APDRG Svizzera Schweiz Suisse

# Cost-weights version 4.1

APDRG Suisse

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APDRG Svizzera Schweiz Suisse

# Version 4.1 of the APDRG Suisse cost-weights was produced

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required to carry out the cost-weights calculations

Version 4.0 was adopted by the APDRG Suisse Committee
during its meeting in Berne on 6 May 2003.
This version 4.1 (i.e. version 4.0 with the addition of SPG 907) was adopted after
being circulated to the APDRG Suisse Committee members in June 2003.

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# APDRG cost-weights - version 4.1

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**Important remark**

**The appendices in this document are identical to those of version 4.0. The mention "Cost-weights version 4.0" is shown on their cover pages.**

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**Appendix B:** APDRG, proportion of the total cost from drugs and implants & medical equipment, proportion of the cost from drugs and proportion of the cost from implants & medical equipment

**Appendix C:** APDRGs containing less than 25 inlier hospitalisations

**Appendix D:** APDRGs whose cost-weights have been corrected

# 1. Calculation of cost-weights

## Differences between versions 4.0 and 4.1

There are very few differences between this version 4.1 of the cost-weights and version 4.0 (published in May 2003):

- all values in version 4.0 of the cost-weights table remain unchanged;
- SPG 907 was introduced in version 4.1 (it did not exist in version 4.0)[1];
- various titles of APDRGs and SPGs have been improved;
- version 4.1 of the cost-weights table is not attached to this document, but is available at address www.hospvd.ch/ise/apdrg; in addition, for each APDRG or SPG, the number of cases recorded in the APDRG database is included in this table together with the variation coefficients for the hospitalisation lengths of stay and costs.

## 1.1. Introduction

Version 4 of the cost-weights - or relative values - of the APDRGs is the most sophisticated since we benefited both from the experience gained through the use of the previous versions and the first information gathered following the introduction of APDRGs in Switzerland for invoicing of hospitalisations, mainly in the cantons of Vaud and Zurich. Lastly, this version was based on calculations made using more numerous and better quality data than in the previous versions.

The main aspects of this version, described in detail in this report, are as follows:

- The database used has been revised, deleting all data which was not felt to be sufficiently reliable. More recent data has been added, not only from hospitals in the APDRG Suisse Group, but also from hospitals which participated in the cost calculation project of the Federal Statistical Office, made possible through the excellent relationships developed with this organisation. Due to this addition, the current database is the largest used to date to calculate the Swiss cost-weights.
- Some methods have been modified, especially that used to identify outliers, thereby taking into consideration the results obtained to date on the use of APDRGs to invoice hospitalisations.
- Since it is likely that this version 4 of cost-weights will be used extensively, special care has been taken over the description of the processing and calculations performed when producing the cost-weights.

No system is perfect, however. It also applies to patient classification systems and their derivatives. In spite of the above-mentioned improvements, occasional adjustments have been required and they are described in detail below.

The publication of these cost-weights will shortly be followed by a revision of the TAR APDRG report, which provides the information necessary for pricing by APDRG and which will be added to the documents available for the implementation in 2004 of the pricing by APDRG in all Swiss cantons planning to use it.

If you discover any errors in this document which we have unfortunately overlooked, or any explanations which appear unclear, please do not hesitate to point them out to us by sending an e-mail to apdrg-ch@hospvd.ch. We thank you in advance for helping us to improve the style and content of this text.

[1] A description of SPG 907 (and all the other SPGs) is provided in document TAR APDRG 2004 which can be obtained at address www.hospvd.ch/ise/apdrg.

## 1.2. Data used

The APDRG Suisse Group database (known as the "APDRG database") used to calculate version 4 of the cost-weights includes information concerning 203,253 hospitalisations of short term somatic care during the years 1999 (65,497 hosp.), 2000 (75,760 hosp.) and 2001 (61,996 hosp.). These hospitalisations took place in 12 hospitals[2], including three university hospitals (82'622 hosp.).[appendix ]

These 12 hospitals use cost accounting per final charge unit in compliance with the requirements of the Federal Statistical Office (FSO) and, as afar as we know, they are to date the only ones in Switzerland which are able to supply accurate and reliable information regarding the costs of each hospitalisation.

All ambulatory treatments and all semi-hospitalisations were excluded beforehand (7,236 cases excluded). Only a small number of readaptation stays could not be identified in the short term care hospitalisations (since it was impossible to identify these readaptation stays correctly, they could not be deleted).

Since the data was collected over a period of several years, the records containing Swiss operation classification codes (CHOP) which no longer apply have been modified so that the hospitalisations can be classified in APDRGs using the current version of the grouper (version 1.3). In addition, for hospitalisations during which there was a delivery, a code of category Z37 has been added to the record when the data concerning the mother was incomplete[3].

Complete costs are taken into account, excluding investments. The costs of drugs (MED) and those of implants and medical equipment (IMM) have been added by using a table (see appendix B) which indicates for each APDRG the proportion of these costs with respect to the total cost of hospitalisation[4]. We were obliged to use this method since the hospitals which supplied the data were unable to determine the MED and IMM costs specific to each hospitalisation.

Hospitalisations costing less than CHF 200 or more than CHF 12,000 per day were not taken into account (917 cases excluded) since the data concerning them appeared to be extremely unlikely.

## 1.3. Comparison of hospitalisation costs

The costs observed in the university hospitals were compared with those of non university hospitals. The following graph shows the mean cost of hospitalisation of each APDRG in the university hospitals (univ.) and non university hospitals (non univ.). The mean cost was calculated by considering the hospitalisations whose length of stay is between the low and high trim points determined using the "L3H2.4" method (see below, page 4). The APDRGs with more than 50 hospitalisations both in the university hospitals and in the non university hospitals were taken into consideration (i.e. 148,616 hosp. classified in 246 APDRGs).

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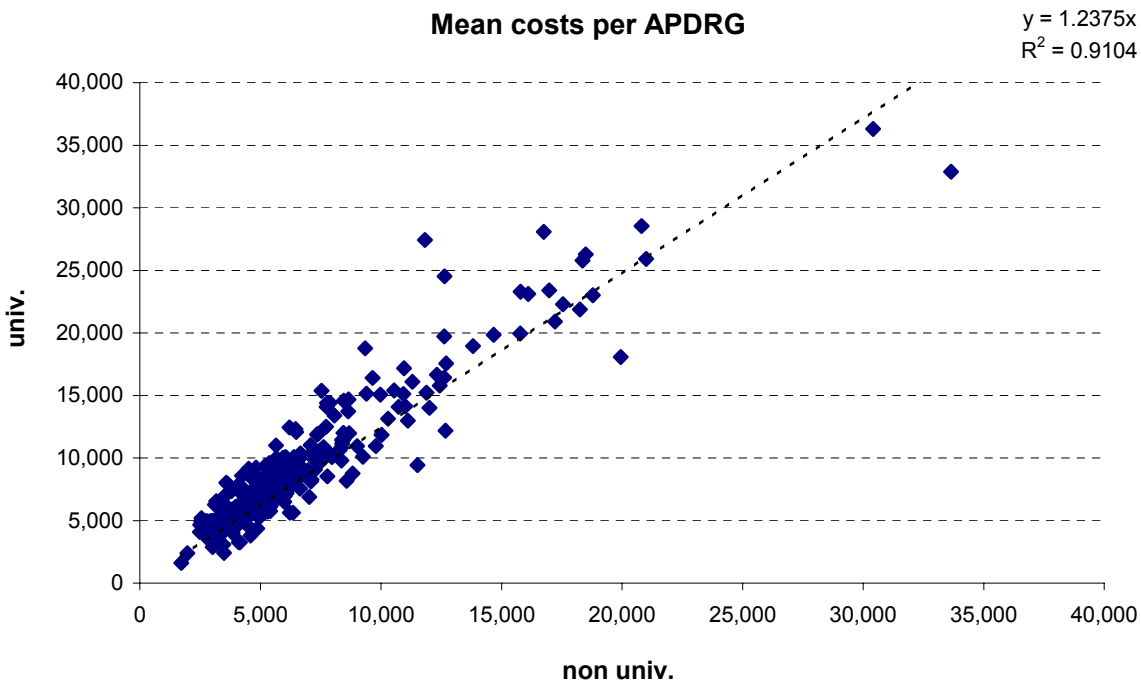
[2] The hospital names and the years during which the data was collected are given in appendix A.

[3] A code of category Z37 in the mother's record indicates that a delivery occurred during the hospitalisation. Its presence is nevertheless essential since the grouper needs this code to distinguish between the hospitalisations during which a delivery occurred and those for an ante-partum or post-partum disease.

[4] This table was drawn up using data obtained from Belgian hospitals. Some of the values in this table may have been modified on the basis of Swiss data. Presently, no Swiss hospitals can supply all of this data.

**Graph 1**




We observe that the cost ratios per APDRG in the two types of establishment (univ. and non univ.) are similar, but that the mean costs per APDRG are globally higher in the university hospitals than in the non university hospitals (even though costs relating to research and teaching, which are not included in the costs considered, have been excluded).

It was therefore decided to adjust the costs by multiplying those of the non university hospitals by 1.24 (regression gradient factor[5] rounded to two decimal places), which resulted in a reduction of the cost variation coefficient within each APDRG and a reduction in the difference between the observed costs and the amount reimbursed (see below).

This method was preferred to that used when calculating version 3.2 of the cost-weights, where the number of hospitalisations in non university hospitals was multiplied by 7, resulting in estimation errors when the number of hospitalisations per APDRG was low.

The cost difference between university and non university hospitals is explained, at least partly, by the wider range of cases in university hospitals (for which the hospitalisations are classified in about 600 APDRGs as compared with those of non university hospitals, classified in about 300 APDRGs) and by the presence in some APDRGs of different cases (heterogeneousness of a certain number of APDRGs). Moreover, we cannot rule out the possibility that the costs induced by the university activities were underestimated.

[5] This regression was made by forcing the line to go through the origin.

## 1.4. Automatic cardiac defibrillator

Hospitalisations in university hospitals during which an automatic cardiac defibrillator was installed or replaced have been identified using a special file since, as the encoding of these hospitalisations is insufficiently accurate and exhaustive, it was impossible to correctly classify these hospitalisations in SPGs 902 (Insertions of defibrillator) and 903 (Insertions of defibrillator, with major cc).

The cost of hospitalisations classified in SPGs 902 and 903 was calculated as follows: total cost = cost without implant + CHF 42,000 (average cost of an automatic cardiac defibrillator).

