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Work Package 6:
Approaches for Cost Assessment & Price Setting in Practice

FRANCE

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SECTION I: DESCRIPTIVE SECTION

I. DEFINITION OF PRICES AND TARIFFS

I.I. Curative care services (HC.1) I.I.II.

I.I.II. *IN-PATIENT CURATIVE CARE*

We start by recalling some principles of hospital funding before presenting the tools and information methods used to calculate tariffs.

Hospital funding in France is based on two main systems: the first system is the per-case payment or case-mix-based payment system – so-called '*tarification à l'activité* (T2A)'- and the second focuses on 'global budgets'. However, a macro level mechanism of regulation also comes into play for both systems via health insurance spending objectives.

The case-mix-based payment system has been applied to all activities carried out at medical, surgical and obstetric (MSO) wards at private-for-profit hospitals since 1 March 2005, and previously to about 25% of these activities at public and private-non-for-profit hospitals[1] since 1 January 2004.

It might seem rather surprising that this mode of payment based on hospitals' current activity should require a large-scale reform, since it looks such an obvious way of handling things, and this system has in fact always been applied to private-for profit hospitals [1]. At these hospitals, payment has mainly been based so far on detailed tariffs including per diem prices (covering the cost of accommodation , nursing care, drugs and minor devices) - and lump sums covering the running costs associated with the use of technical equipment. Doctors working at these hospitals have been paid directly for their hospital activities on a separate, fee-for-service basis.

The new system of payment will therefore be less of a change for private hospitals than for public hospitals, which have depended so far on global budgets which were mainly fixed on a historical basis, although these budgets have also depended, since 1998, on both specific hospital costs and an adjustment based on a regional case-mix index giving the average cost per case [2].

The two previous payment systems have generated their own limitations, especially due to the existence of a huge range of hospital costs arising at each *'Groupe Homogène de Malades'* (GHM), the French equivalent of DRG. The costs differ widely between hospitals - between public hospitals, between private for-profit hospitals and between public and private ones – mainly due to regional disparities rather than for economic reasons.

The aims of the hospital payment reform - T2A - are therefore as follows:

- Linking payment to actual hospital activity; this creates incentives for improving management tools, thus making for greater economic efficiency. Managers and medical teams are thus encouraged to analyse case-mix, medical practices and cost structure and to adapt the use of resources to the revenue generated by their activity.

[1] In the rest of this paper, the term 'public hospitals" will be used to refer to both public and non-for-profit hospitals participating into the French public hospital service.. The per-case payment system for public hospitals started with 10% of the MSO activities in 2004.

- Eventually merging (in 2012) public and private for-profit hospitals' payment systems. This effort towards harmonisation is supposed to make competition more equitable between the two sectors. The main effect of this effort will be that specialist medical fields will benefit from the economies of scale achieved [1, 2].

- Treating hospitals more equitably by introducing more homogenous nationally defined tariffs ensuring a better balance between resources and activity.

Although the previous public hospital funding system did not entirely ignore the nature of hospital activities, the way these activities were taken into account differed significantly from the approach involved in the latest method. Up to 2004, public hospitals received an overall budget based on their growth rate, which was calculated using an activity index – *Indice synthétique d'activité* ISA-. Payment used to be the means enabling hospitals to perform activities, whereas hospitals are now being funded retrospectively on the basis of their actual activities. The whole approach to hospital payment has therefore been reversed: it is no longer based on past expenditure, but on the hospital activity. Moreover hospitals will have to bill the health insurance funds to be refunded after patients' stays [4].

Currently, the principles of the per-case payment system are as follows:

- it applies to hospital activities in medicine, surgery and obstetrics (MS0), thus excluding at present psychiatry, rehabilitation, long term care, etc.
- it is being gradually implemented with many transitional adjustments (from 2004 to 2012, see below);
- it is subject to an overall price-volume regulation, i.e. if the overall hospital activity increases in year n, the national tariffs will be decreased in year n+1 to ensure that the overall hospital targeted budget will not be exceeded [3,6]. ;
- it involves convergent tariff scales between public and private-for-profit sectors as well as within each sector [3].

Tariffs are subject to a macro economic system of regulation via 'health insurance spending objectives'.

Hospital expenditure reimbursed by health insurance funds still has to comply with the French national health insurance spending objective (ONDAM). However, starting in 1 January 2005[2], the government will split this overall target into sub-targets for hospitals, partly depending the type of activity, regardless of their status (public or private-for-profit) and partly depending on the hospital status [5]. This means that there will be:

- two common 'targets'(i.e. 75% of the total expenditure) for both private and public sectors:
    - an 'overall spending target' for medicine, surgery, obstetrics and ondotology (ODMCO), as well as home hospitalisation and alternatives to in-patient dialysis;
    - a national sum, or 'envelope' for financing hospitals' participation in general welfare operations and medical care activities involving contracts with regional hospital agencies - '*Missions d'intérêt general et d'aide à la contractualisation* (MIGAC)' -

- and differentiated sub-targets keyed to the activities of psychiatric and, rehabilitation wards and long-term care units at public hospitals (ODAM) and private-for-profit services in the same areas, which will come under the national quantified objective (OQN).

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[2] In application of the Social Security Act of December 18th 2003 *(Loi de financement de la sécurité sociale, LFSS pour 2004*).

The distribution of the budget is mainly carried out on the basis of a simplified hospital cost accounting system (‘*retraitements comptables’*)[3]. ‘National objectives’ are expressed in terms of statutory health insurance expenditure, which is not equivalent to hospital expenditure. The latter includes both co - insurance (‘le *ticket modérateur*’) and the per diem hospital lump sum payment. Consequently, to determine the tariff basis, it is necessary to translate these objectives into hospital expenditure. A calculated multiplier applied for this purpose is based on the previous year’s aggregates (e.g. 2003 and 2004). Tariffs are then calculated in order to fit the ‘objectives’. If this principle is respected, an oversupply of hospital activity in year n will automatically lead to a decrease in the tariffs in year n+1 [6].

Modes of hospital funding: the ‘T2A model’ and tariff setting

The case-mix based payment system is being implemented progressively in the public sector. The part of the MSO activities paid for by the case-mix instrument is increasing gradually each year: 10% in 2004, 25% in 2005, 50% in 2008 and so on. The Ministry of Health will decide the pace of the transition taking into account the problems encountered during the implementation process. It has been announced that by 2012 100% of the concerned hospital activities will be paid by the new system [4].In the meantime, the activities not funded by the case-mix system are being paid for by ‘global budget’- *dotation annuelle complémentaire* DAC -.

Private-for-profit hospitals on the other hand have been funded entirely by the new case-mix-based payment system since 1 March 2005. However, a transition period is allowed where “national prices” will be adjusted for each provider taking into account its own historical costs/prices. The objective is to harmonise the tariffs for all the providers before 2012 [4]..

There is still a great deal of uncertainty, which could complicate the analysis of tariffs and cost accounting systems.

<u>1. The French case-mix-based payment model (called T2A model)</u>

The current reform applies to MSO activities alone, this means all medical, surgical and obstetrical activities, whatever their modalities, i.e. in-patient and acute out-patient care (including home hospitalisation services and alternatives to in-patient dialysis).

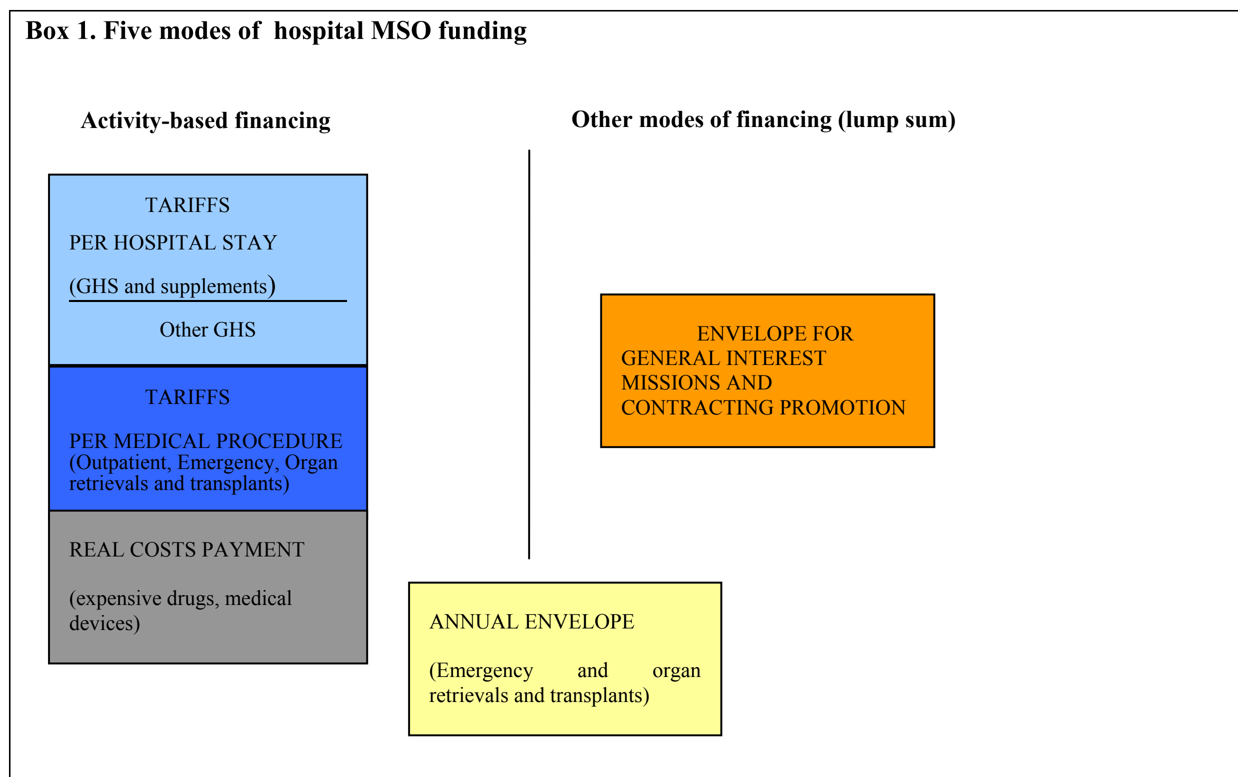
The system encompasses five hospital funding modes.

As can be seen from Box 1, in the field of MSO, activity-based funding may depend on <u>the activity under consideration</u> [5,6]:

- ‘Hospital stays’ are funded on the basis of the ‘GHS’ tariff (there are 700 GHS including palliative care which has been included since 2005) and in some cases such as neonatology, emergency care/intensive care, continuous care, and stays longer than the limit fixed by the ATIH, daily supplements are added to the GHS. There are also some special cases of GHS (‘*GHS particuliers’*) where the interventions, although they are described in the French patient classification tool (‘*Programme de médicalisation des systèmes d’information* – PMSI), are actually funded via specific national tariffs. This applies to activities such as abortion (5 tariffs), radiotherapy and dialysis (11 tariffs).

