



# *Insurance Management Information System for the new Community Health Fund structure*

## *Newsletter 1 Support for relative pricing*

Version 2

Health Promotion and System Strengthening Project  
Dodoma, Tanzania  
May 2016



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## Abbreviations

CHF Community Health Fund

IMIS Insurance Management System

TZS Tanzanian Shilling

# 1 Introduction

The purpose of this newsletter is to provide information to users on functionality of IMIS relating to relative pricing of health care and remind them on newly available features. This version 2 of the newsletter replaces the version 1 completely. The version 2 reflects changes of logic of running batches implemented in IMIS since June 1, 2016.

Relative pricing supported by IMIS allows determining of final price according to the disposable revenue and the amount of claimed services. The purpose of relative pricing is protect CHF schemes from deficits that can be occurred if prices of health services/medical items are set up too high with respect to the revenue collected and the volume of claimed services. It is an objective of this newsletter to explain how IMIS should be used with respect to the functionality related to relative pricing.

Generally, prices for health services and medical items are entered in the register of services and the register of medical items in IMIS. Original nominal prices of services and medical items in these registers may be further modified in pricelists specifically for groups of health facilities or individual health facilities. These prices can be regarded by IMIS in two ways depending how services and/or medical items are covered by an insurance product. If a service/medical item is covered in a standard way, the corresponding prices are regarded as real prices of services/medical items that are actually paid to health care providers. However, if a service/medical item is covered in the mode of relative pricing then these prices are not considered as absolute prices in TZS but as prices expressed in some artificial currency unit called often as points or maybe as quasi TZS. These nominal prices convey only relationships among remuneration of individual services/ medical items and not about their absolute value for remuneration. The absolute value of the prices can be determined only after all (or nearly all<sup>1</sup>) claims for given period are processed and the substantial part of collected premiums is recorded in IMIS.

The functionality of IMIS associated with relative pricing has two major parts. The first part relates to parameters of relative pricing that are set while defining of insurance products. This functionality allows determination of what services/medical items are subjected for relative pricing, whether calculation of relative prices is done separately for health care provided in hospitals and for health care provided outside hospitals or irrespective in which sector health care was provided. Further, the shares of revenue used for calculation of relative prices in each sector are determined for given insurance product and for what calendar periods calculations are performed<sup>2</sup>.

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<sup>1</sup> Say 95 % or so depending what contingency would be for delayed claims

<sup>2</sup> It should be noted that current set up of CHF insurance products is such that all prices are considered as relative prices. Calculation of prices for CHF products is done quarterly for health care provided in hospitals and monthly outside hospitals (in dispensaries and health care centres)

The second part of the functionality relates to evaluation of claims. Claims with at least one service/medical item subjected to relative pricing can be finally evaluated only after so called index is calculated for the period to which a claim belongs<sup>3</sup>. The index expresses for given period the multiplication factor by which the nominal prices of services should be multiplied in order to get the final price in TZS. Calculations of indexes and final evaluation of claims with relative prices is done automatically in batches and a user needn't care specifically about it.

It is recommended that batches should be run in the order subsequently. It means that a batch should be run only after batches for previous calendar periods were run. It is not a strict requirement but it helps to keep matters in an order. The example in the following box illustrates the principle of relative pricing and a rationale for the rule formulated above.

Let's assume that a CHF scheme started January 1, 2014. Further, let's assume that the amount of allocated premiums was 5 million TZS for January 2014, 5 million TZS for February 2014 and 5 million TZS for March 2014. Let's also assume, that the corresponding insurance product assumes that 20 % of revenues will be used for given type of health care (e.g. non-hospital care) and that calculation of indexes (of relative prices) is done monthly.

