the DHC, which accounted for the early management of illness, which contrasted with the behaviour of non-beneficiaries. The latter often arrived at the DHC in serious condition and more frequently required referral to hospital.

This lesser use of secondary health services by beneficiaries does not reflect a phenomenon of exclusion, but rather an earlier and more effective use of health care at the primary level.

9. Indicator of efficiency

C.1. Investment income

Reference

Volume 1 – Part V, section 2

Sources of information

Income statement

Method of calculation

The ratio of investment income to total income is calculated on the basis of the investment income of the HMIS (Table 1, line E) and the total income for the accounting period (Table 1, line R), as shown on the income statement.

This indicator is calculated using the following formula:

$$C.1 = \frac{\textit{Investment income}}{\textit{Total income}} \times 100$$

Example

In the case of the VIMO HMIS (Table 1), this indicator is equal to:

C.1 = (line E) / (line R) = (5000/1,205,000) × 100 = **0.41%**

10. Indicators of impact

I.1. Share of providers' health services accounted for by the HMIS

Reference

Volume 1 – Part V, section 3.2.3

Sources of information

- Providers management information system
- Claims listings by provider (Table 8)
- Claims register

Method of calculation

The formula for calculating this indicator for each service offered and for a given period is as follows:

$$I.1 = \frac{\textit{Number of benefits Z covered}}{\textit{Number of services Z provided by provider Y}} \times 100$$

It is useful to calculate this indicator for:

- The health services the most commonly covered by the HMIS;
- The providers the most frequently visited by beneficiaries.

Example

A hospital Y dispensed 200 health services during the period concerned (column 2), 122 of which were covered by the HMIS (column 3). Indicator I.1, which is calculated for each service, appears in column 4.

Categories of services	Number of services dispensed by provider Y A	Number of health services covered by HMIS B	Indicator I.1 B/A
Non-programmed hospitalizations	80	50	62.5%
Surgical operations	45	25	55.5%
Gynaecological treatment	55	35	63.6%
Outpatient care	20	12	60.0%
Total	**200**	**122**	**61.0%**

I.2. Share of providers' income accounted for by the HMIS

Reference

Volume 1 – Part V, section 3.2.3

Sources of information

- Accounting system of providers authorized by the HMIS
- Accounting tools of the HMIS
- Claims listings by provider (Table 8)
- Claims register

Method of calculation

This indicator is relevant if the HMIS operates a third-party payment system. The objective is to determine the financial impact of the HMIS on the total income of a given provider (or all providers).

For each provider (or all providers) and for a particular period, the following data is required:

- **X** = *Total amount of payments made by the HMIS to the provider.*
- **Y** = *Income received by the provider in the form of co-payments made by HMIS beneficiaries*. This information must be obtained from the provider's accounting system.
- **Z** = *Total income of providers for the relevant period*. This information must be obtained from the provider.

The indicator is calculated using the following formula:

$$I.2 = \frac{X + Y}{Z} \times 100$$

I.3. Population coverage rate

Reference

Volume 1 – Part V, section 3.3.1

Sources of information

- Management and monitoring tools relating to HMIS beneficiaries and to the population of the scheme's area of operations (Tables 3 and 4)
- Insured, premium and membership fee register
- Insured and premium file
- List of beneficiaries (or those excluded)
- Socio-demographic surveys carried out at the local level

Method of calculation

The population coverage ratio is calculated in the same way as the penetration rate (M.5), i.e. by reference to the total population of the area of operations and not the target population (as the denominator). This indicator measures beneficiaries' share of the total population of the area of operations of the HMIS.

$$I.3 = \frac{Beneficiaries_{Year\ N}}{Population\ of\ area_{Year\ N}} \times 100$$

Example

This example uses the same data as that used for the construction of the population penetration rate (M.5) of the Sucura HMIS:

	Year N–2	Year N–1	Year N
Total number of beneficiaries	948	1 529	1 705
Target population	10 000	10 200	10 300
Total population of the area	150 000	152 000	153 000
Penetration rate	9.5%	15.0%	16.6%
Population coverage ratio	0.6%	1.0%	1.1%

Analysis note. This example shows that despite a penetration rate of 16.6 per cent, the influence of the HMIS is very low in terms of the general population coverage (1.1 per cent).

I.4. Breakdown of beneficiaries by category

Reference

Volume 1 – Part V, section 3.3.1

Sources of information

- Insured, premium and membership fee register
- Insured and premium file
- Socio-demographic surveys carried out at the local level
- Surveys of specific households providing information by category

Method of calculation

This indicator measures and compares the relative proportion accounted for by certain categories of individuals with respect to all beneficiaries, on the one hand, and the population of the area of operations, on the other.

The table below shows one way of breaking down the beneficiaries and the population of the area of operations into categories. Other categories may be used, for example, those based on income, distance from home to the health centre (or HMIS), or occupation.

	Population of the area of operations		HMIS beneficiaries		Differences by category
	Number	Breakdown %	Number	Breakdown %	%
Total					
Male					
Female					
0-5 years					
5-15 years					
15-45 years					
45 years and over					

Example

The following table provides an example of a comparative breakdown of the beneficiaries of the Sucura HMIS and the members of the population of its area of operations into categories based on age and gender.

	Population of the area of operations A		HMIS beneficiaries B		Differences by category B – A
	Number	Breakdown %	Number	Breakdown %	%
Total	**153 000**	**100**	**1 705**	**100**	**–**
Male	75 000	49	887	52	+3
Female	78 000	51	818	48	-3
0-5 years	15 300	10	188	11	+1
5-15 years	38 250	25	409	24	-1
15-45 years	68 850	45	682	40	-5
45 years and over	30 600	20	426	25	+5

Analysis note. Depending on the category selected, variances between beneficiaries and members of the population of the area of operations are relatively low. However, it should be noted that the over-45 category is over-represented among beneficiaries.

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