[3] See ANNEX II Restating the accounts

Box 1. Five modes of hospital MSO funding



Source: Adapted from Michelot X, 2005 [3]

- In the case of activities which are not classified by the case-mix sytem (or GHS), other sets of tariffs are applied.
  - For outpatients attending emergency units: a national tariff per episode (ATU),
  - Home hospitalisation: Homogenous groups of tariffs (GHT)[4] (see below),
  - Organ retrieval: a national tariff (PO),
  - Outpatient care (including medical procedures such as imaging, lab tests, and consultations: payment based on nomenclature and tariffs applicable to ambulatory care, i.e. the '*classification commune des actes médicaux*'- CCAM. .

- Expensive drugs and medical devices -' *Médicaments et dispositifs médicaux*' (DMI) - are covered on a real cost basis in addition to GHS. Any of those DMI have to be defined by the National union of health insurance funds (UNCAM). These are funded on the basis of the reference price ('tarif de responsabilité'), which corresponds either to the price declared by the laboratory or, if this price is questioned, to the price fixed and published by the Committee for Medical products (CEPS)[5] (see below).

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[4] Bill of 31 décembre 2004 on medical data collection and processing at public and private health establishments running home hospitalisation activities and the disclosure of this information. '*Arrêté relatif au recueil et au traitement des données d'activité médicale des établissements de santé publics ou privés ayant une activité d'hospitalisation à domicile et à la transmission d'information issue de ces traitements'.*

[5] Direction de l'hospitalisation et de l'organisation des soins (DHOS), circular N° DHOS-F-O/DSS-1A :2005.

The other two modes of funding (box 1) apply to the following:

- Emergency interventions, organ retrievals and transplants which benefit from a twofold funding system based on the tariffs mentioned above and on annual lump sums. The lump sum for emergency interventions, known as the FAU (‘*forfait annuel urgence*’) is set at national level and is supposed to partly cover the fixed costs. The annual lump sum allotted for organ retrievals (CPO:‘*Coordination prélèvements d’organes’*) and for organ transplants (FAG: ‘*forfait annuel greffes*’), which is also defined at national level, is intended to cover the hospital coordination costs involved in making retrievals and transplants.

- Public welfare missions and contractual activities are part of a specific funding system which does not come under the activity-based system of payment. This system involves an ‘envelope’ named MIGAC (‘*Missions d’intérêt général et d’aide à la contractualisation*’). The activities targeted here are defined by ministerial order:
  - Teaching, research, recourse and innovation – MERRI ‘*Missions d’enseignement de recherche, de reference et d’innovation*’-
  - Other public welfare missions such as district emergency regulation centres, sperm and ovocyte banks, paramedical schools.
  - Contractual activities, i.e. hospital activities promoted by contract with regional hospital agencies (ARH)

2. Tariff setting

In this report, we present the tariff arrangements made in France for public hospitals and private-for-profit hospitals separately, although the situation is expected to change during the next few years. Currently tariffs for public and private-non-for-profit hospitals still differ from those applied to private-for-profit ones.

Setting tariffs for public hospitals

We will start by defining the tariffs per hospital stay called ‘*Groupes homogène de séjours’* (GHS) (based on a DRG-type system of classification) and the process whereby these ‘GHS’ tariffs are set.

As mentioned above, the fact that hospital stays have been partly refunded on the DRG basis[6] since the late 1990s, can be said to be a half-hearted attempt to introduce case-mix adjustment prospective budgets. Some basic tools for measuring productivity and comparing costs between hospitals have yet existed. The case-mix-payment model (T2A) will continue to make considerable use of these instruments and those of the cost accounting system[7]. The new situation the T2A reform will eventually bring about rests on the fact that the per-case payment system has to be applied to the overall hospital activity carried out in the framework of PMSI and that it will be applied in real time rather than after a two-year time lag [1].

The basic instruments used for the prospective per-case payment system are as follows:

- The ‘*Groupes homogènes de malades’* - GHM- system of classification was first developed on top of the third version of the HCFA-DRG system of classification, before being enriched with parts of the AP-DRG system of classification. It is now in its 9th version.
- The French patients’ classification tool – PMSI- is based on the GHM system of classification, which includes 700 GHM considering comorbidities). The *Agence technique de l’information sur l’hospitalisation* (ATIH), a public agency, managed the PMSI.
- The ICD-10-CM is used to code diagnoses.

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[6] The idea of financing health care on the basis of DRG started in the 1980s.

[7] . ‘*Groupes homogènes de malades’* - GHM- express hospital activity and hospital cost accounting defines principles and rules to assign costs to hospital stays.

- The *classification commune des actes médicaux* (CCAM version 1) is used to code procedures. The CCAM is also being used to determine tariffs (e.g. at public hospitals, it is used to set the rates charged for out patient care and to specify the reimbursement rates. CCAM is used as the general fee-schedule and can be said to be the positive list for private for-profit hospitals.

A tariff called the GHS is assigned to each GHM. This tariff is defined at national level and based on a two-stage process. First pre-tariffs are calculated and then the tariffs are set [7, 8].

Stage 1 Costs Calculation (also called pre-tariffs calculation)

In the first stage, the ATIH collects data per patient-stay including both medical information and exact cost statements. The framework in which the agency gathers and treats these data is called National cost study - *étude nationale des coûts* (ENC)[8]-. This tool, which is intended to provide a relative cost scale, is updated every year. At present, the ENC includes a sample of fifty-two public and private-non-for profit hospitals, using the same cost accounting model.

An average cost per GHM is also determined, however, from the ENC as follows:
The 52 hospitals provide both medical information and data on the resource consumption per patient's stay. Each stay has three cost components, i.e. medical, accommodation and logistics, and structure. Medical and similar expenses are associated exactly with patient stays; whereas the information available is not detailed enough to be able to specify the indirect costs, which are therefore stated less precisely. These costs per GHM are calculated in the form of full costs including both direct and indirect costs. The latter are allocated either per day, per episode, or per relative cost index - ICR as in the case of medical and technical procedures (see below: cost and consumption units).

For example, the 2004 National cost study, based on the information produced by the 52 hospitals, which included 3.2 million stays and sessions which were produced during the period 2001 and 2002, was used to set the 2005 GHS – tariffs.

Several procedures have been used to shift from crude costs to costs which can be used to set up the relative scale of GHM costs.

The first step consists in trimming the data.
The ATIH collects activity data from the hospitals included in the ENC, and the proportion of all stays discarded after quality control adjustments amounts to 3% of all the stays declared. In addition, a 'stay truncation' procedure is applied to the stays. The ATIH identifies a 'trim point' according to which the cost of the stays has to lie. The 'extreme stays' in terms of cost beyond the 'trim point' are then discarded according to the "Maximum Allowed Deviation?"- *méthode de l'écart maximum toléré* (EMT)-. 'Extreme stays' denote stays costing either more or less than the upper or lower bounds calculated as follows[9]:

Upper bound = exp[mean(LOG(FC)+std(LOG(FC)+percent95(LOG(CC))-median(LOG(FC))]

Lower bound = exp[mean(LOG(FC)-std(LOG(FC)+percent5(LOG(FC))-median(LOG(FC))]

FC = Full cost

[8] The ENC was introduced in 1992 in order to set up a national cost database per hospital stay. There were about forty hospitals, which were expected to be able to present quasi-exhaustive data collections (above 95%), to experiment with cost accounting and to have an IS department identifying the medical and technical procedures used and all the medical items consumed (blood, prosthesis and implants, drugs and medical devices, expensive drugs, etc.) as well as the outpatient services and procedures.

[9] This method is applied because the costs do not show a normal distribution.

The stays which are discarded amount to 1.7% of the total number of stays declared.

The second procedure used consists in applying the T2A model to the cost data collected on the year 2002.

This involves deducting from all the expenses those which are not included in the GHS- tariff, namely:

- The cost of expensive drugs and medical devices (DMI) (which are paid for in addition to the GHS-tariff),
- Dialysis, radiotherapy performed during hospitalisation (which are paid for in addition to the GHS-tariff),
- Further daily expenses for reanimation/intensive care, continuous care and neonatology,
- Teaching and research expenses, i.e.13% of the total budget from which the hospitals in question benefited in 2002.

Additional geographical indices are applied to the GHS-tariffs in Paris and the surrounding area, Corsica, and the French overseas territories.

Adjusting the cost data is the last step involved in setting the relative scale of costs per GHM. This step consists in adjusting the proportion of costs assigned per day by applying the ratio between the National average length of stay (ALS) and the sample ALS. This calculation is carried out per type of hospital. Five types of hospital are defined for this purpose:

- Hospitals producing less than 16,000 discharge summaries per year (excluding sessions)
- Hospitals producing more than 16,000 discharge summaries (excluding sessions),
- teaching hospitals – *Centre hospitalier universitaire* (CHU),
- Cancer treatment centres- *Centre de recherche et de lutte contre le cancer* (CRLCC),
- Private-non-for-profit hospitals participating in the French public hospital service, apart from cancer centres.

The first correction is carried out by substituting the national average length of stay for the sample average used in the following formula. The adjustment is based on 2004 PMSI data, and the ALS per GHM and per type of hospital are calculated by excluding all stays where the ALS exceeds the pre-defined statistical limits[10].:

The average cost for GHM i and hospital TYPE j is given by the following formula [8]:

$$C_{ij} = \frac{\sum_k Cdirect_{ijk}}{NBstays_{ij}} + ALSnat_{ij} \times \frac{\sum_k Clength_{ijk}}{\sum_k length_{ijk}}$$

$ALSnat_{ij}$: National average length of stay of the GHM i from TYPE j

Cdirectijk: direct cost of GHM i from TYPE j for a stay k

NBstaysij: number of stays for GHM i from TYPE j

Clengthij: costs assigned per day of stay

Lengthijk: length of stays for GHM i from TYPE j for a stay k

[10] The 'extreme' bounds of the length of stay (LS) are calculated using the Maximum allowed deviation (MAD) method (in French EMT) on the log of the LS. Calculation of ALS per GHM [7]:

- if ALS < 6 days, the upper bound for defining 'extremes' = MIN(15; bound EMT),

- for the other GHMs, the upper bound = Min (2.5∗ALS, bound EMT)

- the lower bound for defining 'low extremes' was calculated according to the formula : Min (7; ALS/2.5; mode-1) for ALS> 6 days, in 2004.