## 1.5. Methods used to set the trim points

The lengths of stay (LOS) classified in a given APDRG are used to calculate three values traditionally associated with all APDRGs[6]:

- the low trim point (LTP) of the lengths of stay;
- the high trim point (HTP) of the lengths of stay;
- the average length of stay (ALOS).

Observations between the high and low trim points are known as "inliers", those below the low trim point are known as "low outliers" and those above the high trim point are known as "high outliers".

The cost-weight of an APDRG is defined as the average cost of inlier hospitalisations classified in the APDRG concerned divided by the average cost of all inlier hospitalisations considered (in our case, the inlier hospitalisations in the APDRG database).

There are various ways of calculating the low and high trim points. We examined three in detail, which are described briefly below.

### *1.5.1. L3H3 method (L three H three)*

This method mainly consists of using the average length of stay divided by three as the low trim point and the average length of stay multiplied by three as the high trim point. To determine these trim points so that they are not effected by outliers, the average length of stay is calculated using the method described below.

For each APDRG we first determine the $25^{th}$ percentile (P25), the $75^{th}$ percentile (P75) and the interquartile range (EIQ = P75 - P25) of the distribution of lengths of stay. Hospitalisations with a length of stay below value Vinf corresponding to P25 minus 1.5 times the EIQ (Vinf = P25 - 1.5 * EIQ) and hospitalisations with a length of stay above value Vsup corresponding to P75 plus 1.5 times the EIQ (Vsup = P75 + 1.5 * EIQ) are then excluded from the calculation.

Let RM = the robust mean of the lengths of stay between the values Vinf and Vsup. The low trim point (LTP) is then defined as being RM divided by three, the high trim point (HTP) is defined as being RM multiplied by three[7].

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[6] The lengths of stay (LOS) are calculated in days using the following formula:
LOS = discharge date – admission date + 1
Note that any holidays which occur during hospitalisation or days spent waiting for transfer in a medico-social establishment or at home must not be included when calculating the lengths of stay.

[7] If the number obtained when dividing RM by 3 (RM/3) is not an integer, the low trim point corresponds to the integer value immediately greater than this number. For example, if RM/3 equals 2.9, the trim point will be three 3 and if RM/3 equals 3.1, the trim point will be 4.
If the number obtained when multiplying RM by 3 (RM*3) is not an integer, the high trim point corresponds to the integer value of this number. For example, if RM*3 equals 26.2, the high trim point will be 26, and if RM*3 equals 30.9, the high trim point will be 30.

This method can be easily modified by using a factor other than 3. We therefore tested variants such as "L3H2" (division of RM by 3 and multiplication of RM by 2), "L3H2.4" (division of RM by 3 and multiplication of RM by 2.4), etc. In all cases, the division and multiplication factors do not vary from one APDRG to another.

### *1.5.2. LαHα method (L alpha H alpha)*

The "LαHα" method is derived from the "L3H3" method. Its main feature is the application of a division and multiplication factor α whose value will depend on the distribution of observations within each APDRG. If they are dispersed, α will have a large value; if close, α will be small (the value of α varies from one APDRG to another).

### *1.5.3. Gamma method*

For each APDRG the Gamma distribution underlying the lengths of stay is determined such that its median and interquartile range are identical to the median and interquartile range of the data. The length of stay corresponding to the 98$^{th}$ percentile of this distribution is then chosen as high trim point (HTP) separating the high outliers from the inliers: all values above this point are considered as outliers. Since this 98$^{th}$ percentile of the underlying Gamma distribution corresponds to a certain likelihood (in the statistical sense of the term), excluding high outliers is therefore the same as ignoring unlikely observations, i.e. observations whose likelihood is below that of the 98$^{th}$ percentile of the distribution.

The limit between the likelihood and unlikelihood has been arbitrarily set at the 98$^{th}$ percentile. A different percentile could have been chosen, but the advantage of the 98$^{th}$ of the underlying Gamma distribution is that it defines a limit such that the proportion of high outlier hospitalisations appears reasonable both to payers and care providers.

The low trim point separating the low outliers from the inliers is defined by considering the mean Ma of the underlying Gamma distribution. If this distribution is truncated at the 98$^{th}$ percentile, its mean will inevitably be shifted towards a lower value, which we will call Mb. This distribution can now be truncated again, at the other end this time, truncating a point such that the distribution mean will once again be Ma. This point then corresponds to the low trim point (LTP).

### *1.5.4. Method chosen to produce version 4 of the cost-weights*

The previous version of the cost-weights was produced using the Gamma method since from the statistical point of view this method seemed especially suitable. Nevertheless, when the lengths of stay within an APDRG are not widely dispersed, the low and high trim points (LTP and HTP) determined using this method are very close to the average length of stay (ALOS). If the length of stay of a hospitalisation differs by just a few days from the ALOS, then it is considered as an outlier. For example, if we determine the trim points of APDRG 107 (coronary bypass, without cardiac catheterisation) using the Gamma method, a hospitalisation with a length of stay less than 8 days or greater than 14 days is an outlier, whereas the average length of stay is 11 days.

It therefore appeared sensible to determine the trim points using a method such as the "L3H3" (or one of its variants) since it is independent of the distribution and can be used to set the trim points which are always sufficiently far away from ALOS. This method is in fact widely used in Australia.

Finally, the "L3H2.4" method was chosen. The reasons for this choice are described below.

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In addition, a hospitalisation whose length of stay is equal to a trim point (low or high) will be considered as being an "inlier".

## 1.6. APDRG hierarchy

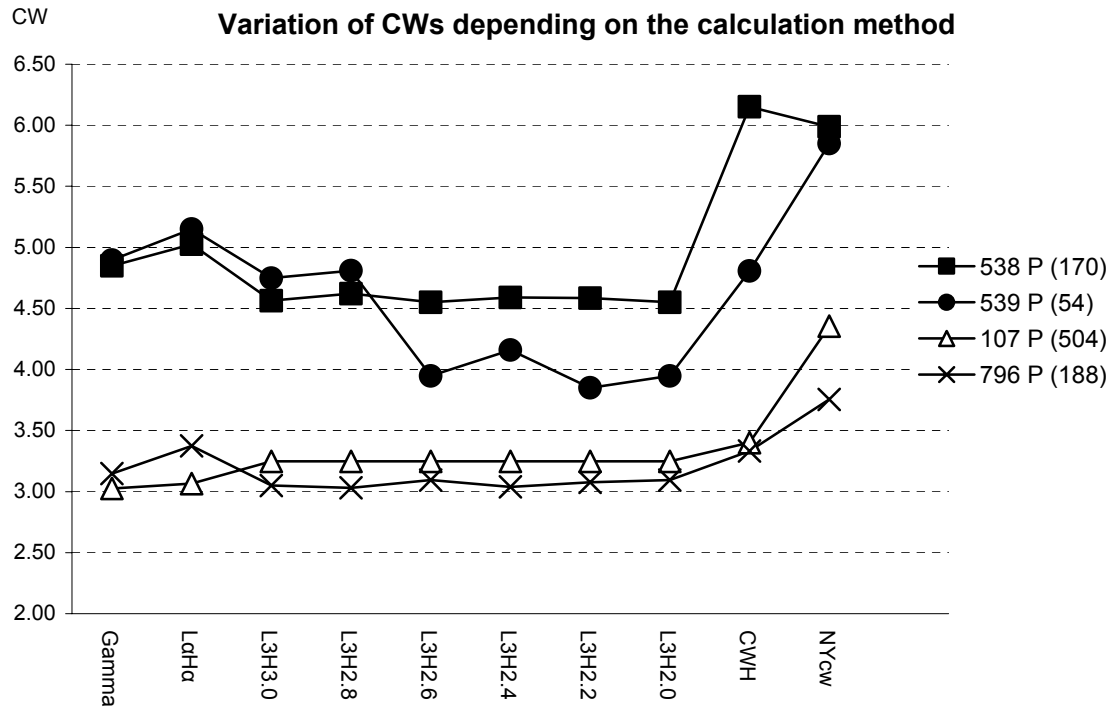
The hospitalisations are classified in APDRGs according to a hierarchical order determined by the grouper. For example, a hospitalisation during which a venous stripping was carried out will be classified in APDRG 119 and a hospitalisation during which an aorto-coronary bypass was carried out will be classified in APDRG 107 (if there are no major complications or comorbidities and cardiac catheterisation). A hospitalisation during which both venous stripping and aorto-coronary bypass were carried out will be classified in APDRG 107, since it is considered as more important by the grouper. Each APDRG therefore holds a quite specific rank within the MDC (Major Diagnostic Category) it belongs to[8].

The hierarchic order for the classification of hospitalisations is one of the points which must be taken into account when producing the cost-weights. If one APDRG is considered as more important than another by the grouper, in principle its cost-weight should also be higher. However, the value of a cost-weight varies not only according to the observed costs but also depending on how the low and high trim points (LTP and HTP) are calculated.

The following graph illustrates the variations in cost-weight values of two APDRG pairs according to how the trim points are calculated. The following methods are used: "Gamma", "LαHα", "L3H3.0", "L3H2.8", "L3H2.6", "L3H2.4", "L3H2.2", "L3H2.0", "CWH" and "NYcw".

The values obtained using the "CWH" and "NYcw" methods are in fact those shown in the table of Swiss cost-weights (version 3.2) and in the table of New York State cost-weights.

**Graph 2**




[8] The hierarchic order of the DRGs is included in the logic diagrams for classification of the hospitalisations within each of the 25 MDCs and also in appendix D of the Definitions Manual of the APDRGs adapted to Switzerland.

APDRG 538: Major thoracic procedures, with major cc.
APDRG 539: Respiratory procedures except major thoracic operations, with major cc.
APDRG 107: Coronary bypass, without cardiac catheterisation.
APDRG 796: Revascularisation of the lower limb with cc.

The hierarchic order of the APDRGs is as follows: 538 before 539 and 107 before 796. We observe that with some methods of calculating the trim points, the cost-weight values respect this hierarchic order, whereas other methods lead to the opposite situation, with identical data.