Further, let's assume that the corresponding CHF office processed claims for non-hospital care provided in January 2014 (visits occurred in January 2014) in the amount of 0.2 million points in nominal prices (TZS for relative pricing are considered as points) in the period from January 1 to January 31, in the amount of 0.5 million points in nominal prices (TZS for relative pricing are considered as points) in the period from February 1 to February 28, 2014 and in the amount 1.5 million points from March 1, 2014 to March 30, 2014. Let's further suppose that claims for health care provided in February 2014 were processed in the amount 0.8 million points from February 1 to February 28 in the amount 2 million points from March 1 to March 31 and in the amount 1 million point from April 1 to April 30, 2014. Claims for health care provided in March 2014 were processed completely in the amount 5 million points in the period from April 1 to April 30, 2014 and claims for health care provided in April 2014 were processed completely in the period from May 1 to May 31, 2014

The following table summarizes it:

Provision of health care- columns / Processing of healthcare-rows	January 2014 (in millions)	February 2014 (in millions)	March 2014 (in millions)	April 2014 (in millions)
January 2014	0.2			
February 2014	0.5	0.8		
March 2014	1.5	2.0		
April 2014		1.0	5.0	

Let's suppose that the batch for January 2014 that is run on February 5, 2014. It calculates the index (in %) as  $5 \text{ million} * 0.2 / 0.2 \text{ million} = 500 \%$ . It means that 1 point is worth 5 TZS. So, the amount in the batch for January 2014 is  $0.2 \text{ million} * 500 \% = 1 \text{ million}$  that is to be paid to health facilities for January 2014.

Let's suppose that the batch for February 2014 that is run on March 5, 2014. It calculates the index (in %) as  $5 \text{ million} * 0.2 /$

<sup>3</sup> A claim belongs to a period according to when it was processed in IMIS. Processing means that entered, submitted and reviewed claims are designated as processed by clicking on the button Process in the form Claims->Review.

1.3 million = 76.9 % . It means that 1 point is worth 0.769 TZS for February 2014. So, the amount in the batch for February 2014 is 1.3 million \* 76.9 % = 1 million that is to be paid to health facilities for February 2014 again.

Let's suppose that the batch for March 2014 that is run on April 5, 2014. It calculates the index (in %) as 5 million\*0.2 / 3.5 million = 28.6 % . It means that 1 point is worth 0.286 TZS for March 2014. So, the amount in the batch for March 2014 is 3.5 million \* 28.6 % = 1 million that is to be paid to health facilities for March 2014 again.

Let's suppose that the batch for April 2014 that is run on May 5, 2014. It calculates the index (in %) as 5 million\*0.2 / 6 million = 16.7 % . It means that 1 point is worth 0.167 TZS for April 2014. So, the amount in the batch for April 2014 is 6 million \* 16.7 % = 1 million that is to be paid to health facilities for April 2014 again.

It can be seen that the amount of payment is within allocated premiums for each month now.

A batch can be run only once for given calendar period. The reason is that claims have to be evaluated with only one index for given period of time.

The following typographic conventions are used in the text:

**Labels** of fields for entering data or buttons in forms (screens) for clicking are in **bold**.

*Headings* of sections in the forms or names of applications are in *italics*.

## 2 How to set up IMIS for relative pricing?

Relative prices are determined according to disposable revenue from premiums and according to utilization of services/medical items. Such arrangement protects health insurance scheme from overrunning of disposable income. It depends on definition of an insurance product whether all or some covered services/medical items will be considered as with relative pricing. Price of a covered service can be regarded in one insurance product as the service with fixed (absolute) price, in another insurance product as the service with relative price. It is possible to define at the level of insurance product whether actual price for services with relative prices will be calculated on monthly, quarterly or yearly basis and what portion of income from premiums should be spent each month (quarter, year). It is also possible to create instead of one "pot" for all services with relative prices within an insurance product also two "pots" separately for services provided by dispensaries and health centres and for services provided by hospitals. The parameters for calculation of relative prices can be defined within the definition of the corresponding insurance product in the following way.

This procedure can be performed only by a user with the role *CHF Administrator*.