Hence the stays where LS is strictly greater than the upper bound or strictly lower than the lower bound are discarded.

The cost of GHM is then calculated in terms of the weighted means of adjusted costs per type of hospital.

Hence, the cost per GHM for GHM i by TYPE is:

$$C_i = \frac{\sum_j C_{ij} \times NBstays_{ij}}{\sum_j NBstays_{ij}}$$

$NBstays_{ij}$: Number of stays and sessions in the 2004 national database on GHM_i for $TYPE_j$

In this way, we obtain the relative scale of costs per GHM based on the adjusted costs (excluding structural overheads), which is also called the relative scale of pre-tariffs.

Stage 2 Tariff determination

The method used to set tariffs consists of three stages [7, 8]:

- determining the hospital tariff basis
- calculating the national theoretical envelope
- applying a conversion coefficient for defining tariffs.

1- The tariff basis depends mainly on the data collected using hospitals' simplified cost accounting data ('*données de retraitement comptable'*), which, on the basis of specific rules, can be used to allocate costs (included structural ones) to various activities or assignment centres – '*sections d'imputations*' SI- , such as MSO, Home Hospitalisation, Emergency and MIGAC, corresponding to activities funded via T2A[11]. The activities of these centres evolve according to the case-mix based payment model. This depends concomitantly on the list of the activities included within the MIGAC list which is authorized every year.

This first stage in the process is designed to identify the costs which are paid for via GHS-tariffs. The tariff basis of hospitals transmitted by the hospital Directorate –'*Direction de l'hospitalisation et de l'organisation des soins*' – DHOS-) to the ATIH, are obtained by deducting from the MSO[12] expenditure the activities which are not paid for on the basis of GHS- tariffs, i.e. :

- general welfare missions and contractual activities (known as MIGAC), emergency activities and organ retrievals and implants, expensive drugs and medical devices (DMI), outpatient consultations and procedures, abortions, paramedical schools, reanimation/intensive care, continuous care and neonatology: for the three latter cases only the part funded in the form of daily supplements.

Additional geographical indices are applied in some cases to the tariff basis, which includes structural costs.

[11] Two examples of SI not funded via the per-case payment system are rehabilitative care and psychiatry.

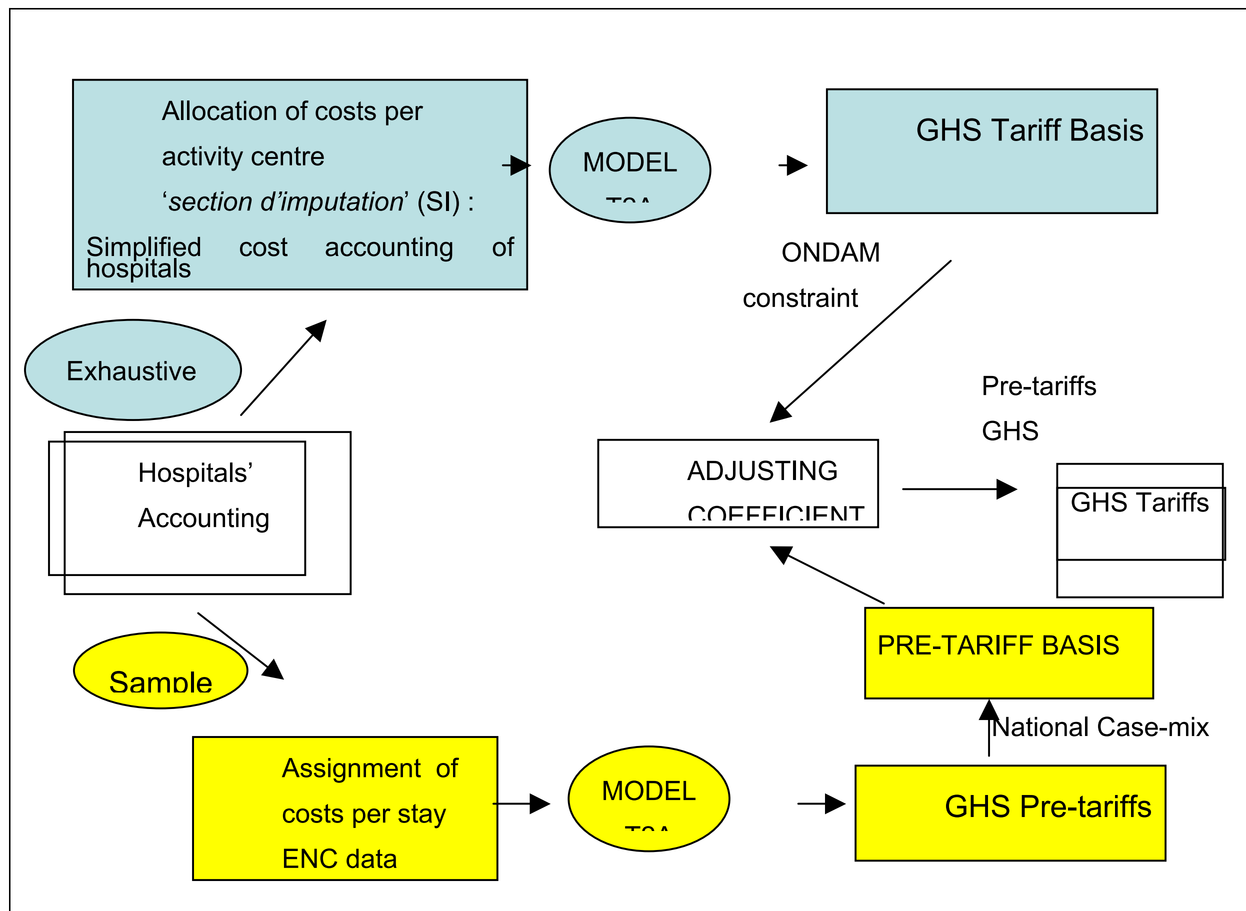
[12] MSO basis = hospital budget – (rehabilitative care budget+ psychiatry budget).

2- The national theoretical envelope is calculated by applying the pre-tariff scale to rate the hospitals' case-mix. An adjustment is then made by adding the rated cost of 'outliers'[13] and that of dialysis and radiotherapy performed during hospitalisation and paid for in addition to the GHS-tariffs

3- The application of a conversion coefficient for defining tariffs.
The ratio between these two envelopes gives a conversion coefficient which is systematically applied to the pre-tariffs and used to calculate the GHS tariffs.

The overall procedure used to determine pre-tariffs and GHS-tariffs is presented in Box 2 below.

Box 2 The procedure used to determine pre-tariffs and GHS-tariffs



As we mentioned above, public and private hospitals come under the 'umbrella' of a macro economic system of regulation via the common target set at national level for health insurance expenditure (ODMSO for MSO and ondotology). Nevertheless, the evolution of this ODMSO for MSO differs (slightly/ in some respects ?) from one sector to another.

The evolution of the public ODMSO depends on the following three criteria [6]:

- the financial margin available within the general context of the target ODMSO,

[13] 'Excess bed day high' – *séjours extremes hauts*- are rated at 75% of daily pre-tariffs. And 'excess short stays' – *séjours extremes bas*' are rated at 50% of pre-tariffs.

- the differential evolution of the sub targets set for the public and the private sectors, which takes into account the possibility that both of/ all these tariffs are intended to eventually converge,
- the estimated evolution of the overall volume of activity in the year for which the tariffs are calculated (if this is not taken into account, the overall target budget will be overstepped).

For instance, an increase of 0.27% is applied for the year 2005 year, in view of the financial margin available within the general context of the target ODMSO and the predicted activity trends, the effect of which will be an increase in the overall hospital resources [6].

The latter case is not in contradiction with the method of tariff calculation which includes the increase in activity volume actually observed in 2004. In year n+1, this eventually introduces a tariff correction focusing on the actual volumes for year n estimated in defining the tariff-basis

The other tariffs or modes of payment applied to specific activities and areas

1- Intensive care

As mentioned above, resuscitation care, intensive care and continuous care all benefit from additional daily supplements over and above the GHS-tariffs. The Regional hospital agencies (ARH) have to authorize hospitals to perform these activities. The rates applied as far as these supplements are concerned depend on the type of care unit and on the specific procedures carried out [6]

2- Emergency

Each hospital which has an emergency unit receives an annual lump sum which partly covers the fixed costs. The rules whereby this lump sum is calculated are defined at national level. A single tariff is applied up to a certain number of annual admissions and this sum is increased by a standard amount for the first block of 5,000 additional yearly admissions and then for each further block of 2,500 admissions.
In addition, a single national tariff is applied for each patient's episode in an emergency ward which is not followed by hospitalisation (the latter would involve the GHS billing procedure) [6].

3- Organ retrievals, and transplants

An annual lump sum is paid to cover the hospital coordination costs involved in making organ retrievals and transplants. These costs are mainly intended to cover the cost of the staff involved and cost of maintaining multidisciplinary teams who have to be permanently present in the case of transplants. The rules for setting this lump sum are defined at national level. The hospitals in which retrievals/transplants are performed are funded via national tariffs (Article L.162-22 of Social security code). There exist five different tariff levels for organ retrievals, and eight for organ transplants, depending on the nature of the authorization delivered by the Regional hospital agencies (ARH) and on the individual hospitals' registered patients [6].

4- Expensive drugs and implants (prostheses)

Some expensive drugs and implants do not come within the scope of the GHS- tariffs and are billed in addition to the GHS payments on the basis of hospitals' 'real costs', contrary to those drugs and implants which are included in the GHS-tariffs.
This additional reimbursement based on the price the hospitals pay takes place only if three conditions are fulfilled [3, 5,6]:

- if the cost of the drug or implant is particularly high,
- if the products in question introduce heterogeneity within the GHM costs and GHS-tariffs,
- if these drugs and implants have to be included on a list established by ministerial order and/or by the National union of health insurance funds (UNCAM) every year. For instance, in 2005, orthopaedic prostheses were added to the list of devices and the associated services/interventions (LPP). This list is commonly used for both private and public sectors.

The reimbursement of these drugs and implants comes under a twofold system of payment:

- A reference price (maximum price), which corresponds either to the price declared by the laboratory marketing the product or, if this price is challenged, to the price fixed by the Committee for medicinal products (CEPS). If a hospital succeeds in negotiating a price which is less than the maximum set price, the resulting margin has to be shared with the Regional hospitals agencies –ARH-. However, any amounts paid in excess of the maximum set price for items of this kind are not refunded to the hospitals.
- Furthermore, hospitals have to sign contracts with ARH for 'proper use of expensive drugs and medical devices' according to the decree passed on 29 August 2005. The 'proper use' is defined according to nationally or internationally accepted medical standards. If hospitals do not comply with the contract conditions, they will be given lower reimbursement rates (e.g. 70% instead of 100% in some cases).