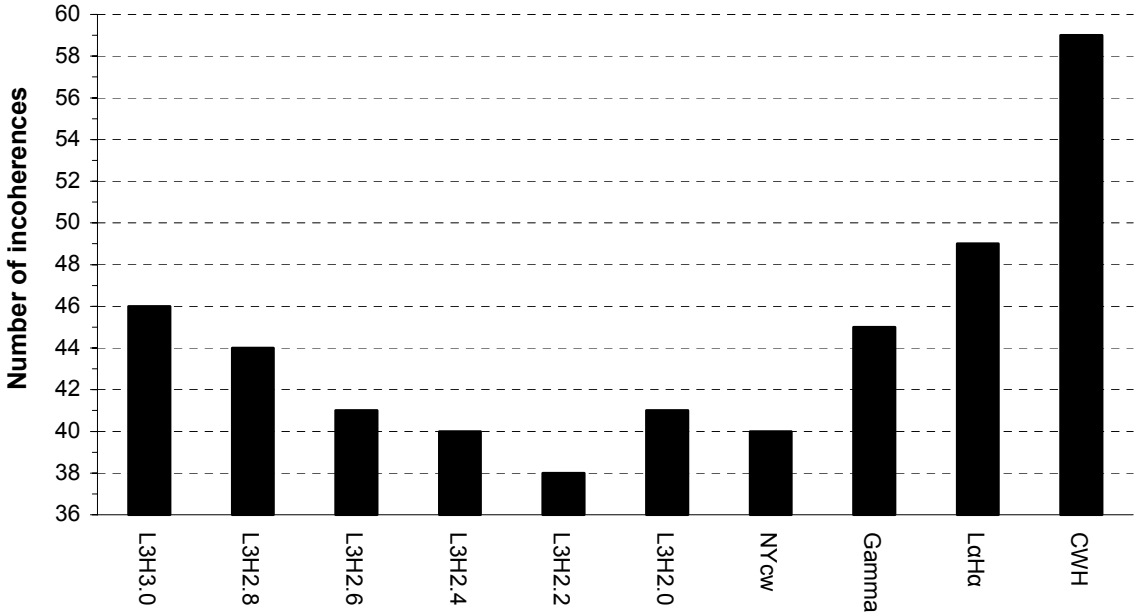
Any situation in which the values of a cost-weight pair do not correspond to the hierarchic order of the APDRGs concerned has been defined as a "cost-weight incoherence". Such situations seem inevitable since they arise in the New York, Swedish and Swiss cost-weights (version 3.2). Ignoring the incoherences which seem inherent to the APDRG classification algorithms, we have determined the number of cost-weight incoherences according to the method of calculating the trim points.

This number was calculated taking into account the combinations of operation codes observed in our data. We compared the cost-weight of the APDRG assigned when all the operations performed during a hospitalisation are taken into account with that of the APDRG assigned when only one of these operations is taken into account. There is incoherence if the cost-weight of the APDRG assigned when only one operation is taken into account is greater than that of the APDRG assigned when all the operations are taken into account.

The following table shows the frequency of cost-weight incoherences against the method of calculating the trim points.

**Graph 3**

**Frequency of cost-weight incoherences against method of calculating the trim points**

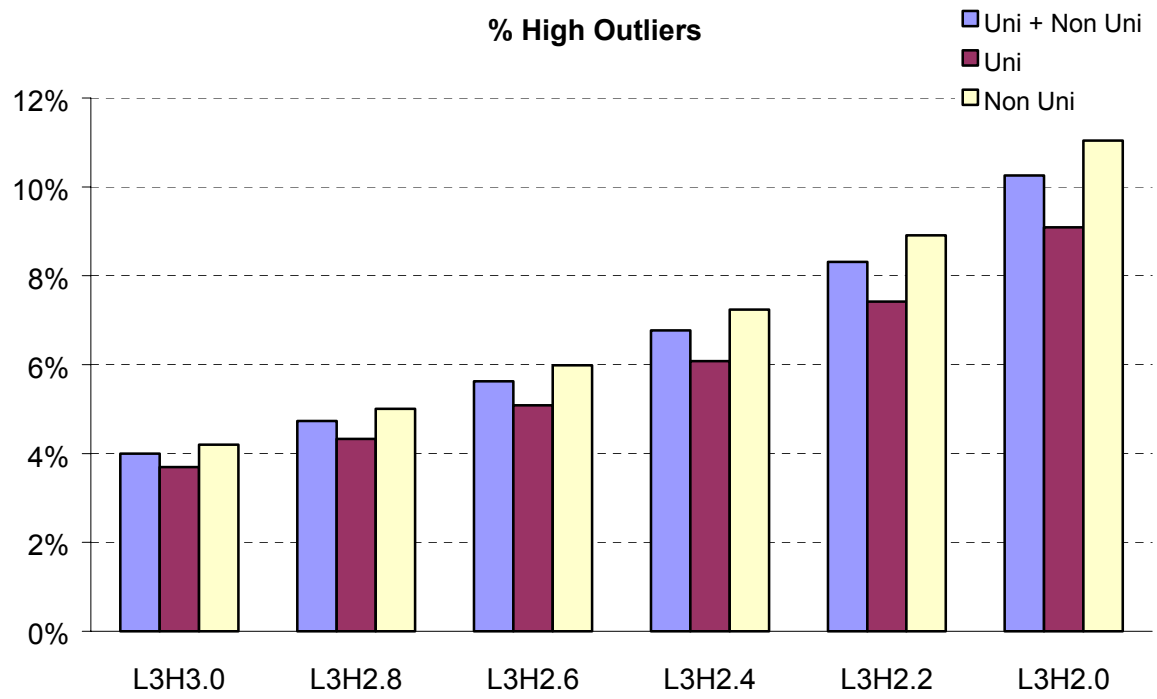



From "L3H2.8" to "L3H2.0" the number of incoherences varies very little (from 38 to 44). Although the lowest frequency is obtained when the "L3H2.2" method is used, the "L3H2.4" method was chosen since the number of outliers obtained with the "L3H2.2" method was felt to be excessive, considering the financing criteria (see below).

## 1.7. Proportion of outliers

The proportion of low and high outliers obviously varies depending on the method used to calculate the trim points. The following graph illustrates the proportion of high outliers when the high trim points are calculated with "L3H3.0", "L3H2.8", "L3H2.6", "L3H2.4", "L3H2.2" or "L3H2.0". This graph shows the results concerning the entire APDRG database (Uni + Non Uni), the university hospitals (Uni) and the non university hospitals (Non Uni).

**Graph 4**




The proportion of low outliers remains unchanged and reaches 5.0% for all hospitalisations, respectively 6.7% for the hospitalisations in the university hospitals and 4.0% for the hospitalisations in the non university hospitals.

## 1.8. Final corrections

The cost-weights of version 4 were therefore calculated using the data of 203,253 hospitalisations according to the "L3H2.4" method and after multiplying the costs of non university hospitals by 1.24. Only the length of stay inliers (176,651 cases) were taken into consideration to calculate the these cost-weights[9], which upon examination reveal certain anomalies that are described below. The modifications made to correct these anomalies are also indicated. In addition, the cost-weights of the APDRGs containing less than 25 inlier hospitalisations (the outlier hospitalisations being excluded from the outset) were calculated taking into account those of New York State in order to obtain more reliable values, as in the previous versions.

### *1.8.1. APDRGs containing less than 25 inlier hospitalisations*

For the APDRGs containing less than 25 inlier hospitalisations (see list in appendix C), the average length of stay (ALOS) was calculated as follows:

$$ALOS = \frac{(Nb_{CH} * ALOS_{CH}) + (25 - Nb_{CH}) * ALOS_{NY}}{25}$$

The cost-weight (CW) of these APDRGs was calculated as follows:

$$CW = \frac{(Nb_{CH} * CW_{CH}) + (25 - Nb_{CH}) * CW_{NY} * F}{25}$$

$Nb_{CH}$: number of inlier hospitalisations in all the data (Uni + Non Uni)

$ALOS_{CH}$: average length of stay of inlier hospitalisations of the APDRG concerned

$ALOS_{NY}$: average length of stay in New York State of the APDRG concerned

$CW_{CH}$: cost-weight calculated from the inlier hospitalisations of the APDRG concerned

$CW_{NY}$: cost-weight in New York State of the APDRG concerned

F: correction factor[10] equal to the ratio between

- the casemix of all hospitalisations in the database calculated according to the Swiss cost-weights and
- the casemix of all hospitalisations in the database calculated according to the New York cost-weights,

the APDRGs taken into consideration being those in which there are more than 50 hospitalisations.

The low trim points (LTP) of these APDRGs were defined as the integer value immediately greater than the average length of stay (ALOS) divided par 3[11].

The high trim points (HTP) of these APDRGs were defined as the integer value of the average length of stay (ALOS) multiplied by 2,.4[9].

[9] All the hospitalisations classified in APDRGs 468, 469, 470, 476 and 477 (2,934 observations) were excluded since they cannot be invoiced according to TAR APDRG 2002.

[10] This correction factor is 0,.71.

[11] For these APDRGs the trim points are exceptionally defined by dividing and multiplying the average length of stay (ALOS) instead of the robust mean (RM).

APDRGs 61, 306, 312 and 412

APDRG 61: Myringotomy with tube insertion, age > 17.
APDRG 306: Prostatectomy, with cc.
APDRG 312: Urethral procedures, age > 17, with cc.
APDRG 412: History of malignancy, with endoscopy.

For these 4 APDRGs containing less than 25 inlier hospitalisations, the above-mentioned correction was not made since the resulting cost-weights did not correspond to the hierarchy of the APDRGs.

APDRG 456

APDRG 456: Burns, transfer to another treatment centre.

The values concerning this APDRG show that two types of hospitalisation are classified there: firstly, the hospitalisations of patients transferred from a general care hospital to a specialised treatment centre and secondly, the hospitalisations of patients transferred from a specialised treatment centre to a general care hospital. The APDRG database includes 2 inlier hospitalisations in non university hospital and 21 inlier hospitalisations in university hospital which were classified in APDRG 456. The cost-weights and average lengths of stay calculated from these cases are as follows: 1,814 and 22,5 days for the two hospitalisations in non university hospital and 10,089 and 27,2 days for the 21 hospitalisations in university hospital.

In New York State the average length of stay (ALOS) associated with this APDRG is 2 days. The hospitalisations are therefore for very short periods, following which the patient is probably transferred to a centre for the treatment of burns. This type of situation is not encountered in our hospitals since the patients are admitted directly into a specialised centre or quickly transferred into this type of centre (in which case their hospitalisation is classified in SPG 901).

In view of this observation, the definition of APDRG 456 was modified as follows: Burns, transfer to another treatment centre during the first two days of hospitalisation. A request will be sent to the grouper supplier so that version 1.4 of this product (which will be used as of 1st January 2004) classifies the hospitalisations according to this new definition.