1. Select **Administration-> Products**. The following form appears:

**Select Criteria**

Products

Product Code:  Product Name:  District:

Date From:  Date To:

☐ Historical

**14 Products Found**

PRODUCT CODE	PRODUCT NAME	DISTRICT	DATE FROM	DATE TO	NO. OF MEMBERS	LUMP SUM	PREMIUM ADULT	PREMIUM CHILD	INSURANCE PERIOD	GRACE PERIOD	VALID FROM	VALID TO
2003PS	Primary and Secondary care	Dodoma	01/07/2012	01/07/2017	6	10,000.00	2,000.00	2,000.00	12	0	18/11/2015	
2003PSL	CHF-Legacy	Dodoma	01/04/2012	30/12/2013	6	5,000.00	0.00	0.00	12	0	06/02/2015	
3014PS	Primary and Secondary care	Kondoa	01/07/2012	01/07/2017	6	13,000.00	2,500.00	2,500.00	12	0	14/04/2014	
3014PSL	CHF-Legacy	Kondoa	01/04/2012	30/12/2013	6	5,000.00	0.00	0.00	12	0	06/02/2015	
3086PS	Primary and Secondary care	Kongwa	01/07/2012	01/07/2017	6	10,000.00	2,000.00	2,000.00	12	0	14/04/2014	
3086PSL	CHF-Legacy	Kongwa	01/04/2012	30/12/2013	6	5,000.00	0.00	0.00	12	0	06/02/2015	
3101PS	Primary and Secondary care	Bahi	01/07/2012	01/07/2017	6	10,000.00	2,000.00	2,000.00	12	1	23/11/2015	
3101PSL	CHF-Legacy	Bahi	01/04/2012	30/12/2013	6	5,000.00	0.00	0.00	12	0	06/02/2015	
3102PS	Primary and secondary care	Chamwino	01/07/2012	01/07/2017	6	10,000.00	2,000.00	2,000.00	12	0	14/04/2014	
3102PSL	CHF-Legacy	Chamwino	01/04/2012	30/12/2013	6	5,000.00	0.00	0.00	12	0	06/02/2015	
3109PS	Primary and secondary care	Chemba	01/07/2012	01/07/2017	6	13,000.00	2,500.00	2,500.00	12	0	14/04/2014	
3109PSL	CHF-Legacy	Chemba	01/04/2012	30/12/2013	6	5,000.00	0.00	0.00	12	0	06/02/2015	
3115PS	Primary and Secondary care	Mpwapwa	01/07/2012	01/07/2017	6	10,000.00	2,000.00	2,000.00	12	0	14/04/2014	
3115PSL	CHF-Legacy	Mpwapwa	01/04/2012	30/12/2013	6	5,000.00	0.00	0.00	12	0	06/02/2015	

**Figure 1 Form for searching of insurance products**

- Click on **Add** or select an insurance product and click on **Edit** depending whether you create a new insurance product or you modify an old one. The following form appears (the places of interest highlighted in yellow-see Figure 2):

**Insurance Product details**

☐ Check All

Product Code:  Product Name:  District:

Date From:  Date To:

Conversion:

Lump Sum:

No. of Members:

Premium Adult:

Premium Child:

Insurance Period:

Grace Period:

Treatment:  Insuree:  Policy:

Distribution:  Period:  Percent:

**Figure 2 Form for the definition of an insurance product**

3. Mark medical services and medical items in the boxes in the right upper corner that are covered by given insurance product. If a medical service or a medical item should be regarded as an item with a relative price then enter **R** (Relative price) in the column **Origin** in the corresponding rows.

Indicate in the set of fields **Distribution** for which segments of covered health care relative prices should be calculated – for the whole covered health care or separately for hospital and/or non-hospital care. By selecting period of calculation (monthly, quarterly, yearly) in a field you indicate firstly that relative prices will be used in the corresponding sector and secondly what calendar period will be used in calculations. Depending on the selected period one of the following input tables appears:

Period	Percent
1	0.00
2	0.00
3	0.00
4	0.00
5	0.00
6	0.00
7	0.00
8	0.00
9	0.00
10	0.00
11	0.00
12	0.00

Period	Percent
1	0.00
2	0.00
3	0.00
4	0.00

Period	Percent
1	0.00

**Figure 3 Forms for defining of the share of revenue for relative pricing**

4. Enter to each field an appropriate percentage of premiums to be used for calculation of indexes in a corresponding calendar period (see Figure 3). It means, for example, that in case of the distribution **monthly** we put in each slot percentage of allocated premiums of given insurance product that are allocated to the corresponding month and that is to be used for calculation of relative prices. Click on **OK**. Generally, the percentage should be less than 100 % (or the sum of percentages for hospital and non-hospital care if we use separate calculation of relative prices for these sectors) as we need some portion of revenue for coverage of administration costs and it is a good practice to leave some percentage for reserves. The given percentages may differ month to month or quarter to quarter depending on seasonal fluctuations of a need for health care.