5- <u>Dialysis</u>

Once the treatment of chronic renal failure has been authorized, the funding of these patients' treatment is based on a dialysis tariff. The schedule of tariffs applied here contains 11 levels corresponding to the terms and conditions of care identified by decrees no. 2002-1197 of 23 September 2002 on the use of dialysis in the treatment of chronic renal failure [6].

6- <u>Outpatient consultations and procedures</u>

The funding of outpatient consultations and procedures is based on article L.162-26 of the social security code introduced by the Social Security Act for 2005 *(Loi de financement de la sécurité sociale, LFSS pour 2005*. According to this article, consultations and planned procedures performed in outpatient wards as well as episodes dealt with in emergency units are paid for on the basis of the CCAM nomenclature and tariffs [6]. It is worth noting that if the specialist responsible for these consultations and procedures at a public hospital is a full time hospital practioner (HP), the payment wil be made to the hospital. Conversely, if the specialist is a part time HP and carries out the consultations in the framework of his own private practice, he will be paid directly.

<u>7- Teaching and research activities, reference and innovation activities and recourse missions (MIGAC)</u>

Hospitals which carry out these activities also have to bear extra expenses, since these activities can involve special needs. A ministerial order defines the list of 'public welfare missions' and the overall MIGAC target is set at national level and then allocated on a regional basis (region by region). The ARH contractually allots from its MIGAC budget a lump sum to these hospitals based on a framework and rules defined at national level: these have tended to change since the hospital funding reform started to be implemented. The statutory teaching hospitals (CHU) are classified in three categories, depending on acknowledged research criteria. These categories correspond to three fixed proportions of the budget which can be allotted: 10.5%, 12% and 13%. Cancer institutes as well as other hospitals where the teaching or research activities are recognised can thus benefit from this MIGAC budget, but in different proportions to those of the CHU.
The other 'public interest missions' involve some specific public interest activities which are excluded from the MSO field due to the hospital accounting rules, but which need to be supported. These are activities such as organ banks, care dispensed to specific populations, mobile medical emergency services, therapeutic screening and paramedical schools.
Lastly, the ARS allocate resources for contracting promotion schemes on the basis of regionally defined criteria depending on regional planning priorities and quality of care. [3, 5].

<u>Mental care</u>

The activities of psychiatric wards are not yet funded via the case-mix payment system, but still via the global budget method. At the macro level, they come under the ODAM sub-target, which also deals with rehabilitative care wards and long term care units at public hospitals.

A patient classification system, called Psychiatry PMSI, has been experimented since 2001. This system of classification is based on the length of hospital stays (in days) [3].
Since 2005, discussions have been going on about the funding system to be used for mental healthcare. The main questions raised here focus on:
- the case-mix-based payment system, which could be run either on a per-day basis or on a per-procedure basis;
- the funding system will probably be a combined system: the case-mix-based payment system is to be completed by lump sum budgets devoted to public welfare missions and budgets for expensive drugs;
- a specific budget may be calculated proportionally to the population for which the hospitals cater as far as mental healthcare is concerned.

Setting tariffs for private-for-profit hospitals[14]

Private for-profit hospitals account for around one-third of all French hospitals, one-third of the admissions and a quarter of the beds. Currently, 80% of the top five most frequent surgical interventions are being carried out at these hospitals.[2, 4].
The previous tariff system included a classification of the private hospitals which provided for differentiated tariffs. In some regions, a proportion of the hospital activity benefited from more favourable tariffs as the result of historical negotiation processes. The hospital funding reform is expected to sort out these regional tariff disparities. Henceforth, the GHS tariffs applicable to private hospitals are regionally bounded via a maximum and minimum value in order to eventually make all tariffs converge towards the same level per activity and per area.
It is worth noting that despite these regional disparities, 'private' tariffs are lower on average than public ones. In one of its recent circulars[15], the Directorate of hospitalisation and care (DHOS) stated that 'in 2004, private tariffs accounted for 60% of the public sector' after smoothing out the area differences (the car in question includes medical fees, drugs, expensive drugs and medical devices and medical analysis).
Consequently, it was decided to adopt a differential evolution of tariff levels in 2005: 1.56% for 'private hospitals' and 0.27% for 'public' ones.

In private hospitals, the case-mix payment system started on 1st March 2005 and has been applied to 100% of all MSO activities. But since these hospitals always charge their patients fees, this means that contrary to what occurs at public hospitals, the cost per GHM is not known. The tariff calculations have simply consisted so far in adding together for each GHM all the fees which result from billing all the patients' stays in this category. A national study has been carried out on the period 2004-2005, based on the same methods as those applied to public hospitals (i.e. a national cost study: the ENC) [3].

In the case of private hospitals, the GHS-tariff is a global one including all the charges associated with a patient's stay included the running costs involved in the use of technical equipment. However, medical fees and technical expenses such as those arising when imaging and scanner equipment are used are billed in addition to the GHS[5].

In addition, an adjustment index is applied systematically to the national GHS- tariffs. This index is a complex one since it includes three sub-levels:

- Technicality: public funding for particularly expensive care will be maintained until the regional plans for intensive care are implemented,

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[14] In the rest of this paragraph, private-for-profit hospitals will be named 'private hospitals'.

[15] DHOS- F-ODSS -1A/2005, p. 11.

- Extra structural expenses: objective extra expenses arising for geographical reasons have to be funded, and so the correction applies to those hospitals where these expenses arise,
- Transition: gradually harmonising the funding so that hospitals which were over- or under-funded in the previous system are aligned with the others [3,5].

In addition, some other minor adjustments for fixed costs are applicable. As a general rule, allowance is made for structural costs such as real estate amortization and interest expenses in the standard GHS-tariffs set at national level, However, the Regional hospital agencies (ARH) are still entitled to allocate the MIGAC budget (or envelope) to fund some of the fixed costs incurred at a given hospital [3,5].

The main features of the regulation system of tariffs and expenditure related to MSO ad MIGAC activities

In this paragraph, we propose to summarize the main features of French hospital funding regulation [5].
As we have seen, this regulation depends on both national and regional actors (see table 2) :

1- The national instances:
    - set the MSO targets or objectives,
    - set the MIGAC budget (or 'envelope') and distribute it among the regions
    - define with the appropriate consulting bodies the rate of evolution of tariffs and annual lump sums (see below)
    - if the need arises, adjust the tariff evolution (and supplementary items of expenditure) for each sector and each GHS
    - update the geographical indices
    - set, for the private sector, the annual inter-regional convergence targets and define the intra-regional convergence by notifying the existence of maximum gaps between regional and national tariffs.

2- The regional instances (ARH):
    - allocate the MIGAC budget to hospitals,
    - notify the lump sum proportions and adjust the applicable evolution rate,
    - notify the applicable GHS-tariffs and supplements
    - set the transition indices applicable to private hospitals.

Tariffs are defined annually by the French Ministry of Health. In addition, the latter keeps the right to update tariffs once a year in order to meet the health insurance expenditure target. This happens in year n if this target has been overstepped at the end of the first term in the year or if the target of year n-1 has in fact been overstepped and this overspending is above the predictions on which the tariffs for year n have been calculated.

The Technical Agency for Hospital Information (ATIH), which, under the aegis of the Ministry of health, is responsible for calculating the costs included in the National cost study (ENC) and the tariffs is assisted in its task by a technical committee including representatives of the four hospital unions representing both the public and private sectors. These representatives are called upon to submit proposals, especially for revising the DRG classification. ATIH tries to respond to all the requests made by hospitals

I.I.II. OUT-PATIENT CURATIVE CARE

Out-patient curative care is essentially provided by independent practitioners paid on a fee-for-service basis. As explained in other sections of the French report, two fee-schedules currently co-exist:

- the CCAM (*Classification Commune des Actes Médicaux*) applies to procedures performed by physicians and dentists;
- the NGAP (*Nomenclature Générale des Actes Professionnels*) applies to physician's visits and consultations, and to procedures performed by other health professionals in private practice (nurses, physiotherapists, speech-therapists, and *orthoptistes*[16].

The objective is to make the CCAM the unique fee-schedule in the future.

The two fee-schedules are based on the same principle: fees are linked to the production cost of each procedure, including the professional's own earnings.

Out-patient care services delivered by hospitals are also paid on a fee-for-service basis, with the same fee-schedules..

Price regulation of out patient care

Price regulation of out-patient care services is not uniform among producers. Some general principles apply to all professionals but there are exceptions for different professional groups (detailed below).

As explained before, professionals are paid on a fee-for-service basis and fees are determined by a general fee-schedule. The fee is in fact a fixed amount which is considered as the basis for the reimbursement by health insurance funds.

Physicians are always free to charge patients under this amount since the Medical Code of Ethics recommends to charge patients with 'tact and measure'. Clearly, in reality, there is no incentive to do that since even the poorest part of the population is now covered by health insurance -CMU scheme-, which allows patients to receive services without any direct payment..

In certain cases, physicians are also free to charge patients beyond this fee. Before 2005, this possibility only concerned physicians of '*secteur 2*', i.e. 25% of all physicians.

Since July 1st 2005 and the implementation of the Reform of August 13th 2004, extra-billing is allowed – within limits- by all specialists, whatever their sector is, when a patient is not referred by his/her *médecin traitant* (family practitioner).

The NGAP

The NGAP was the fee-schedule for all professionals until 2005 (see WP1). Now, it only applies to procedures and/or professionals that are not yet covered by the CCAM.

In the NGAP, the 'value' of each procedure is determined by the multiplication of a coefficient by a key-letter, which is specific to each professional category.

[16] Professionals specialised in eye rehabilitation.

For instance, the key-letters for nurses' fees are AIS (€2.40) and AMI (€2.90). Nurses' procedures are rated between 1 AMI (e.g. for an intra-muscular injection) and 16 AIS ('home care for a sick person requiring constant observation and regular nursing care, including hygiene care, between 20 pm and 8 am').

Prices are always negotiated at the central / national level, between health insurance funds and the unions of health professionals.

In the NGAP framework, there were two types of negotiation:

- first, the negotiation for the quotation of each procedure in the fee schedule;
- second, the negotiation for the national value of the key-letter.
-

The CCAM

Calculations of fees in the CCAM are described below.

Up-dating prices

Negotiations for the value of the key-letters take place during the preparation of national agreements which are signed between the representatives of each professional group and health insurance funds every four to five years. The values of the key-letters may change more often but there are no fixed and systematic appointment for that.

Agreements signed with nurses, physiotherapists, ambulance personnel, speech therapists and *orthoptists* include an annual target for total expenditure. Tariff increases are granted providing that the target is met. In addition, nurses must respect an individual annual ceiling; otherwise, they must pay back part of their revenue to the health insurance funds. Laboratories must also pay back if total expenditure exceeds the ceiling (HIT, 2004).