Hospitalisations in the APDRG database lasting more than two days and classified in APDRG 456 have therefore been reclassified in the APDRGs corresponding to similar hospitalisations which would not have been followed by a transfer to another treatment centre.

The Swiss cost-weight (version 4) of APDRG 456 (based on the new, above-mentioned definition) was calculated according to the rules which apply to APDRGs containing fewer than 25 inlier hospitalisations.

### *1.8.2. Cost-weights of transplants*

APDRG 103: Heart transplant.
APDRG 302: Kidney transplant.
APDRG 480: Liver transplant.
APDRG 795: Lung transplant.
APDRG 803: Allogeneic bone marrow transplant (geno-identical donor)
APDRG 804: Autologous bone marrow transplant [Phases a and b]:
APDRG 805: Simultaneous kidney/pancreas transplant.
SPG 904: Allogeneic bone marrow transplant [non geno-identical donor].
SPG 905: Autologous bone marrow transplant [Phase a: sampling].
SPG 906: Autologous bone marrow transplant [Phase b: transplant].

The transplant cost-weights are calculated using the same method as that used to determine those in version 3.2. It has been called the "CWT" method.

The transplant cost-weights were calculated according to the rates applicable in May 2003 of the SVK agreements (contracts concerning the transplant of solid organs and the transplant of haematopoietic stem cells signed between the hospitals concerned and the Swiss Federation for common tasks of the health insurers). The cost-weight of each transplant corresponds to the rate (operating costs) divided by the average cost of hospitalisations in the university hospitals.

### *1.8.3. APDRGs 39, 40 and 42*

APDRG 39: Lens procedures with or without vitrectomy.
APDRG 40: Extraocular procedures except orbit, age > 17 years.
APDRG 42: Intraocular procedures except retina, iris, lens.

The cost-weight of APDRG 39 calculated using all data (Uni + Non Uni) amounts to 0.855, a value which is greater than those of APDRGs 40 (0.641) and 42 (0.758). However, as APDRG 39 is hierarchically below APDRGs 40 and 42, its cost-weight should be lower than those of APDRGs 40 and 42.

Since the cost-weights of APDRGs 39, 40 and 42 calculated using data from university hospitals (Uni) correspond to the hierarchy, the final (corrected) cost-weights of APDRGs 39 (0.657) and 40 (0.660) were calculated as follows:

$$\text{CW APDRG 39} = \frac{\text{CW APDRG 42 (Uni + Non Uni)} * \text{CW APDRG 39 (Uni)}}{\text{CW APDRG 42 (Uni)}}$$

$$\text{CW APDRG 40} = \frac{\text{CW APDRG 42 (Uni + Non Uni)} * \text{CW APDRG 40 (Uni)}}{\text{CW APDRG 42 (Uni)}}$$

The above correction method has been called "C1".

### *1.8.4. APDRGs 627 and 628*

APDRG 627: Neonate, birthweight >2.49 kg, without significant procedures, with major problem.
APDRG 628: Neonate, birthweight >2.49 kg, without significant procedures, with minor problem.

The cost-weight of APDRG 628 calculated using all data (Uni + Non Uni) amounts to 0.753, a value which is greater than that of APDRGs 627 (0.640). Logically however, the cost-weight of APDRG 628 should be less than that of APDRG 627.

Since the cost-weights of APDRGs 627 and 628 calculated using data from university hospitals (Uni) correspond to the hierarchy, the final (corrected) cost-weight of APDRG 627 (0.802) was calculated using the "C1" method, i.e.:

$$\text{CW APDRG 627} = \frac{\text{CW APDRG 628 (Uni + Non Uni)} * \text{CW APDRG 627 (Uni)}}{\text{CW APDRG 628 (Uni)}}$$

### *1.8.5. APDRGs 612 and 613*

APDRG 612: Neonate, 1.5-1.99 kg, without significant procedures, with major problem.
APDRG 613: Neonate, 1.5-1.99 kg, without significant procedures, with minor problem.

The cost-weight of APDRG 613 calculated using all data (Uni + Non Uni) has a value greater than that of APDRG 612, whereas logically the cost-weight of APDRG 613 should be less than that of APDRG 612.

Since the cost-weights of APDRGs 612 and 613 calculated using the 2001 data from university hospitals (Uni_01) correspond to the hierarchy, the final (corrected) cost-weight of APDRG 612 (3.526) was calculated using the "C1" method, i.e.:

$$\text{CW APDRG 612} = \frac{\text{CW APDRG 613 (Uni + Non Uni)} * \text{CW APDRG 612 (Uni\_01)}}{\text{CW APDRG 613 (Uni\_01)}}$$

### *1.8.6. APDRGs 380 and 381*

APDRG 380: Abortion, without dilatation and curettage.
APDRG 381: Abortion with dilatation, aspiration, curettage or hysterotomy.

Like the cost-weights of the above-mentioned APDRGs, the final (corrected) cost-weight of APDRG 381 was calculated using the "C1" method.

### *1.8.7. APDRGs 372 and 373*

APDRG 372: Vaginal delivery with complicating diagnoses.
APDRG 373: Vaginal delivery without complicating diagnoses.

Like the cost-weights of the above-mentioned APDRGs, the final (corrected) cost-weight of APDRG 372 was calculated using the "C1" method.

### *1.8.8. APDRGs 370 and 650*

APDRG 370: Caesarean section with cc.
APDRG 650: High risk caesarean section, with major cc.

The cost-weight of APDRG 370 calculated using all data (Uni + Non Uni) has a value greater than that of APDRG 650, whereas logically the cost-weight of APDRG 370 should be less than that of APDRG 650.

Since the cost-weights of APDRGs 650 and 370 calculated using the "L3H3" method and, exceptionally, without adjusting the costs by factor 1.24, correspond to the hierarchy, the final (corrected) cost-weight of APDRG 650 (1.238) was calculated as follows:

$$\text{CW APDRG 650} = \frac{\text{CW APDRG 370 (L3H2.4)} * \text{CW APDRG 650 (L3H3)}}{\text{CW APDRG 370 (L3H3)}}$$

The above correction method has been called "C1a".

### *1.8.9. Residual corrections*

As shown above, the cost-weight incoherences are affected by the methods used to set the trim points and some of these incoherences can therefore be corrected using one of these methods.

Consequently, two methods used to set the trim points, slightly different from the one chosen, were also applied to the data. These two methods are described below:

"M1" method

The low trim points were defined as being the nearest integer value to RM divided by 3 (instead of being defined as the integer value immediately above RM divided by 3.

The high trim points were defined as being the integer value of RM multiplied by 2.2 (instead of 2.4).

The cost-weights of 2 APDRGs were corrected using the M1 method.

"M2" method

The low and high trim points were defined using the chosen method, but the costs of the non university hospitals were not adjusted by the factor 1.24.

The cost-weights of 9 APDRGs were corrected using the M2 method.

A list of all the corrected APDRGs is given in appendix D.

### *1.8.10. APDRGs 468, 469, 470, 476 and 477*

APDRG 468: Major surgical procedures without relation with the principal diagnosis.
APDRG 469: Principal diagnosis not valid as principal diagnosis.
APDRG 470: Stays not groupable.
APDRG 476: Prostate procedures nor related to the principal diagnosis.
APDRG 477: Less important procedures nor related to the principal diagnosis.

The values of cost-weights version 4 for these five APDRGs (commonly called "trash APDRGs") are equal to those of version 3.2 multiplied by 0.85.

This factor of 0.85 is equal to the ratio between:

- the casemix of the APDRG database calculated using cost-weights version 4 and the new reimbursement formula (see below on page 17) and
- the casemix of the APDRG database calculatedusing cost-weights version 3.2 and the old reimbursement formula (see below on page 17).

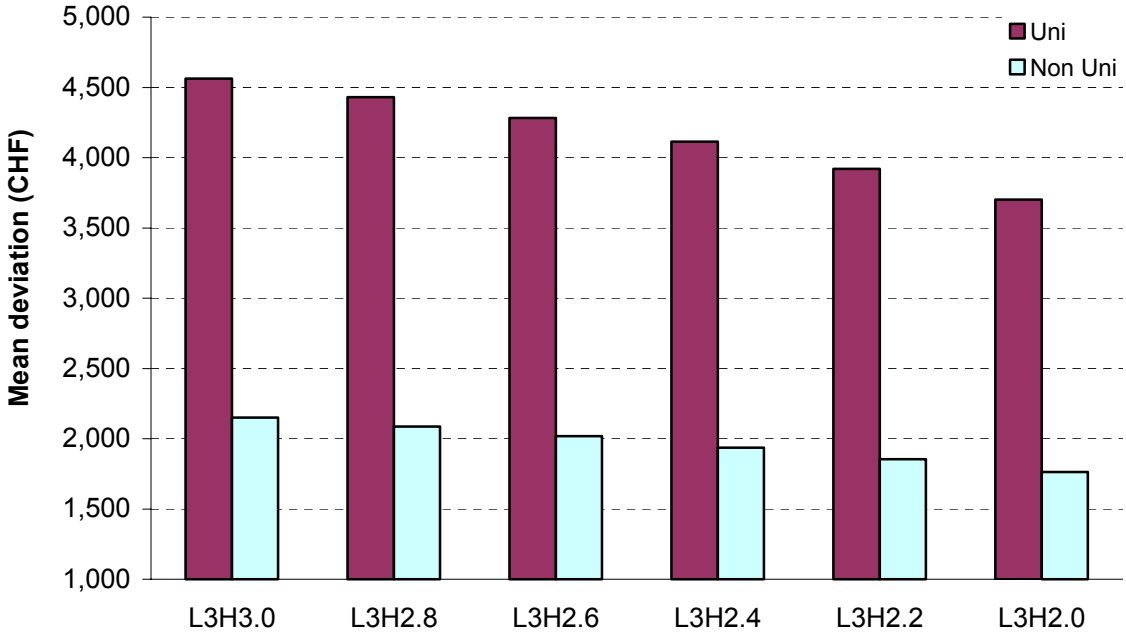
# 2. Results

## 2.1. Mean deviation between observed cost and reimbursement

The following graph shows the mean deviation between observed costs and reimbursement (the calculation was made using the absolute values of the differences). The mean deviation calculated by applying a point value based on the observed costs of hospitalisations in university hospitals (Uni) and non university hospitals (Non Uni).