- The entered distributions are displayed in the bottom part of the form (see Figure 4). Click on **Save** to add or to modify the insurance product.

Insurance Product details

Product Code: 2003PS

Product Name: Primary and Secondary

District: Dodoma

Date From: 01/07/2012

Date To: 01/07/2017

Conversion: Click button to loa

Lump Sum: 10,000.00

No. Of Members: 6

Premium Adult: 2,000.00

Premium Child: 2,000.00

Insurance Period: 12

Grace Period: 0

Deductible:

Ceiling:

Treatment:

Insuree:

Policy:

Distribution: NONE

Medical Services

CODE	NAME	TYPE	LEVEL	PRICE	LIMIT	ORIG
G1	DEN Intermaxillary Fixation	Curative	Simple Service	42000.00	C	R
G10	DEN Open Reduction Zygomatic Arch	Curative	Simple Service	42000.00	C	R
G100	SUR Burst Abdomen	Curative	Simple Service	42000.00	C	R
G101	SUR Cholecystectomy	Curative	Simple Service	42000.00	C	R
G102	SUR Colonostomy Closure - Laparotomy	Curative	Simple Service	42000.00	C	R

Medical Items

CODE	NAME	TYPE	PACKAGE
0001	ACETYLSALICYLIC ACID (ASPIRIN) TABS 300MG	Drug	TABLETS
0002	ADRENALINE 1ML INJ 1MG/ML	Drug	VIALS
0003	AIRWAY GUEDEL RUBBER CHILD SIZE 67 MM	Drug	10PIECES
0004	AIRWAY GUEDEL RUBBER INFANT SIZE 54 MM	Drug	10PIECES
0005	AIRWAY GUEDEL RUBBER SMALL ADULT SIZE 82 MM	Drug	10PIECES

Account Code(Remuneration): 2003PS

Account Code(Premium): 2003PS

Deductible (Hospital) Ceiling:

Deductible (Non-Hospital) Ceiling:

Quarterly

Period	Percent
1	21.00%
2	21.00%
3	21.00%
4	21.00%

Monthly

Period	Percent
1	49.00%
2	49.00%
3	49.00%
4	49.00%

Save Cancel

**Figure 4** Form for insurance products with entered shares of revenue used for calculation of relative prices

### 3 Calculation of relative prices

Calculation of relative prices is integrated into running of batches of claims used for generating of data on claims for an accounting system. If at least one insurance product in given district uses relative prices it is necessary to calculate regularly indexes for such relative prices. An index says how much higher (the index is higher than 100 %) or lower (the index is lower than 100 %) is the final price in comparison to the nominal price of services/medical items for which relative prices are used. Indexes are calculated as ratio between available revenue from insurance premiums and the sum of nominal prices (that are considered as relative prices) for given insurance product. Also seasonal distribution of income from premiums according to the definition of the corresponding insurance product is taken into



account. It is recommended that calculation of indexes for relative prices is done regularly (monthly).

Calculation of indexes is integrated with creation of reports for an accounting system for remuneration of health facilities. Creating of so called batches of claims for a given month gathers together all claims that were processed in given month (they are in the status **Processed** or in the status **Valuated** if they don't contain services and/or medical items with relative pricing). Claims in the status **Processed** are as part of running of batches finally evaluated (they move from the state **Processed** into the state **Valuated**). If some claims rely on relative prices calculated quarterly, they are held in the status **Processed** the first two months in given quarter until a batch for the last month in the quarter is run. Finally, they are included in the batch for the quarter. The process of running of batches (and calculating of indexes) follows.

This procedure can be performed only by a user with the role *CHF Accountant*. This functionality is available only for on-line clients.