HC.1.4 Services of home care

In France the distinction between curative and rehabilitative home care does not really exist. The distinction is made between hospital home care (HAD, hospitalisation à domicile) which covers more or less complex/acute medical services which could/should be provided at a hospital but can be transferred to home with some medical co-ordination; and ambulatory nursing care provided at home (SSIAD, service et soins infirmière à domicile) which consist of less complex medical services. SSIAD are paid by daily tariffs taking into account average nursing time required. This section will develop the costing elements concerning hospital services provided at home (HAD).

Since January 2004, hospital home care services are paid by "daily tariffs" calculated for 31 homogeneous service groups. But as in MSO (see above) the implementation is progressive for the public sector and only 25% of home care services are paid by these "case-mix adjusted daily tariffs" in 2005. All of the home care services provided by private hospitals which were not covered by global budgets are currently funded by these tariffs.

Until 2004, home care services were financed from a fixed budget devoted to "home care" in public and some of the private non-profit hospitals. This "home care" envelop had been adjusted with yearly negotiations between regional hospital agencies and the providers based on historical costs with taking into account the actual number of days produced, and some of the variations in medical activity. Most private institutions were paid by daily tariffs, but the tariff was not linked to the type of care provided and the actual resource use. We should note that there were not many for profit institutions providing home hospital care.

I.I.II. SERVICES OF REHABILITATIVE CARE

The activity related to rehabilitative care (Soins-suites-réadaptation, SSR) is not part of the case-mix based payment system and still paid by global budgets for public and private not-for-profit hospitals, and based on daily tariffs for private for profit ones. However, there is ongoing work for developing a patient classification system (PMSI SSR) for RC and collecting the cost data going with the case mix. The objective is to pass on case-mix based funding by 2007 (at least on a voluntary basis), but the available cost data is far from being sufficient at the moment.

The regulation system of rehabilitative care

Currently, regional budgets are set by Social security fund (CNAM) for rehabilitative care (RC), and distributed to providers by regional hospital agencies (ARH). In public sector, payments for RC are made by envelops taking into account the historical costs and the activity of each provider. Therefore the daily tariffs are rather “fictive” (division of total expenditure by the number of days produced) and change from one hospital to the other.

In private sector, the daily tariffs are negotiated at the regional level between ARH and private hospitals. The wages are not included in the calculation of tariffs and are paid separately. … The tariff paid for the same service can change from one region to other and within a region. But a provider cannot charge different fees for different patients. If a patient living in a region where the tariffs are cheaper would like to have RC provided in another region where the tariffs are more expensive, s/he needs to provide medical justification.

Updating prices

The tariffs in RC are updated on a yearly base after national negotiations between the Ministry of Health and the representatives of health care providers (Private Hospital Federations). The national negotiations fix the average evolution rate of tariffs for each region. There are further negotiations between ARH and the individual providers to fix the rates for each institution (within limits, no more than the 150% of the national rate). The negotiations are based on a number of factors other than regional differences in input prices and inflation, such as balance in regional budgets. So, price upgrades are far from being accurate. There is no real assessment of resource consumption.

I.I.III. *ANCILLARY SERVICES TO HEALTH CARE*

HC.4.1. *Clinical laboratory*

Outpatient laboratory tests are usually carried out at private laboratories. They may also be carried out in hospitals, particularly when they have been prescribed by a hospital doctor. A specific fee-schedule applies: the *Nomenclature des Actes de Biologie Médicale*. The principles are the same as that other fee schedule described before.

Laboratories activities are capped by regional ceilings and laboratories have to refund partly health insurance funds if this ceiling is passed.

HC.4.2. *Diagnostic imaging*

Diagnostic imaging can be performed in private practice of self-employed physicians or in private and public hospitals. The prices are now defined by CCAM according to the methods defined above.

HC.4.3. *Patient transport and emergency rescue*

The prices for ambulance transports are defined by:

- a lump sum depending on the *département* or the town (ranging from €48 to €54);
- a price/km (€2).

Transports by other type of vehicles are less expensive and based on the same principle (lump-sum + price/km).

HC.4.9. All other miscellaneous services

For spa treatment:

- physicians are paid by a lump-sum for treatment surveillance and on a fee-for-service basis for 'complementary' procedures;

- the establishment is paid by a per diem, depending from the therapeutic orientation of the spa.

Related expenses are covered up to 65%.

Housing expenses are covered up to 65% on the basis of a lump-sum of €150.

Transport to the spa-establishment is reimbursed at a 65% rate on the basis of the price of a 2d class train tick or on the basis of any real expenditure below this sum.

I. II CALCULATION OF COSTS

I. II. 1 Calculation of hospital activity costs: cost accounting approach [9, 10]

Hospital costs per stay are calculated by combining the medical and other cost data for each stay with the cost centre directly or indirectly involved in the hospitalisation. Each cost can be broken down into three main components:

- structural costs: financial costs, building depreciation, taxes excluding staff
- overheads and infrastructure costs (laundry, catering and administration) and training costs
- medical costs (medical consumables, staff, medico-technical procedures, depreciation and maintenance of medical equipment). These costs include:

- costs charged directly to patients such as blood, prostheses, outpatient treatments, and certain drugs,

- costs calculated per day (doctors, nursing staff, use of medical equipment, medical supplies) for each clinical cost centre (SAC- '*section d'analyse clinique'*) at which the patient is treated

- costs of services with which the patient is provided by technical cost centres (SAMT- *section d'analyse medico-technique'*) are broken down on a work unit basis: the relative cost index (ICR)).

Breaking down the accounts into clinical and technical cost centres (SAC and SAMT) makes it possible to calculate the daily cost per cost centre and the relative cost index, which is used to allocate the costs incurred at each of the technical cost centres to each stay. Some mixed clinical and surgical activities (SACMT) can involve both hospitalisation and technical activities (outpatient surgery, dialysis, radiotherapy, intensive care)[17].

Calculating the cost per day of clinical cost centres (SAC)

Step 1**.** The hospital allocates its consolidated costs to the various cost centres

Some accounts (depreciation and maintenance of buildings, financial costs, insurance, taxes) are allocated to an indirect cost centre (structural cost centre). Only the medical and staff costs are left in the clinical and technical cost centres as well as in the other cost centres (rehabilitative care units , long term care units, psychiatry and other separately costed activities)[18].

Two infrastructure cost centres are handled separately: laundry and catering, for which the costs are estimated. A non-attributable cost account is set up. All the other costs are placed in an "other infrastructure" cost centre.

Step 2**.** The income from subsidiary services is deducted (meals for nursing staff and patients' family, services to users, telephone calls charged to patients, seconding of administrative staff, doctors and nurses.

Step 3. The items directly assigned to Medical, Surgical and Obstetrics hospitalisation (MSO) are consolidated: medical consumables, outpatient procedures and outsourcing (specialists' services outside hospitals)

Step 4. Medical infrastructure costs (sterilisation, pharmacy, medical devices and prostheses) are distributed among the cost centres which use these services (using work units or key factors allocation. The costs allocated to a given clinical cost centre divided by the number of days of hospitalisation give the centre's clinical cost per day.

The other costs per day are then calculated for a hospital's entire Medical, Surgical and Obstetrics activity rather than for each clinical cost centre:

Step 5. The laundry and catering costs are allocated to each of the activities and in the setting of inpatient care, they are allocated to stays per day (consultation and hospitalisation for less than 24 hours account for a half day's catering and one day's laundry, whereas newborn babies generate only laundry costs).

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[17] The main aspects of hospital cost accounting are presented in ANNEX I.

[18] Restating the accounts ANNEX II.

Step 6. The technical costs are allocated to hospital stays and to other activities (work units at each technical department (SAMT)).

It is worth mentioning that on the National Cost Scale (ENC), technical service costs (SAMT) are calculated using relative cost indices (ICR). The ICR is a relative index to the use of resources (doctors, nurses, equipment), which assigns costs to each resource relative to other resources.

The total costs of technical services (SAMT) divided by the total number of relative cost index points produced give the cost of one relative cost index point at the hospital in question.

The cost of each technical service is calculated by multiplying the relative cost index by the cost of one point at the hospital in question.

Mobile medical emergency services (SMUR) are charged by the half hour, while intensive care services are costed in terms of OMEGA points.

Step 7. The administration and infrastructure costs are allocated to each of the activities pro rata to the previously allocated costs (medical costs, laundry, catering for MSO stays, rehabilitative care stays, long term care stays and other hospital activities and total outsourcing costs. The costs for in patient short stay are calculated per day and the costs are allocated to the stays on a per day basis.

Step 8. The indirect costs (structural costs) for each activity are allocated pro rata to all the costs previously allocated.

The costs for in patient care stay are calculated per day and the costs are allocated to the stays on a per day basis

The daily costs of structure, overheads, infrastructure and training are calculated by dividing the total costs allocated to Medical, Surgical and Obstetrics activity (MSO) by the number of days.