**Graph 5**

**Mean deviation between observed costs and reimbursement**

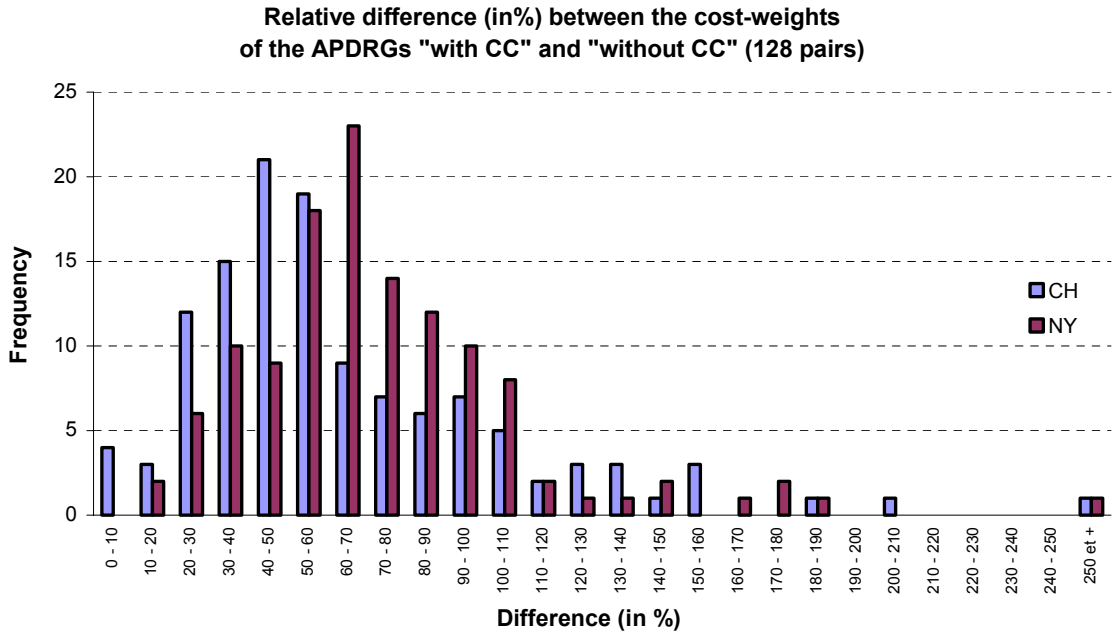



The results vary depending on the method used to set the trim points ("L3H3.0", "L3H2.8", "L3H2.6", "L3H2.4", "L3H2.2" or "L3H2.0"). The smallest mean deviation is observed when the "L3H2.0" method is used, but the proportion of outliers is then maximum (see above). The "L3H2.4" method is the most suitable to minimise both the proportion of outliers and the mean deviation between cost and reimbursement.

## 2.2. Cost-weights of APDRGs "without CC" and "with CC"

The following graph shows the differences (in relative values) between the cost-weight of the APDRGs "without CC" and the cost-weight of the APDRGs "with CC". Two series of cost-weights are compared: those of New York and Switzerland (cost-weights calculated using the "L3H2.4" method, after making the above-mentioned corrections).

**Graph 6**




The mean relative difference (in %) amounts to 73% for the New York cost-weights (P05 = 24%, median = 66% and P95 = 143%) and 67% for the Swiss cost-weights (P05 = 19%, median = 54% and P95 = 155%).

## 2.3. Differences between cost-weights versions 3 and 4

The main differences between the cost-weights of versions 3 and 4 are described below.

- The cost-weights of version 3 were calculated using data concerning the 1999 hospitalisations;
  the cost-weights of version 4 were calculated using data concerning the 1999, 2000 and 2001 hospitalisations;
  in addition, the data sources are different (see appendix A).
- The cost-weights of version 3 were calculated by weighting the costs and the lengths of stay of the observations such that the proportion of university cases in the APDRG database is similar to that of the FSO database (which contains all Swiss hospitalisations);
  the cost-weights of version 4 were calculated by adjusting the costs of the non university cases (they were multiplied by 1.24).
- The cost-weights of version 3 were calculated by setting the low and high trim points of the length of stay and of the cost with the "Gamma" method;
  The cost-weights of version 4 were calculated by setting the low and high trim points of the length of stay with the "L3H2.4" method;
- The cost-weights of version 3 were calculated by taking into consideration the hospitalisations whose cost / length of stay lie between the low and high cost / length of stay trim points respectively; the cost-weights of version 4 were calculated by taking into consideration the hospitalisations whose length of stay lies between the low and high length of stay trim points.
- The casemix of the APDRG database calculated according to cost-weights version 4 and the new reimbursement formula (see below) differs from the casemix of the same database calculated according to cost-weights version 3.2 and the old reimbursement formula. The ratio between these two casemixes is equal to 0.85 (= casemix version 4 & new formula / casemix version 3.2 & old formula).

Cost-weights version 4.1 can be obtained from address www.hospvd.ch/ise/apdrg.

## 2.4. Versions of the cost-weights, the grouper, the CHOP and the TAR APDRG as of 1 January 2004.

As of 1 January 2004, the following versions must be used:

- Cost-weights: version 4.1
- Grouper: version 1.4 (will be available in autumn 2003)
- CHOP: version 6 (available on the Federal Statistical Office web site[12])
- TAR APDRG: version 2004

[12] At address http://www.statistik.admin.ch/stat_ch/ber14/gewe/fms8001.htm.

# 3. Reimbursement formula

## 3.1. Extent of the problem

With the reimbursement formula used until the end of 2003[13], payment of the low outliers is well above their true cost (approximately 240%) and payment of the high outliers is well below their true cost (approximately 65%). A new formula was therefore required to correct this fault. The reimbursement methods described below were proposed following reimbursement simulations made using the APDRG database.

## 3.2. Cost-weight of a low outlier hospitalisation

The cost-weight CWL of a hospitalisation whose length of stay is less than the low trim point LTP (low outlier hospitalisation) is calculated as follows:

CWL = CW/ALOS * LOS * 2

where:

CW = cost-weight of the APDRG in which the hospitalisation is classified;

ALOS = average length of stay of the APDRG in which the hospitalisation is classified;

LOS = length of stay concerned.

Let R = the amount reimbursed when the cost-weight of a hospitalisation is equal to 1.000. The reimbursement of a low outlier hospitalisation therefore equals R * $CW_L$.

## 3.3. Cost-weight of a high outlier hospitalisation

The cost-weight $CW_H$ of a hospitalisation whose length of stay is greater than the high trim point (high outlier hospitalisation) is calculated taking into account two trim points:

- HPT1, which is equal to HTP, i.e. the integer value of the robust arithmetic mean RM multiplied by 2.4;
- HTP2, which is equal to the integer value of ((HTP1 – ALOS) * 2.43) + ALOS.

The cost-weight $CW_{H1}$ of a high outlier hospitalisation whose length of stay (LOS) is greater than HTP1 but less than or equal to HTP2 (HTP1 < LOS ≤ HTP2) is calculated as follows:

$CW_{H1}$ = CW + [CW/ALOS * (LOS - HTP1) * (2.43 - ((LOS - HTP1)/HTP1))]

The cost-weight $CW_{H2}$ of a high outlier hospitalisation whose length of stay (LOS) is greater than HTP2 (LOS > HTP2) is calculated as follows:

$CW_{H2}$ = CW + [CW/ALOS * (HTP2 - HTP1) * (2.43 - ((HTP2 - HTP1)/HTP1))] + [CW/ALOS * (LOS - HTP2) * 0.7]

where:

CW = cost-weight of the APDRG in which the hospitalisation is classified;

ALOS = average length of stay of the APDRG in which the hospitalisation is classified;

LOS = length of stay concerned;

HTP1 = HTP = integer value of RM * 2.4;

HTP2 = integer value of ((HTP1 – ALOS) * 2.43) + ALOS.

Let R = the amount reimbursed when the cost-weight of a hospitalisation is equal to 1.000. The reimbursement of a high outlier hospitalisation therefore equals R * $CW_{H1}$, respectively R * $CW_{H2}$.

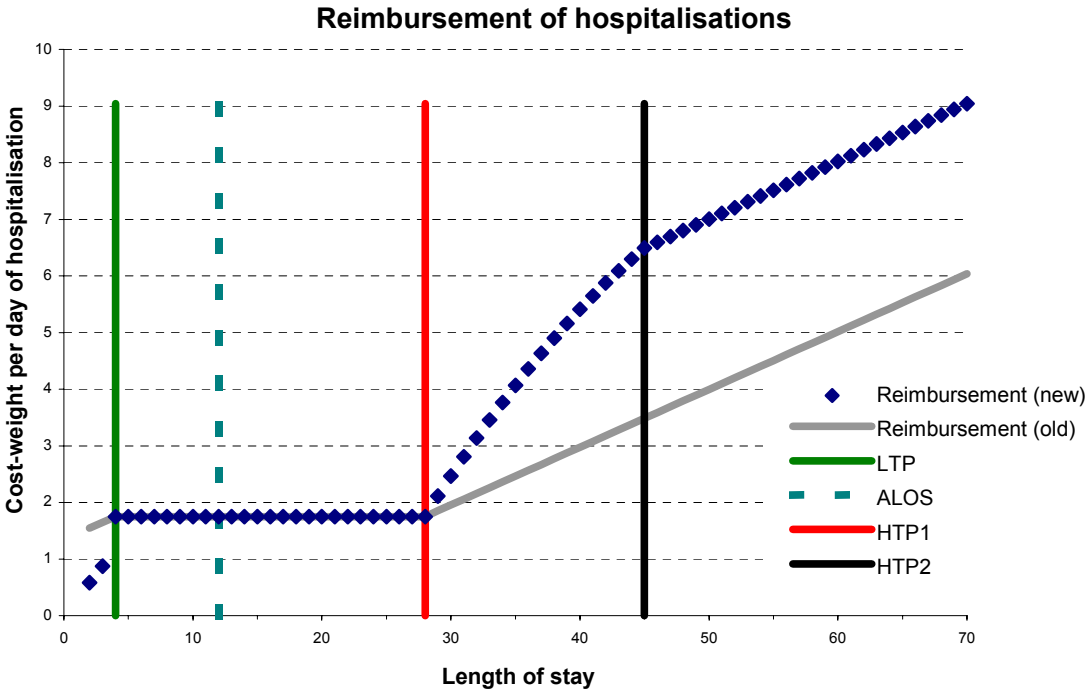
[13] According to this formula, the reimbursement of low outliers is equal to CW – 0.7 * (ALOS/CW) * (LTP - LOS) and that of the high outliers is equal to CW + 0.7 * (ALOS/CW) * (LOS - HTP), where CW = APDRG cost-weight, ALOS = APDRG average length of stay, LOS = length of stay, LTP = low trim point of the lengths of stay, HTP = high trim point of the lengths of stay.