1. Select **Claims-> Batch Run**. The following form appears:

**Figure 5 Form for running of batches of claims**

2. Select **District** for calculation of indexes in the section *Batch Processing*. The values in the fields **Month** and **Year** offer the next calendar month following the calendar month for which calculation has been done last. Click on **Process**. Calculation will be done for all insurance products belonging to given district. If the specified month is an end of a quarter also quarterly calculations of relative prices will be done if specified in the distribution field of an insurance product<sup>4</sup>. If the specified month is an end of a year also yearly calculations of relative prices will be done if specified in the distribution field of an insurance product.
3. A prompt is displayed whether you really want to start calculation of indexes. It is important to have in mind that for given calendar month and given district indexes can be calculated only once. A batch of claims is created for given month, for each insurance product belonging to given district and for each period (month, quarter if the specified month is also the last month of a quarter, year, if the specified month is also the last month of a year).
4. You can look at results of calculation of indexes (see Figure 6-column Index is given in %) by specifying selection criteria in the section *Filter*. You can select indexes according to frequency of calculation (**Type**), for which calendar period (**Year, Period**), for which

**Batch Processing**

District: -- Select a District -- Month: --Month-- Year: --Year-- Process

**Filter**

Type: Monthly Year: 2015 Period: --Period-- District: Dodoma Product: --Select Product-- HF Level: -- Select Level -- Filter

**Display**

YEAR	PERIOD	PRODUCT	HF LEVEL	CALCULATED DATE	INDEX
2015	March	Primary and Secondary care	Non Hospital	09/04/2015	503.21
2015	March	CHF-Legacy	Non Hospital	09/04/2015	100.00
2015	February	Primary and Secondary care	Non Hospital	09/04/2015	192.11
2015	February	CHF-Legacy	Non Hospital	09/04/2015	100.00
2015	January	Primary and Secondary care	Non Hospital	09/04/2015	736.98
2015	January	CHF-Legacy	Non Hospital	09/04/2015	100.00

**Filter for Accounts**

Group By: ☐ Health Facility ☒ Product ☐ Show Claims

District: Dodoma Product: --Select Product-- HF Code: -- Select HF Code -- Level: Hospital ☐ Show all

Batch: 2015-March Start: / / End: / / Preview

Result filtered successfully

**District**, for which insurance **Product** and for which segment of health care **HF Level**. It should be noted that the index may be 100 % if there are no claims in the status *Processed* for its calculating. The index may be also 0% if no revenue is allocated for given period.

**Figure 6 List of generated batches (in the section *Filter/Display*)**

<sup>4</sup> Currently quarterly calculations are used for health care provided in hospitals within the CHF schemes.

5. It is also possible to examine which claims came into a specific batch<sup>5</sup>. It is sufficient to

**Figure 7 Exploring claims in a batch.**

what amount in nominal prices was claimed by a health facility (**Initial Amt**), what was approved (again in nominal prices) during processing of the claim (**Final Amt**) and what was the final amount after application of corresponding indexes (**Covered**).