Calculating hospital costs per stay

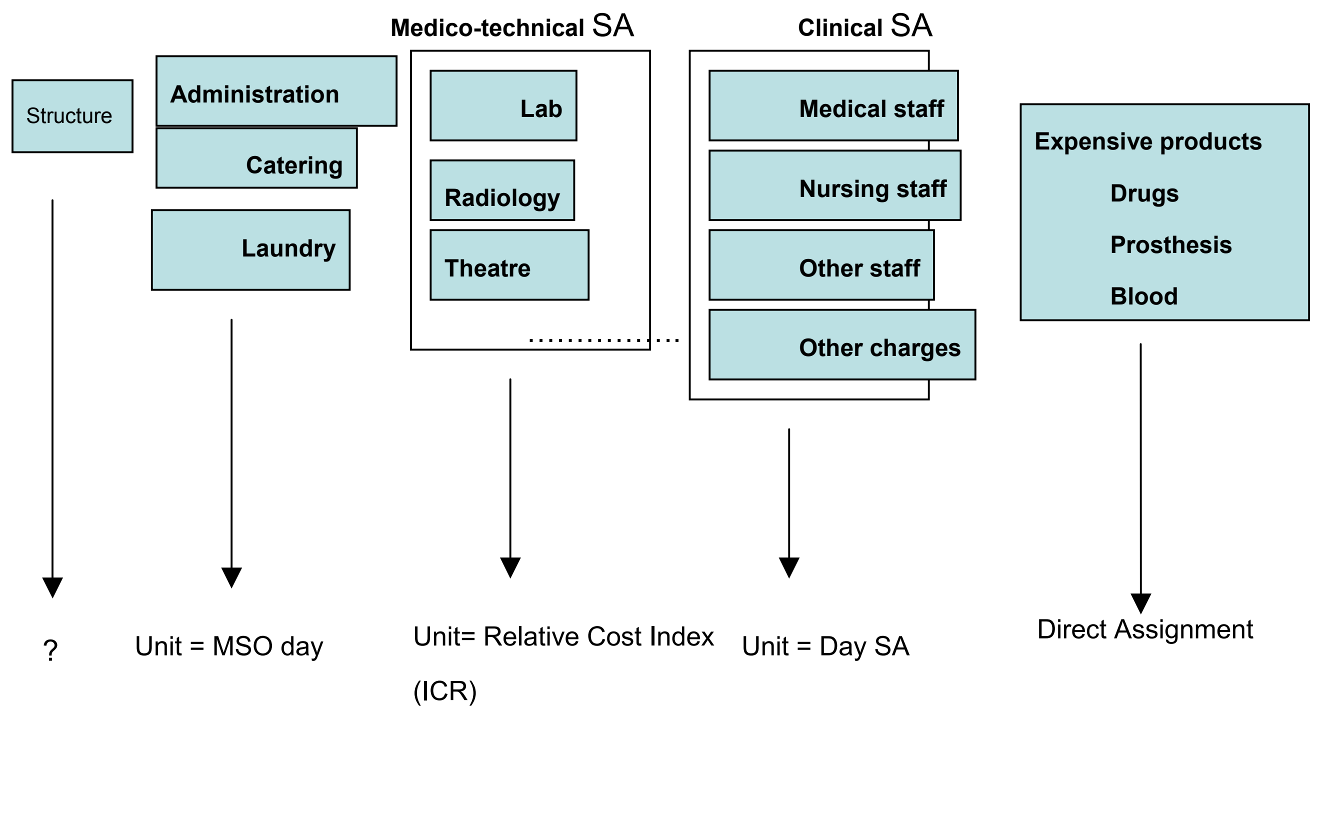
The 'hospital stay file' contains, for each patient's stay, the length of time spent at each clinical cost centre (SAC), the total number of relative cost index (ICR) points corresponding to each technical cost centre and the directly attributable resulting costs.

The total cost of a stay is calculated by adding together:

- the daily costs incurred at each clinical cost centre
- the directly attributable costs
- the costs of the technical cost centres (SAMT) (in proportion to the total number of relative cost index points used)
- the laundry, catering, infrastructure and structural costs (pro rata for the total length of MSO stay).

This cost accounting approach is illustrated in table 2 for costing **GHM V9 08C05V : interventions on hip and femur (see below)**

Box 3 Consumption unit per activity or activity group – *section d'analyse* SA-



The units used to quantify resources used in the course of various medico-technical activities are presented in table 1.

Table 1 Resources required in the course of medico-technical activities

Activity	Work Unit /
laboratory tests	B
Imaging departments	ICR
General operating theatre work	ICR
Obstetric theatre work	ICR
Functional exploration units	ICR
Anaesthesiology	ICR
Episodes in waking room	episode
ıerapy	ICR
Dialysis	ICR
Mobile medical emergency treatment (SMUR)	1/2 hours
Intensive care for all stays	ICR Omega
Resource units in other technical capacities	Non defined

Table 2 GHMV9 08C05V : interventions on hip and femur no major age>17 no CMA Full cost (structure cost excluded) = EUR 6027, ALSNAT= 13,71

Clinical centres SAC & Intensive care (euros)	2 419	Doctors' salaries	Nurses' salaries	Other salaries	Medical consumables	Drugs	Depreciation maintenance	Medical Infrastructure		
		290	1410	387	122	92	15	103		
Costs of SA medico technical (euros)	1 725	Labs Personnel costs	Labs other costs	Imaging personnel costs	Imaging other costs	Gal operating theatre perso costs	Gal operating theatre other costs	Obstetrics theatre perso costs	Obstetrics theatre other costs	
		93	51	77	32	513	302	0	0	
		Func exploration personnel	Func exploration other costs	Anesthesy	Waking room	Radio therapy	Dialysis	Emergency	SMUR	Other medico-technical
		6	3	442	67	0	1	65	28	44
Infrastructure costs (logistics)	1 506	Catering	Laundry	General Infrastructure						
		194	69	1 243						
Costs individualized to patients	377	Outpatient procedure	Consumables, medical devices, prostheses	Drugs	Blood	Chimio Molecules				
		13	193	7	164	0				

I. II. 1 Calculation of out patient services costs[19]

The costs of out-patient curative care provided by independent professionals is not well-known. The information has nevertheless improved in the last years with the building of the CCAM, which establishes a link between costs and fees.

The CCAM is based on a resource-based relative value scale (RBRVS), inspired by the methodology used by Hsiao and his colleagues for the creation of the Medicare fee-schedule (Hsiao et al., 1988).

The amount of work provided by the physician to perform each procedure was evaluated by a group of experts according to several dimensions (time devoted to the procedure, stress, technical skill required and mental effort). Then, a complex methodology is used to rank all procedures on a common relative value scale according to the amount of work provided (W) – without any consideration of

[19] Professional expenditures taken inot account in the estimation of the practice costs are presented in Appendix 4.

other costs than the physician's work (Cnamts, 2000, and Mousques, 2004 for an English synthesis). The amount of work is expressed in "work points".

Then, a **'cost of practice'** is affected to each procedure. This cost is divided in two components:

- '**running costs**', i.e. costs necessary to run a private practice in the physicians' specialty (C). These costs are distributed among physicians activity in proportion of the number of work-points;
- **'specific costs'**[20] induced by the performance of some procedures, which are estimated only when: (1) the procedure is particularly costly, and (2) the procedure is performed only by a few doctors in the related specialty. In this case, direct costs of the procedures are not covered by average running costs in the specialty and the physician has to be paid for his/her special investment. For instance, dermatology procedures using laser will be considered as '**particularly costly procedures**' since they are performed only by some dermatologists.

Running costs are estimated for each medical specialty through individual data routinely collected by the General Directorate of Taxes (*Direction générale des impôts*) for the purpose of income-tax collection. The National Health Insurance Fund obtained the authorisation to work on these individual but anonymous data. Costs taken into account are described in appendix one.

Specific costs related to rare and particularly costly procedures are estimated by experts, and by specific surveys on these specialists and on manufacturers of equipments. Manufacturers are asked to provide information on the price, depreciation rates, direct functioning and maintaining costs, etc. (Cnamts, 2003, p9).

Direct costs related to the functioning of about 50 equipment were estimated based on three hypotheses about the intensity of use over one-year period: full-time, half-time, ¼ time. Then, the direct cost was compared with the 'running cost' originally allocated to the procedure (by the formula $Wi \times Cgj$) to decide whether the procedure should or not be considered as a 'particularly costly procedure': if the direct cost was higher than $Wi \times Cgj$, then it was considered as a 'particularly costly procedure'.

All these estimations were established by relevant services of the health insurance funds, in collaboration with IRDES (Institute of Research on Health Economics). Medical experts were involved in the selection of particularly costly procedures and in the estimation of their direct cost. The representatives of medical practitioners are also consulted about the accuracy of these estimations.

The fee of a procedure i (Ri) is then calculated according the following formula:

$$Ri = Wi \times FC + Wi \times Cj + Si$$

Where:

- Wi the number of work-points
- FC is the Monetary Conversion factor
- Cj is the running cost per work-point for the specialty j
- Si is the specific cost of procedure i (only if relevant).

[20] 'surcoût' in French.

For the first version of the CCAM, the monetary conversion factor was calculated by allocating a global budget to an expected volume of activity. This expected volume was defined by extrapolation on the basis of a survey estimating the frequency of procedures in 2000. Its value is calculated by the following formula: FC = (total budget – total costs)/ Σ Wi.

At the beginning, the implementation of the CCAM was supposed to be neutral in terms of health insurance funds' expenditures since higher prices for some procedures were supposed to be compensated by lower prices for other procedures (over-paid in the NGAP). After months of negotiations, the two parties (HIF and physicians' unions) agreed for a progressive transition towards new prices to give the opportunity to each specialty to adapt its practice to the new tariffs. However, physicians' unions still complain about this new fee-schedule.

For **procedures involving high-tech and costly equipment** (MRI, scan, radiotherapy...) characterised by high fixed costs, the fee has two components: a payment for the physician and a payment for the equipment (a lump sum, varying according to the type and equipment and the annual level of activity of the facility). The first part is linked to the amount of physician's work. The second component is based on annual running costs: the equipment, facilities, personnel, consumables, administration costs, etc (Cnamts, 2000, p. 11). Already the cost/price for MRI and scans were calculated with this principals in the NGAP, now it is extended to other costly equipments in the CCAM.

I. II. 3 Calculation of home care services costs

A national survey of home care services is launched in 2000[21], in order to describe the patient profiles demanding home care and to define "homogeneous resource use groups". The homecare tariffs currently in use are calculated from a cost model based on this survey.

The national cost study pooled data on patient characteristics and medical consumption from the 2000 survey and additional reimbursement data from social security database[22]. The direct medical cost of a "stay" in home care is calculated taking into account all direct medical consumption of patients including medication, nursing care, cost of coordination activities, and but excluding wages of medical practitioners (represents about 3% of the total medical cost). Moreover, the cost of a number of expensive drugs (like chemotherapy) and medical care (such as dialysis, radiotherapy, etc.) are not included in the cost calculations. In the initial model, the costs of specialist care were included (corresponds about 5% of total cost), but in the tariffs used actually specialists wages are paid separately for private hospitals, although they are included for public ones.

First, costs are calculated for 19 "care categories" from actual data. Second, the cost of care for the cheapest care category is identified as "minimum direct medical cost" (cout medical de base journalier).

The "total daily cost" of a patient stay in homecare is estimated by weighting the minimum direct medical cost with a number of variables characterising the type of care. The variables included in the cost estimations are: the main care protocol, the secondary care associated, the physical and mental

[21] Enquête nationale sur l'hospitalisation à domicile, ENHAD 2000.

[22] ENHAD collected data from 29 hospitals and 1860 patients over the period 1999-2000. Data for complementary reimbursement by social security concerns about 1000 patients.

dependence of the patient[23] (measured by Karnofsky index), and the length of stay (treated as non linear). In addition, a regional/geographical index is used for adjustment. This model allowed to calculate the costs of care for different combinations (of patient dependence, care, LOS, etc). From about 1200 theoretical cost values, 31 homogenous Groups of Tariffs are established where for each tariff group the cost of providing care would not access +/- 10 € of the average tariff set.