The expression used to calculate the cost-weight of a high outlier hospitalisation appears complicated, but it is based on three quite simple principles:

1) the cost-weight of a hospitalisation is equal to the cost-weight associated with the APDRG plus a supplement which depends on the cost-weight per day (CW/ALOS) and the number of "outlier days" (this number is equal to the difference between the length of stay (LOS) and the high trim point HTP1 or HTP2);
2) the supplement of a high outlier hospitalisation whose length of stay (LOS) is between HTP1 and HTP2 (HTP1 < LOS ≤ HTP2) is equal to the cost-weight per day multiplied by the number of outlier days and by a factor whose value varies from 2.43[14] to about 1.60, depending on the number of outlier days;
3) the supplement of a high outlier hospitalisation whose length of stay (LOS) is greater than HTP2 (LOS > HTP2) equals
   - the supplement of a hospitalisation of LOS = HTP2,
   - plus the cost-weight per day multiplied by the number of outlier days greater than HTP2 and by 0.7.

As an example, the following graph shows the reimbursement for hospitalisations classified in an APDRG with a cost-weight of 1.755 and average length of stay (ALOS) of 11.5.

**Graph 7**

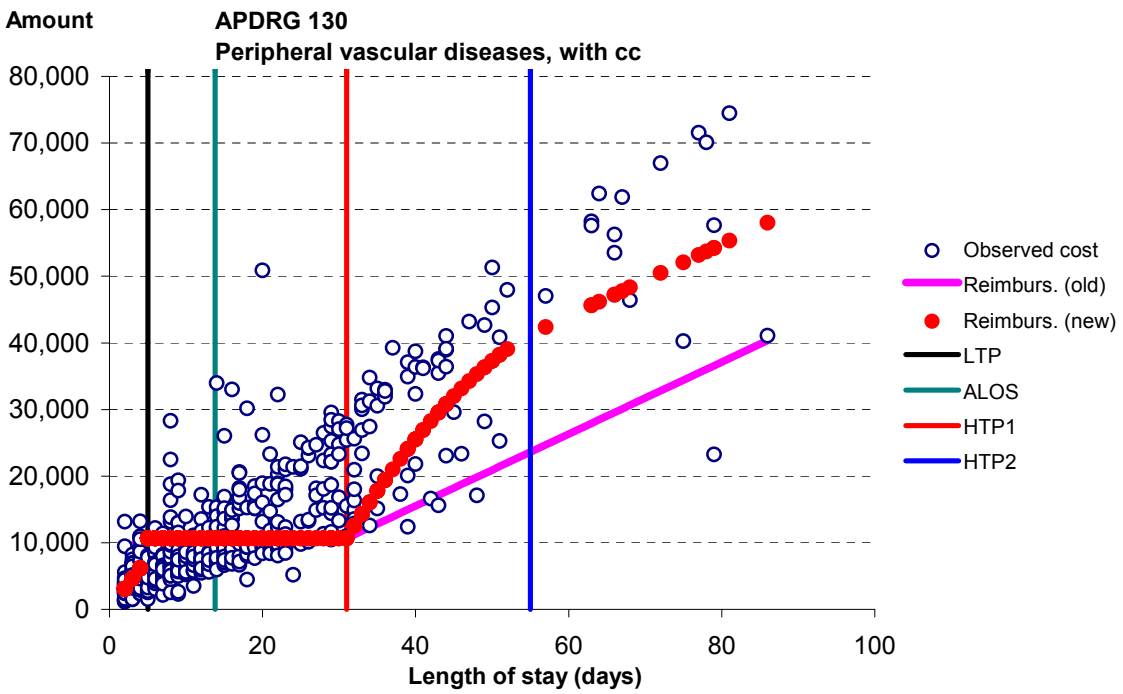



We observe that the new reimbursement formula does not change the payment of the inlier hospitalisations, that it considerably reduces the payment of the low outlier hospitalisations and that it increases the payment of the high outlier hospitalisations.

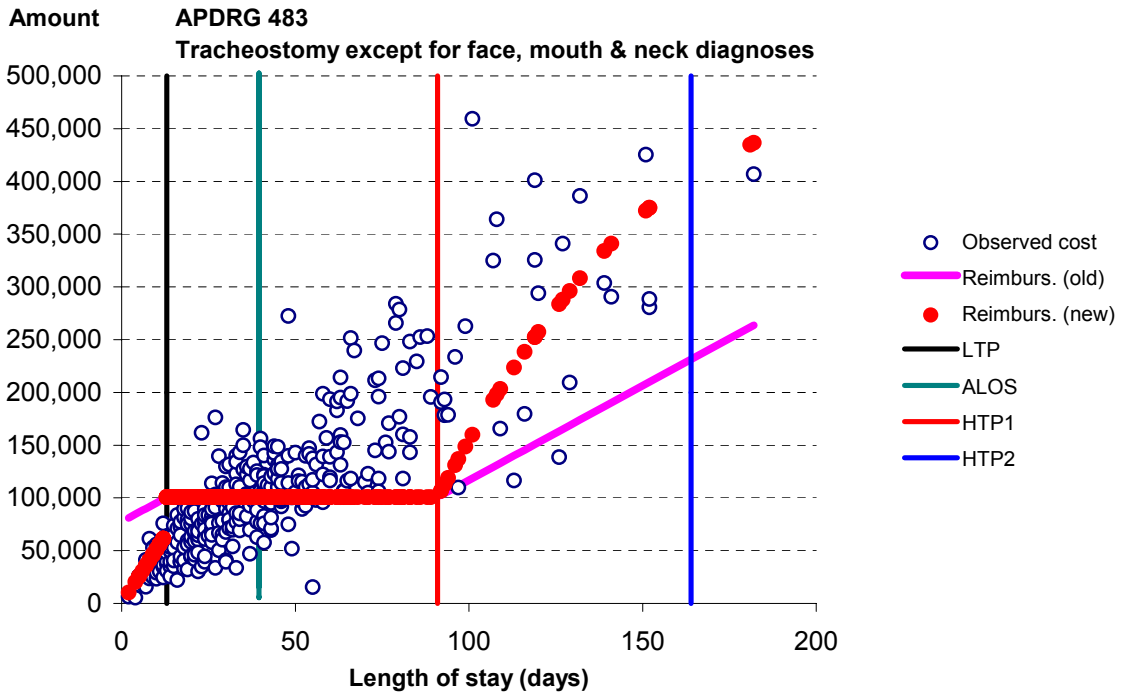
This new reimbursement formula corresponds more closely to the true costs of the outlier hospitalisations than the previous one. As an example, the following graphs show the observed costs and the reimbursement according to the old formula for hospitalisations classified in APDRGs 130 et 483.

[14] The value 2.43 was chosen since it leads to a mean reimbursement rate of 100% when this rate is calculated using hospitalisations in the APDRG database.

**Graph 8**




**Graph 9**



## 3.4. Reimbursement simulation

Applying the rules described above, the reimbursement rates (in %) observed on the APDRG database are as follows:

| | Low outliers | Inliers | High outliers | Total |
|---|---|---|---|---|
| **Uni hospitals** | 128,4% | 100,0% | 97,3% | 100,2% |
| **Non Uni hospitals** | 98,4% | 100,0% | 98,4% | 99,7% |
| **Total** | 116,3% | 100,0% | 97,7% | 100,0% |

Uni "Base rate" CHF 9 041
Non Uni "Base rate" CHF 6 842

Observing that in five non university hospitals, the increased stay of patients was not due to treatment of short term care, the above reimbursement rates were calculated after systematically deducting three days from the high outlier hospitalisations of these five hospitals.

The above-mentioned "base rates" are defined as follows: sum of the costs of the inlier hospitalisations in the APDRG database ($SC_{in}$) divided by the sum of the cost-weights of the inlier hospitalisations in the APDRG database ($SCW_{in}$), i.e. $SC_{in}$ / $SCW_{in}$.

We observe that the proposed formula can be used to calculate:

- a total reimbursement of exactly 100%,
- a reimbursement of non university hospitals very close to 100% (99.7%);
- a reimbursement of university hospitals very close to 100% (100.2%);
- a suitable reimbursement of high outlier hospitalisations (97.7%) both in the university hospitals (97.3%) and the non university hospitals (98.4%);
- a reimbursement of low outlier hospitalisations (116.3%) considerably closer to their true cost than was the case with the previous formula.

APDRG Svizzera Schweiz Suisse

# Cost-weights version 4.0

# Appendix A

## APDRG database: Number of hospitalisations per hospital and per year

Publication date 15.06.03 (V12a)



**This document can be obtained from address www.hospvd.ch/ise/apdrg**

# APDRG database:
# Number of hospitalisations per hospital and per year

| Hospital | | Year | | | |
|---|---|---|---|---|---|
| **Type** | **Name** | 1999 | 2000 | 2001 | **Total** |
| Non univ. | Brig | | 4,475 | | 4,475 |
| Univ. | CHUV (Lausanne) | 25,258 | 25,329 | 25,678 | 76,265 |
| Non univ. | EOC (Tessin) | 32,615 | 32,646 | 33,148 | 98,409 |
| Univ. | Ophthalmic hospital (Lausanne) | | 1,309 | 1,311 | 2,620 |
| Univ. | Orthopaedic hospital (Lausanne) | | 1,878 | 1,859 | 3,737 |
| Non univ. | Morges | 7,624 | | | 7,624 |
| Non univ. | Thun | | 5,050 | | 5,050 |
| Non univ. | Yverdon | | 5,073 | | 5,073 |
| | **Total** | 65,497 | 75,760 | 61,996 | 203,253 |

The database stores data on hospitalisations in the following EOC (Ente Ospedaliero Cantonale) hospitals: Bellinzona, Faido (in 1999 only), Locarno, Lugano, Mendrisio.

APDRG Svizzera Schweiz Suisse

# Cost-weights version 4.0

# Appendix B

APDRG,
proportion of the total cost from drugs and implants & medical equipment,proportion of the cost from drugs and proportion of the cost from implants & medical equipment

Publication date 15.06.03 (V12a)



**This document can be obtained from address www.hospvd.ch/ise/apdrg**

APDRG, proportion of the total cost from drugs and implants & medical equipment (Tot_Prop), proportion of the cost from drugs and proportion of the cost from implants & medical equipment (Impl_&_Med_Eqt).