Claim Code	Date	Claim Admin	Date From	Date To	CHFID	Insuree	Product	Initial Amt	Final Amt	Covered
<b>Health Facility: 00948 - Dodoma Account Code:</b>										
128703	13/03/2015	Regional Dodoma Hosp Dodoma	30/01/2015	30/01/2015	002385154	Sangua Bertina Martin	2003PS-Primary and Secondary care	3,225	3,225	962,651.55
128713	13/03/2015	Regional Dodoma Hosp Dodoma	27/01/2015	27/01/2015	007181871	Ilevu Alimi Mpani	2003PS-Primary and Secondary care	2,160	2,160	240,441.49
128731	13/03/2015	Regional Dodoma Hosp Dodoma	09/02/2015	09/02/2015	002240805	Mwongela Salome Joseph	2003PS-Primary and Secondary care	3,460	3,460	304,647.78
128732	13/03/2015	Regional Dodoma Hosp Dodoma	11/02/2015	11/02/2015	002252526	Galamtologia Joseph Mgwala	2003PS-Primary and Secondary care	7,250	7,250	616,380.39
128738	13/03/2015	Regional Dodoma Hosp Dodoma	12/02/2015	12/02/2015	002209653	Malecela Plus Yohana	2003PS-Primary and Secondary care	7,150	7,150	452,543.64
128735	13/03/2015	Mtenga Janeth Muthayo	11/02/2015	11/02/2015	002499943	Mihori James Mulla	2003PS-Primary and Secondary care	5,785	5,785	422,875.91
128757	13/03/2015	Regional Dodoma Hosp Dodoma	25/02/2015	25/02/2015	002252526	Galamtologia Joseph Mgwala	2003PS-Primary and Secondary care	2,190	2,190	481,768.58
128766	13/03/2015	Regional Dodoma Hosp Dodoma	27/02/2015	27/02/2015	002209561	Balagu Christina Chipantha	2003PS-Primary and Secondary care	11,550	11,550	583,170.24
128797	13/03/2015	Regional Dodoma Hosp Dodoma	05/03/2015	05/03/2015	002182073	Moselem Zaida Ally	2003PS-Primary and Secondary care	2,155	2,155	300,883.97
<b>Total For 00948:</b>								<b>44,925</b>	<b>44,925</b>	<b>4,365,363.55</b>
<b>Health Facility: 00949 - Makole Urban Account Code:</b>										
012503	15/01/2015	Mtenga Janeth Muthayo	12/07/2014	12/07/2014	002415722	Chisulumi Wema Muhando	2003PS-Primary and Secondary care	2,170	2,170	14,593
012510	15/01/2015	Mtenga Janeth Muthayo	14/07/2014	14/07/2014	002022731	Malika Marthair Pascal	2003PS-Primary and Secondary care	3,075	3,075	14,593
012515	15/01/2015	Mtenga Janeth Muthayo	15/07/2014	15/07/2014	002020130	Mwaja Maria Timotheo	2003PS-Primary and Secondary care	5,110	5,110	14,593

**Figure 8 Report on claims included in a batch**

<sup>5</sup> It is a new feature implemented in IMIS in October 2015.

## 4 What not forget?

- **Notify desired services/medical items as relatively priced in the definition of the corresponding insurance products (by putting R in the column *Origin*)**
- **Specify the period of calculation and the share of revenue used for calculation of relative prices in field *Distribution* in the definition of the insured product**
- **Mind that the sum of the shares of revenue used for calculation of relative prices for the hospital and non-hospital sector cannot exceed 100 % in any month (rather should be well below 100 %)**
- **Check which claims come into separate batches**

## 5 How to arrange a transition from the previous way of calculation of relative prices?

Let's suppose that claims for health care provided up to the end of April 2016 are processed manually (outside IMIS) and paid fully to health facilities and that there is an intention to use IMIS fully for processing of claims for health care provided from May 1, 2016 and later on. Some claims for health care provided up to the end of April 2016 are submitted to IMIS occasionally also during May 2016. Let's suppose that the new way of calculation of relative prices is deployed in IMIS on June 1, 2016 and by the end May 2016 IMIS uses method described in the version 1 of this newsletter.

The recommendation how to proceed is in the transitional period is as follows:

1. Claims for health care provided in May 2016 can be submitted to IMIS anytime during May 2016 and later. However, these claims shouldn't be processed<sup>6</sup> before June 1, 2016. It can be easily ensured by proper selection of the search criteria (*Visit (to) Date From-To*) in the form *Claim->Review* when processing claims up to May 31, 2016
2. After June 1, 2016 start processing of claims for health care provided in May, 2016 and later. Set the search criterion *Visit (to) Date from*<sup>7</sup> to May 1, 2016 in the form *Claim->Review* in order to ensure that only claims for health care provided from May 1, 2016 are processed. Process claims as they come.

<sup>6</sup> It means the button Process shouldn't be clicked on for them,

<sup>7</sup> This search criterion could be used only for some time in order to ensure that claim before May 1, 2016 are not paid twice-once in manual process and second time by IMIS within a batch.

3. Shortly after the end of June 2016, run the batch for June 2016. All claims processed during June 2016 (for health care provided in May 2016 and later) will be included.
4. Proceed in the same way in July 2016 and each month later on.

Remark: IMIS will use allocated premiums for June 2016 while running the batch for June 2016. Allocated premium for May 2016 will be kept as a reserve for CHF offices unless this amount will be utilized in manual paying of claims for health care up to the end of April 2016.