Work for improving the case-mix measurement in home care and methodological developments are carried out by ATIH (Agence Technique d'Information Hospitalière). Ministry of Health (Department of organisation) sets the actual tariffs in consultation with an expert group consisting of national federations of hospitals (both public and private), associations of home care providers and other independent experts.

I. II. 4 Calculation of rehabilitative services costs

Since July 1998, all public and private non profit institutions providing rehabilitative care (RC) produce "Standardised summaries of weekly activity" (Résumés hébdomadaires anonymisés-RHA) to be able to produce case-mix data for RC. The weekly activity summaries allow to classify the number of days produced in each institution in homogeneous groups (Groupes Homogènes de Journées). These GHJ (279 in total) constitute, in principal, the base for cost calculations.

A national cost study is carried out in 2000, to estimate the cost of a "homogeneous day –GHJ" in rehabilitative care, using data from 33 institutions over 6 months. The cost estimations take into account both direct and indirect costs for a given period of hospital stay in a producer unit. Direct medical costs include the specialists' consultations outside of the hospital, blood products, prostheses and other medical equipments and exceptionally expensive drugs as well as the costs of medical personnel and the fixed cost of medical equipment (spread over different medical units). Total cost of a provider unit is affected to a "stay" using "nursing points" (SIIPS) measuring the intensity of nursing care on a scale from 1 (very light) to 20 (intense or technically heavy medical care. .…

[23] Measurement of dependence with ADL based indicators is under experimentation currently.

Table3. Framework for Section I of Report (to be completed)

Sector (Functional Categories			Cost Assessment				Price Setting			
			Used?	Units of resource usage	Source of resource usage	Source of monetary value	Unit of price/payment	Level of price setting/negotiation	Variabiliy of prices depend-ing on…	Updating
HC 1	Services of curative care									
	HC 1.1	In patient care	[yes/+no] Step-down accounting	Stay Day	Real/+es -timation	Real/+es -timation	Day/+Case Aggregate budgets	National/+ Regional	Volume Technology Inflation	Real/+estimated
	HC 1.2	Outpatient care	[yes/+no] Step-down accounting	item	Real/+es -timation	Real/+es -timation	Case	National	Volume Technology Inflation	Real/+estimated
	HC 1.3									
		C 1.3.1								
		.								
		C 1.3.9								
	HC 1.4	Home care	Yes	Homoge-neous day groups	Real/+es -timation	Real/+es -timation	Day/case	National	Volume/+ Negotiation	Negotiation estimated
HC 2	Services of rehabilitative care		NO	Day?	Estima-tion	Estima-tion	Aggregate budgets	National/+ Regional/+ Instituional	-	-
	HC 2.1	…								
		…								
	HC 2.4	Home care	YES							
C 3	Services of long-term nursing care									
	C 3.1	…								
		…								

	C 3.3	…								
C 4	Ancillary services to health care									
	C 4.1	…								
		…								
	C 4.9	…								

SECTION II: ANALYTICAL SECTION (TO BE COMPLETED)

Is it a clear conceptual separation between costs and prices

In the CCAM, the link between costs and prices is far more transparent than it used to be in the NGAP. In this former fee-schedule, the expected expenditure for health insurance funds was the prominent 'economic' element of the negotiation.

Are there any service groups known to be subsidised?

In the previous fee-schedule (NGAP), dentists' common services were partly subsidised by prosthesis prices. Since the prices of dental prosthesis are free, dentists were used to do extra-billing to refund other parts of their activity for which maximum prices were set. About 50% of the dentists' income were extra-billings. The implementation of CCAM is supposed to change this matter of facts. .

Do discrepancies between costs and prices have implications on access or on delivery of appropriate care?

It had an impact on access to some health services, for instance to dental prosthesis, two expensive for those without complementary health insurance.

Rarely a health reform in France has been supported that much. Both public and private hospitals, medical organisations, and all public institutions involved are agreed with the major principals of the reform.

The need for more transparency and better management in public hospitals has long been recognised by most stakeholders.

However, this initial consensus on the reform may not continue long as the actual implications of the new system are better understood. Both the public and private institutions are already complaining about the level of "prices and tariffs" for the 2005. They claim that for the same level of activity they will get less funding. For the moment, it is not possible to verify if the case-mix payment will be accompanied with the budget cuts, or not. The methods of calculation and the base prices used are not clear.

In fact, most of the current complaints and reactions concern the problems linked to implementation process, in particular the delays in the announced calendar, the lack of clear information and transparency. For example, the prices for the private sector are only announced in the first week of March, not giving any room for preparation to the institutions. Similarly the list of drugs and medical supplies to be paid separately is published very late. The lack of clear information on several technical aspects concerning payments creates confusion. It is difficult for most providers to see clearly how will be their budget situation by the end of 2005.

Another issue of concern is the construction of the "MIGAC budgets" for public hospitals to finance the education, research activity and other "public missions". Both public and private sector expressed their concern as to the future size of this budget. Private sector fears that this budget would be used as a mechanism to cover actual efficiency deficits of public hospitals, while public sector has doubts about underestimating the value of their "public mission". But the exercise of assessing the cost of different public activities may improve the transparency of public hospital budgets [4].

What are the most important barriers to cost assessment in your country?(to be completed)

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ANNEX I

MAIN ASPECTS OF HOSPITAL 'ANALYTICAL' ACCOUNTING – COST ACCOUNTING

Analytical accounting is essentially cost accounting for the real consumption of resources. It is based on the consolidated general accounts, obtained by adding together the general accounts and the associated accounts, excluding non-allocated costs (DNA) and removing the effect of internal services.

Cost accounting is based on a single hierarchy of account numbers for the activities provided by the establishment and a set of rules for allocating costs.

A) Activity account numbers

The first step is to divide the establishment into cost centres.

The analytical costs are allocated to cost centres which assume that the activity within the centre is uniform.

The cost centres to which the costs of the various activities of the hospital are allocated are all defined in account 92 of the account number hierarchy.

The accounts are defined as a hierarchy, with the costs at a given level split into costs at the next level down and, conversely, the sum of the costs at a given level is the cost at the next level up.

5 levels are predefined. From level 5, establishments may create any additional subdivisions using any names.

The restated accounts used for determining the medical, surgical and obstetrics charges use mainly the first two levels.

For determining the costs nationally, the accounts based on the top 5 levels must be combined with analytical accounting for each hospital stay.

a) Level 1 accounts are the 4 main **cost centres** of the hospital

Overheads, infrastructure and training,

Technical functions,

Clinical functions,

Medical infrastructure

Each cost centre is subdivided **(levels 2 to 5)**

b) The clinical functions, for example, comprise the following level 2 **activities**

Medical

Surgical

Gyneco obstetrics

Outpatients

Examinations

Psychiatric services

Rehabilitative care

Social services

Long-term care and homes for the elderly

Alternatives to hospitalisation

c) The level 2 activities are split into **level 3 activities**

Medical is subdivided into

General medicine

Paediatrics

Medical specialties

Intensive care and continuous monitoring

d) **Level 4 activities**

General medicine includes general medicine for the general public and general medicine for specific groups.

e) Level 5 can be further subdivided

General medicine for the general public can be subdivided into

internal medicine

infectious diseases

geriatric medicine

general medicine

Division into cost centres will depend on the hospital's calculation objectives:

-isolate in the administrative account the costs that are subject to re (used for calculating the basic medical, surgical and obstetric cost scale (MCO), or ICARE services).

- calculate the cost of hospitalisation, then aggregate by the Uniform Patient Group (GHM) (National Cost Scale - ENC)

- calculate the costs of the activities or functions

- analyse its short stay costs using the National Cost Scale results.

B) ALLOCATING COSTS IN ANALYTICAL ACCOUNTING

Costs are allocated by dividing the whole of the normal, everyday costs between the cost centres without omissions or double accounting.

Costs are generally allocated to the cost centre which uses the corresponding resources for its services.

If the cost centre for the activity whose service has been purchased does not exist in the establishment, it must be created.

This allocation can be done directly to the cost centre (account 92) or may require the costs to go through reclassification accounts (account 91, overheads) for restating.

The following costs are allocated to the account 91: mortgage payments, building rental, furniture rental, taxes, bad debts, financial costs, intangible assets, construction, depreciation and provisions.

Some costs are non-attributable in analytic accounting: exceptional costs (except account 6728, other costs for previous financial years) and land.

The cost structure that must finally be determined must be for net costs, financed by long-term income. The direct costs allocated between the various cost centres must, therefore, be corrected by secondary income (income from groups 3 and 4 for ambulance services (SMUR) [group 2] and the exceptional income and the income from secondary services provided in accordance with the hospital law should be deducted from cost centre costs (staff meals, telephone calls invoiced to patients, supplementary room costs, etc).

ANNEX II

RESTATING ACCOUNTS

All hospital establishments must report their restated accounts.

The Medical, Surgical and Obstetrics charge scales are determined using the national aggregated costs.

From now on, accounts must be restated to identify the costs incurred by the hospitals which are financed by case-mix based payment system or by an annual grant for public welfare missions and contractual activities (MIGAC) or disciplines not covered by per act tariffs in 2004 (rehabilitative care, psychiatry). Moreover, restating the income from the activity (revenue in group 2) should make it possible to determine the share of the costs financed by social health insurance and the share of costs not covered by social social health insurance. The operations should be carried out in a fixed order: the cost of the resources provided to the user cost centres (SI) during the financial year should be allocated to these cost centres.

A distinction is made between allocating costs to definitive cost centres and to secondary cost centres which will subsequently be reallocated to the definitive cost centres to determine the total costs allocated to each cost centre.

Definitive cost centres

SI1A: Medical, Surgical and Obstetrics (MCO), SI1B: Home care (HAD), SI1C: Casualty

Activities covered by “public welfare missions and contractual activities (MIGAC) envelope’ are allocated to cost centre 2.

SI2A: Other Medical, Surgical and Obstetrics activities, SI2B: Other activities - After-care and rehabilitation (SSR), SI2C: Other activities - Psychiatry,

Cost centres not currently covered by per act charges

SI3A1: physiotherapy and rehabilitation, SI3A2: specialist after care, SI3A3: generalist after care.

SI3B: psychiatry

Secondary cost centres

SI4a: Laundry, SI4b: Catering,

SI5a: General infrastructure, SI5b: medical infrastructure, SI5c: overheads

SI6a,b,c…:Technical services (operating theatres, laboratories, imaging, functional testing, radiotherapy)

COST ALLOCATION PRINCIPLES

1. Allocating costs

Costs should be allocated directly to each cost centre or sub-centre defined above.

In certain cases, hospitals will have to estimate the factors for allocating the direct costs to different cost centres. They should be able to supply the factors used, for example, the remuneration of groups of personnel (stand-by teams, night staff covering several units, medical secretary pools, etc) for allocating the costs to the various cost centres as a function of the time devoted to each cost centre.