The asterisk (*) indicates that the values concerning the implants & medical equipment come from data supplied by Swiss hospitals.

| APDRG | Tot_Prop | Drug | Imp_&_Med_Eqt | |
|---|---|---|---|---|
| 1 | 21.83% | 7.63% | 14.20% | (*) |
| 2 | 11.27% | 8.84% | 2.43% | |
| 4 | 19.23% | 5.82% | 13.41% | |
| 5 | 7.47% | 5.21% | 2.26% | |
| 6 | 3.31% | 3.17% | 0.14% | |
| 7 | 5.45% | 4.93% | 0.52% | |
| 8 | 4.56% | 4.22% | 0.34% | |
| 9 | 4.16% | 3.95% | 0.21% | |
| 10 | 7.51% | 7.23% | 0.28% | |
| 11 | 6.27% | 5.98% | 0.29% | |
| 12 | 2.30% | 2.26% | 0.04% | |
| 13 | 10.42% | 10.38% | 0.04% | |
| 14 | 3.73% | 3.68% | 0.05% | |
| 15 | 3.09% | 3.05% | 0.04% | |
| 16 | 2.97% | 2.94% | 0.03% | |
| 17 | 2.31% | 2.28% | 0.03% | |
| 18 | 3.20% | 3.14% | 0.06% | |
| 19 | 2.80% | 2.75% | 0.05% | |
| 20 | 11.03% | 11.00% | 0.03% | |
| 21 | 6.46% | 6.46% | 0.00% | |
| 22 | 2.97% | 2.97% | 0.00% | |
| 23 | 3.95% | 3.93% | 0.02% | |
| 24 | 3.15% | 3.12% | 0.03% | |
| 25 | 2.63% | 2.60% | 0.03% | |
| 34 | 3.25% | 3.15% | 0.10% | |
| 35 | 3.28% | 3.25% | 0.03% | |
| 36 | 5.31% | 4.77% | 0.54% | |
| 37 | 9.64% | 5.95% | 3.69% | |
| 38 | 7.64% | 7.04% | 0.60% | |
| 39 | 24.03% | 11.42% | 12.61% | |
| 40 | 14.83% | 8.55% | 6.28% | |
| 41 | 3.89% | 3.86% | 0.03% | |
| 42 | 8.66% | 6.90% | 1.76% | |
| 43 | 2.27% | 2.16% | 0.11% | |
| 44 | 8.24% | 8.24% | 0.00% | |
| 45 | 7.13% | 7.10% | 0.03% | |
| 46 | 5.82% | 5.59% | 0.23% | |
| 47 | 7.99% | 7.67% | 0.32% | |
| 48 | 7.69% | 7.66% | 0.03% | |
| 49 | 7.39% | 6.43% | 0.96% | |
| 50 | 5.16% | 5.16% | 0.00% | |
| 51 | 5.25% | 5.17% | 0.08% | |
| 52 | 4.74% | 4.49% | 0.25% | |
| 53 | 5.66% | 5.47% | 0.19% | |
| 54 | 5.92% | 5.39% | 0.53% | |
| 55 | 6.61% | 5.66% | 0.95% | |
| 56 | 6.05% | 5.99% | 0.06% | |

| APDRG | Tot_Prop | Drug | Imp_&_Med_Eqt | |
|---|---|---|---|---|
| 57 | 7.76% | 7.65% | 0.11% | |
| 58 | 4.73% | 4.63% | 0.10% | |
| 59 | 5.93% | 5.93% | 0.00% | |
| 60 | 4.45% | 4.43% | 0.02% | |
| 61 | 7.68% | 6.57% | 1.11% | |
| 62 | 4.26% | 3.97% | 0.29% | |
| 63 | 10.08% | 5.93% | 4.15% | |
| 64 | 14.41% | 13.79% | 0.62% | |
| 65 | 2.10% | 2.05% | 0.05% | |
| 66 | 3.44% | 3.44% | 0.00% | |
| 67 | 10.68% | 10.68% | 0.00% | |
| 68 | 7.81% | 7.74% | 0.07% | |
| 69 | 7.81% | 7.79% | 0.02% | |
| 70 | 3.53% | 3.53% | 0.00% | |
| 71 | 4.67% | 4.67% | 0.00% | |
| 72 | 4.91% | 4.86% | 0.05% | |
| 73 | 7.19% | 7.06% | 0.13% | |
| 74 | 4.31% | 4.31% | 0.00% | |
| 75 | 9.44% | 7.32% | 2.12% | |
| 76 | 9.68% | 8.42% | 1.26% | |
| 77 | 6.71% | 5.79% | 0.92% | |
| 78 | 5.66% | 5.34% | 0.32% | |
| 79 | 12.74% | 12.60% | 0.14% | |
| 80 | 9.54% | 9.42% | 0.12% | |
| 82 | 12.44% | 12.02% | 0.42% | |
| 83 | 3.57% | 3.53% | 0.04% | |
| 84 | 2.68% | 2.57% | 0.11% | |
| 85 | 5.75% | 5.25% | 0.50% | |
| 86 | 5.37% | 4.66% | 0.71% | |
| 87 | 5.21% | 5.11% | 0.10% | |
| 88 | 8.40% | 8.30% | 0.10% | |
| 89 | 10.15% | 10.08% | 0.07% | |
| 90 | 9.13% | 9.05% | 0.08% | |
| 92 | 7.58% | 7.47% | 0.11% | |
| 93 | 6.03% | 5.90% | 0.13% | |
| 94 | 6.85% | 5.15% | 1.70% | |
| 95 | 5.24% | 2.58% | 2.66% | |
| 96 | 7.33% | 7.28% | 0.05% | |
| 97 | 6.66% | 6.61% | 0.05% | |
| 99 | 5.78% | 5.52% | 0.26% | |
| 100 | 3.67% | 3.53% | 0.14% | |
| 101 | 7.24% | 7.09% | 0.15% | |
| 102 | 4.66% | 4.46% | 0.20% | |
| 103 | 23.72% | 17.93% | 5.79% | |
| 104 | 27.64% | 6.01% | 21.63% | |
| 105 | 33.11% | 5.46% | 27.65% | |
| 106 | 17.89% | 6.84% | 11.05% | |

APDRG, proportion of the total cost from drugs and implants & medical equipment (Tot_Prop), proportion of the cost from drugs and proportion of the cost from implants & medical equipment (Impl_&_Med_Eqt).

The asterisk (*) indicates that the values concerning the implants & medical equipment come from data supplied by Swiss hospitals.

| APDRG | Tot_Prop | Drug | Imp_&_Med_Eqt |
|---|---|---|---|
| 107 | 19.46% | 6.24% | 13.22% |
| 108 | 19.88% | 7.11% | 12.77% |
| 110 | 19.75% | 7.74% | 12.01% |
| 111 | 20.45% | 7.01% | 13.44% |
| 112 | 32.09% | 5.68% | 26.41% |
| 113 | 9.33% | 7.82% | 1.51% |
| 114 | 8.62% | 8.49% | 0.13% |
| 115 | 32.25% | 3.44% | 28.81% |
| 116 | 47.22% | 1.82% | 45.40% |
| 117 | 47.87% | 1.61% | 46.26% |
| 118 | 60.99% | 1.32% | 59.67% |
| 119 | 5.19% | 5.14% | 0.05% |
| 120 | 7.22% | 5.73% | 1.49% |
| 121 | 10.41% | 9.99% | 0.42% |
| 122 | 12.99% | 12.36% | 0.63% |
| 123 | 18.47% | 17.41% | 1.06% |
| 124 | 7.82% | 6.50% | 1.32% |
| 125 | 8.13% | 7.35% | 0.78% |
| 126 | 13.78% | 13.65% | 0.13% |
| 127 | 4.25% | 4.13% | 0.12% |
| 128 | 5.13% | 4.98% | 0.15% |
| 129 | 6.91% | 6.46% | 0.45% |
| 130 | 7.56% | 7.10% | 0.46% |
| 131 | 7.54% | 7.18% | 0.36% |
| 132 | 4.16% | 4.01% | 0.15% |
| 133 | 3.55% | 3.38% | 0.17% |
| 134 | 2.62% | 2.53% | 0.09% |
| 135 | 3.11% | 2.96% | 0.15% |
| 136 | 2.04% | 1.91% | 0.13% |
| 137 | 1.33% | 1.32% | 0.01% |
| 138 | 3.09% | 2.96% | 0.13% |
| 139 | 2.55% | 2.21% | 0.34% |
| 140 | 4.19% | 4.05% | 0.14% |
| 141 | 2.20% | 2.17% | 0.03% |
| 142 | 1.86% | 1.69% | 0.17% |
| 143 | 2.64% | 2.52% | 0.12% |
| 144 | 5.11% | 4.91% | 0.20% |
| 145 | 6.14% | 5.84% | 0.30% |
| 146 | 13.16% | 9.35% | 3.81% |
| 147 | 13.70% | 8.50% | 5.20% |
| 148 | 11.83% | 10.18% | 1.65% |
| 149 | 11.57% | 9.36% | 2.21% |
| 150 | 8.43% | 7.96% | 0.47% |
| 151 | 7.73% | 7.02% | 0.71% |
| 152 | 10.55% | 8.84% | 1.71% |
| 153 | 8.63% | 7.55% | 1.08% |
| 154 | 15.40% | 13.21% | 2.19% |
| 155 | 7.76% | 7.39% | 0.37% |
| 156 | 2.33% | 2.29% | 0.04% |
| 157 | 4.91% | 4.80% | 0.11% |
| 158 | 4.75% | 4.70% | 0.05% |
| 159 | 8.41% | 5.42% | 2.99% |
| 160 | 8.03% | 4.98% | 3.05% |
| 161 | 8.38% | 4.54% | 3.84% |
| 162 | 9.27% | 4.69% | 4.58% |
| 163 | 3.10% | 3.03% | 0.07% |
| 164 | 12.22% | 12.19% | 0.03% |
| 165 | 11.08% | 11.06% | 0.02% |
| 166 | 7.08% | 7.03% | 0.05% |
| 167 | 6.19% | 6.17% | 0.02% |
| 168 | 7.32% | 7.30% | 0.02% |
| 169 | 7.28% | 7.22% | 0.06% |
| 170 | 10.41% | 9.37% | 1.04% |
| 171 | 8.33% | 8.14% | 0.19% |
| 172 | 8.37% | 7.95% | 0.42% |
| 173 | 9.85% | 9.28% | 0.57% |
| 174 | 6.50% | 6.48% | 0.02% |
| 175 | 4.38% | 4.35% | 0.03% |
| 176 | 6.01% | 5.96% | 0.05% |
| 177 | 3.66% | 3.59% | 0.07% |
| 178 | 3.93% | 3.89% | 0.04% |
| 179 | 8.38% | 8.35% | 0.03% |
| 180 | 6.19% | 6.10% | 0.09% |
| 181 | 4.58% | 4.56% | 0.02% |
| 182 | 5.18% | 5.11% | 0.07% |
| 183 | 5.18% | 5.13% | 0.05% |
| 185 | 9.50% | 8.00% | 1.50% |
| 186 | 5.30% | 5.28% | 0.02% |
| 187 | 6.10% | 6.08% | 0.02% |
| 188 | 5.76% | 5.66% | 0.10% |
| 189 | 4.87% | 4.78% | 0.09% |
| 191 | 20.00% | 18.42% | 1.58% |
| 192 | 15.13% | 14.34% | 0.79% |
| 193 | 14.80% | 12.61% | 2.19% |
| 194 | 13.89% | 11.38% | 2.51% |
| 195 | 14.50% | 13.76% | 0.74% |
| 196 | 8.66% | 7.52% | 1.14% |
| 197 | 10.42% | 10.00% | 0.42% |
| 198 | 8.38% | 7.87% | 0.51% |
| 199 | 9.59% | 8.86% | 0.73% |
| 200 | 10.59% | 10.19% | 0.40% |
| 201 | 12.56% | 11.03% | 1.53% |
| 202 | 5.17% | 5.05% | 0.12% |
| 203 | 8.41% | 7.87% | 0.54% |