2. Deductible income

The final cost structures determined should be the net costs to be financed by long-term income. The direct costs allocated to the various cost centres should, therefore, be corrected by the secondary income (income group 3: catering and general and group 4: financial), income from ambulance services (SMUR) [group 2: medical costs] and all exceptional income [income that is non-repeating]).

3. - Calculating compound costs

The medical infrastructure costs are reallocated to cost centres 1, 2 and 3, if these have been allocated group 2 (medical) costs, and reallocated to cost centre 6 (technical services) except for the ambulance (SMUR) and organ collection cost sub-centres if they exist.

For calculating the reallocated costs, a reference cost is required for calculating the factors. This reference cost is the total of the group 2 (medical) costs for the definitive cost centres and the group 2 and group 4 (depreciation, financial costs) for the technical cost centres. The costs are then divided between the different cost centres proportionally to the contribution of each cost centre to the reference cost.

This must be done before the technical services costs are reallocated to the definitive cost centres.

4- Defining the work units and reallocation factors

The total cost of each activity is obtained by allocating to the activity the cost of all the work units that it used and the reallocation factors to which it is subject, as appropriate: day for all accommodation costs, Euro for net direct costs for infrastructure, administration and overheads, codes for technical service costs.

2. The technical cost centre costs are allocated in the following work units:

laboratory: work unit B equivalent;

imaging: work unit Z equivalent;

functional testing: work unit K;

radiotherapy: work unit Z equivalent.

No work unit is defined for operating theatres, which are allocated in total to SI1A short stay; work unit KC may be used for comparing cost prices.

For ambulance services (SMUR), the work unit is half hour of transport or minute of transport for helicopter ambulances. The number of work units is given for information, the whole cost should be allocated to cost sub-centre 2 SMUR created for accounting purposes.

There is no work unit for costs related to collecting organs: these costs are reallocated completely.

3. The costs of the infrastructure and administration cost sub-centre and of the overheads cost sub-centre should be allocated, as a proportion of the net reallocated costs, to short stay Medical, Surgical and Obstetrics (MCO) activities, Home care and Casualty activities, to each of the other activities cost sub-centres as well as to the activities not covered by per act charges (after care and rehabilitation (SSR) and psychiatry) with the exception of cost sub-centres in SI2 Geriatric (EHPAD), ambulance services (SMUR) for accounting purposes and collecting organs for accounting purposes.

The net reallocated costs are the total of net direct costs + technical services + accommodation costs

Particular case of medical infrastructure

Medical infrastructure costs should be allocated over all definitive cost centres if they have been allocated group 2 costs (medical), as well as over section 6 technical services before being reallocated to the definitive cost centres. The medical infrastructure costs must, therefore, be allocated before the full costs are calculated for cost centres 1, 2 and 3.

The costs, including the codes, determined in the compound costs table will, therefore, be used to reallocate the technical service unit operating costs to cost centres 1, 2, 3 and 5 (for occupational medics only).

- RESTATING GROUP II INCOME

The next step in the new charge scale system comprises:

creating a Medical, Surgical, Obstetrics (MCO) cost target;

determining a charge scale of costs covered by social security.

This implies that the Regional Hospital Agency (ARH) will fix the social security payment rate for the hospitals independently of the group 2 income forecast. It is, therefore, necessary to know how this income is allocated between the definitive cost centres for each hospital to subtract the level of costs covered by the current overall payment from the current level of costs included. Hospitals are asked to restate the group 2 income in terms of the activities that generated it: Medical, Surgical and Obstetrics activities, casualty, other activities and activities not covered by per act charges.

ANNEX III

Professional expenditure taken into account for estimating practice costs

BA	**Purchases.** Supplies and products sold on to patients or used as part of the services provided excluding the purchase of equipment.
Personnel costs	
BB	Net salaries and advantages in kind: this comprises the salaries paid, the sundry allowances due to personnel and fixed rate allowances or actual cost allowances. Advantages in kind cover: food, accommodation, car, etc; and in cash: tips, restaurant vouchers, etc.
BC	Social security charges on salaries (employer's and employee's contributions): these are social security payments, complementary pension payments, unemployment insurance, occupational doctor, insurance and social security surcharges (CSG and CRDS).
Tax	
BD	VAT. This item is filled in if the accounts are held inclusive of VAT. It covers payments made between 01/01 and 31/12 and VAT on real estate purchased for which VAT was recovered during the financial year. Doctors are exempt from VAT, without exception, for the care that they dispense to their patients. However, an associated activity carried out by the doctor is subject to VAT.
BE	Business tax. This is the business tax for the financial year even if the cheque is cleared in the following year.
BS	Other tax. These are taxes on the practice paid during the year, ie: – taxes on the property if it is used for the practice and listed in the capital assets register, – land tax on buildings and additional taxes incumbent on the owner relating to business premises, – refuse collection tax and street cleaning tax, – tax on the salaries for employers who do not pay VAT on at least 90% of their income, employer's contribution to refresher training for employees, contribution of self-employed professionals to their own training, contribution of employers with at least 10 employees to building housing, – the deductible fraction of CSG and CRDS, – property transfer tax on property purchases, – annual road tax on automotive vehicles and annual tax on cars used by the company, – interest charges for late payment of deductible taxes.
BF	**Rental and rental charges.** This is the rental and rental charges paid as well as the taxes normally paid by the tenant. For mixed use of premises, this is the rental for the proportion of the area used for the business. If the medical practitioner owns the premises, this covers the depreciation, the rental charges and the ownership charges if the premises are owned by the practice. If the premises are declared as being privately owned, only the charges that a tenant would have to pay should be included.
BG	**Rental of equipment and furniture by an associate.** This is rental paid under the terms of a rental or leasing contract for equipment or furniture for professional use, the rental being paid to the principal. The contract is treated as the rental of equipment and patients: for drawing up the practice's accounts, the fees paid by the associate to the principle are considered to be rental paid in return for the usufruct.
BH	**Works, supplies and external services** - Maintenance and repairs. This applies to the maintenance and repair of equipment and buildings for professional use (cleaning, painting, maintenance, repair, replacing worn parts, equipment maintenance contracts, etc). These charges are for maintaining equipment and buildings (appearing in the capital assets register) in normal working order. - Temporary personnel. This is sums paid to temporary employment agencies and for telephone receptionist services. - Small tools. The purchase cost of equipment and tools of unit value less than or equal

	to FF2,500 excluding VAT can be deducted. This also includes software. - Heating, water, gas, electricity. - Fees other than those that are passed directly on to other practitioners: these are sums paid to third parties for services provided to the business during the year (accountant, professional associations, legal fees, etc). - Premiums on insurance contracts covering: – civil liability of the practitioner and his staff; – risk to business premises (theft, fire, flooding, etc); – risks to equipment and tools (damage to machines, etc); – risks of illness or accident specific to the profession, that may limited by decree, to provide substitute income or the fixed costs of the practice. This item does not include: – optional personal insurance contracts unless these are group insurance contracts; – life insurance premiums unless these guarantee a professional loan.
BJ	**Vehicle costs.** Practitioners have a choice of two options. – The real vehicle costs, separating car, motorbike and other vehicle costs using the rules to be applied for allocating these costs and the vehicle depreciation. – Using a mileage allowance for each vehicle, stating the number of kilometres for business use, the rate per kilometre and the sum of the allowances. Other travel expenses. Transport costs are deductible, regardless of the form of transport used, for business trips and for the cost of business meals or meals while on a business trip.
BK	**Personal social security payments.** Compulsory (BT) and optional (BU) payments
BT	Compulsory social security payments. These are compulsory payments for family allowance, invalidity-death, health insurance or maternity and, within the limit of the ceiling, payments made by the employer and his spouse to the basic and complementary pension scheme.
BU	Optional social security payments. These are voluntary payments to these schemes for the unpaid spouse who does not have any other professional activity or who works no more than part-time and, within the limits of the ceiling, payments to optional schemes set up by the social security organisations or to group contracts defined by the Madelin law.
BL	**Entertainment, representation and conference expenses** directly and unequivocally related to the activity carried out and supported by receipts. Entertainment and representation expenses may not be set by allowance. Conference expenses are the registration fee, transport, accommodation and subsistence costs (business meal).
BM	**Sundry management costs** Office supplies, documentation, post and telephone. This includes: – office consumables (envelopes, carbon paper, etc), office accessories (waste paper bin, letter scales, calculator, answer phone, etc), office furniture (chairs, filing cabinets, desks, etc) whose unit value excluding VAT does not exceed FF2,500, – documentation costs covering the purchase of books, business audio or video cassettes, subscriptions to technical magazines or magazines for patients, technical works (cannot be treated as capital assets even if they are very expensive), subscriptions to a financial and business advisory service. – cost of stamps, dispatch by recorded delivery or special delivery, telephone and fax costs. Legal costs. These are legal costs other than business costs to be accounted for in the year of payment. They are also: – costs for recovering unpaid fees (bailiffs, factoring company, etc) – the property transfer tax paid when purchasing the practice and buildings. The transfer tax paid on setting up the practice can be written down over several years. – property transfer tax paid on a gift of the practice and buildings (eg: for a donation or
	Union and professional payments. These include:

	– union and professional payments (union, order, etc), – expenses associated with union or voluntary activity. The following can be deducted within the limit of 0.225% of the gross revenue excluding VAT: – gifts to bodies and organisations of public interest, – payments to approved organisations for creating businesses, – payments made to public or approved private scientific and technical research companies or bodies. The following can be deducted within the limit of 0.325% of revenue: – gifts to foundations and associations of public interest. Other sundry management costs. These are business gifts, credit card costs, tips, laundry costs, purchase of clothing, advertising costs (advertisements, staff recruitment, etc), removal costs (if for professional reasons), costs of professional training for the doctor or his employees, university course costs, costs of professional training for non-salaried spouse if the collaboration is effective and exclusive.
BN	**Financial costs**. These are costs and interest on loans for: – financing setting up expenses, – purchasing the practice or goodwill, – building, repairing, improving and purchasing elements allocated to the business, – purchasing a share of a partnership. The professional share of the interest on a loan to finance a building used for personal and professional purposes, as well as bank charges, interest and overdraft charges, if they are not associated with personal expenditure, can also be deducted. The interest paid to associates for the sums that they loan to the partnership can also be deducted.
BP	**Sundry losses.** These costs do not come within any of the categories defined above of exceptional and business nature (eg: losses from the theft of equipment or practice funds, insolvency of patients, etc). The losses are deductibles when they result from risks associated with normal professional practice. This also covers deposits associated with the rental of premises, when they are retained after vacating the premises.
BR	**Total professional costs.** This is the total of all business expenses.