APDRG, proportion of the total cost from drugs and implants & medical equipment (Tot_Prop), proportion of the cost from drugs and proportion of the cost from implants & medical equipment (Impl_&_Med_Eqt).

The asterisk (*) indicates that the values concerning the implants & medical equipment come from data supplied by Swiss hospitals.

| APDRG | Tot_Prop | Drug | Imp_&_Med_Eqt | |
|---|---|---|---|---|
| 204 | 11.87% | 11.39% | 0.48% | |
| 205 | 4.86% | 4.65% | 0.21% | |
| 206 | 3.99% | 3.85% | 0.14% | |
| 207 | 11.95% | 10.31% | 1.64% | |
| 208 | 9.84% | 8.44% | 1.40% | |
| 209 | 26.39% | 3.03% | 23.36% | |
| 210 | 9.40% | 3.99% | 5.41% | |
| 211 | 10.31% | 3.62% | 6.69% | |
| 212 | 9.19% | 3.33% | 5.86% | |
| 213 | 7.48% | 6.97% | 0.51% | |
| 216 | 7.03% | 6.02% | 1.01% | |
| 217 | 9.37% | 6.51% | 2.86% | |
| 218 | 7.91% | 4.19% | 3.72% | |
| 219 | 10.39% | 4.32% | 6.07% | |
| 220 | 8.36% | 3.90% | 4.46% | |
| 221 | 6.91% | 4.76% | 2.15% | |
| 222 | 7.86% | 5.28% | 2.58% | |
| 223 | 6.85% | 5.12% | 1.73% | |
| 224 | 7.62% | 4.48% | 3.14% | |
| 225 | 6.53% | 4.34% | 2.19% | |
| 226 | 5.69% | 4.89% | 0.80% | |
| 227 | 5.88% | 4.93% | 0.95% | |
| 228 | 7.85% | 4.12% | 3.73% | |
| 229 | 6.47% | 4.95% | 1.52% | |
| 230 | 4.89% | 4.69% | 0.20% | |
| 231 | 5.54% | 5.04% | 0.50% | |
| 232 | 5.75% | 5.56% | 0.19% | |
| 233 | 7.01% | 5.09% | 1.92% | |
| 234 | 7.57% | 4.67% | 2.90% | |
| 235 | 2.23% | 2.02% | 0.21% | |
| 236 | 2.73% | 2.59% | 0.14% | |
| 237 | 2.25% | 2.11% | 0.14% | |
| 238 | 9.32% | 9.19% | 0.13% | |
| 239 | 6.94% | 6.65% | 0.29% | |
| 240 | 4.44% | 4.36% | 0.08% | |
| 241 | 5.01% | 4.88% | 0.13% | |
| 242 | 10.64% | 10.53% | 0.11% | |
| 243 | 2.71% | 2.58% | 0.13% | |
| 244 | 4.89% | 4.81% | 0.08% | |
| 245 | 5.13% | 5.02% | 0.11% | |
| 246 | 3.50% | 3.44% | 0.06% | |
| 247 | 2.50% | 2.39% | 0.11% | |
| 248 | 4.48% | 4.36% | 0.12% | |
| 249 | 3.19% | 3.09% | 0.10% | |
| 250 | 2.34% | 2.04% | 0.30% | |
| 251 | 3.71% | 3.12% | 0.59% | |
| 252 | 3.10% | 2.64% | 0.46% | |
| 253 | 2.73% | 2.56% | 0.17% | |
| 254 | 3.08% | 2.63% | 0.45% | |
| 255 | 3.26% | 2.57% | 0.69% | |
| 256 | 6.54% | 6.02% | 0.52% | |
| 257 | 4.62% | 3.78% | 0.84% | |
| 258 | 4.12% | 3.12% | 1.00% | |
| 259 | 3.84% | 3.45% | 0.39% | |
| 260 | 3.22% | 3.07% | 0.15% | |
| 261 | 10.04% | 6.42% | 3.62% | |
| 262 | 5.45% | 5.44% | 0.01% | |
| 263 | 7.76% | 7.37% | 0.39% | |
| 264 | 4.46% | 4.43% | 0.03% | |
| 265 | 5.03% | 4.50% | 0.53% | |
| 266 | 6.21% | 4.83% | 1.38% | |
| 267 | 4.85% | 4.84% | 0.01% | |
| 268 | 6.79% | 6.51% | 0.28% | |
| 269 | 10.09% | 8.06% | 2.03% | |
| 270 | 5.47% | 5.04% | 0.43% | |
| 271 | 5.09% | 5.05% | 0.04% | |
| 272 | 11.75% | 11.74% | 0.01% | |
| 273 | 14.96% | 14.95% | 0.01% | |
| 274 | 14.55% | 14.39% | 0.16% | |
| 275 | 12.48% | 11.49% | 0.99% | |
| 276 | 7.00% | 6.97% | 0.03% | |
| 277 | 8.81% | 8.76% | 0.05% | |
| 278 | 9.08% | 9.06% | 0.02% | |
| 279 | 5.74% | 5.72% | 0.02% | |
| 280 | 3.15% | 3.07% | 0.08% | |
| 281 | 3.33% | 3.23% | 0.10% | |
| 282 | 3.01% | 2.95% | 0.06% | |
| 283 | 4.68% | 4.65% | 0.03% | |
| 284 | 4.41% | 4.35% | 0.06% | |
| 285 | 10.87% | 10.46% | 0.41% | |
| 286 | 7.46% | 7.02% | 0.44% | |
| 287 | 11.49% | 11.09% | 0.40% | |
| 288 | 31.88% | 6.58% | 25.30% | (*) |
| 289 | 4.00% | 3.89% | 0.11% | |
| 290 | 4.29% | 4.29% | 0.00% | |
| 291 | 4.37% | 4.37% | 0.00% | |
| 292 | 11.31% | 8.10% | 3.21% | |
| 293 | 10.75% | 7.57% | 3.18% | |
| 294 | 2.74% | 2.69% | 0.05% | |
| 295 | 2.26% | 2.25% | 0.01% | |
| 296 | 4.37% | 4.32% | 0.05% | |
| 297 | 3.59% | 3.40% | 0.19% | |
| 298 | 1.99% | 1.99% | 0.00% | |
| 299 | 3.33% | 3.00% | 0.33% | |

APDRG, proportion of the total cost from drugs and implants & medical equipment (Tot_Prop), proportion of the cost from drugs and proportion of the cost from implants & medical equipment (Impl_&_Med_Eqt).

The asterisk (*) indicates that the values concerning the implants & medical equipment come from data supplied by Swiss hospitals.

| APDRG | Tot_Prop | Drug | Imp_&_Med_Eqt |
|---|---|---|---|
| 300 | 3.79% | 3.59% | 0.20% |
| 301 | 3.43% | 2.76% | 0.67% |
| 302 | 24.44% | 24.06% | 0.38% |
| 303 | 9.08% | 8.58% | 0.50% |
| 304 | 8.84% | 7.73% | 1.11% |
| 305 | 7.09% | 5.90% | 1.19% |
| 306 | 6.90% | 6.63% | 0.27% |
| 307 | 7.14% | 7.10% | 0.04% |
| 308 | 6.16% | 6.07% | 0.09% |
| 309 | 5.90% | 5.53% | 0.37% |
| 310 | 7.55% | 7.26% | 0.29% |
| 311 | 7.32% | 6.81% | 0.51% |
| 312 | 5.13% | 5.09% | 0.04% |
| 313 | 4.66% | 4.57% | 0.09% |
| 314 | 3.61% | 3.61% | 0.00% |
| 315 | 11.94% | 5.74% | 6.20% |
| 316 | 5.61% | 5.16% | 0.45% |
| 317 | 13.26% | 12.16% | 1.10% |
| 318 | 9.64% | 9.35% | 0.29% |
| 319 | 8.73% | 8.24% | 0.49% |
| 320 | 8.31% | 8.24% | 0.07% |
| 321 | 9.17% | 9.08% | 0.09% |
| 322 | 5.71% | 5.64% | 0.07% |
| 323 | 5.34% | 4.79% | 0.55% |
| 324 | 5.22% | 4.92% | 0.30% |
| 325 | 4.51% | 4.50% | 0.01% |
| 326 | 4.02% | 3.99% | 0.03% |
| 327 | 2.81% | 2.66% | 0.15% |
| 328 | 5.70% | 5.70% | 0.00% |
| 329 | 4.39% | 4.31% | 0.08% |
| 330 | 5.18% | 5.00% | 0.18% |
| 331 | 5.19% | 5.01% | 0.18% |
| 332 | 4.29% | 4.12% | 0.17% |
| 333 | 4.81% | 4.76% | 0.05% |
| 334 | 7.49% | 7.20% | 0.29% |
| 335 | 6.52% | 6.43% | 0.09% |
| 336 | 7.17% | 7.09% | 0.08% |
| 337 | 7.83% | 7.77% | 0.06% |
| 338 | 5.19% | 4.43% | 0.76% |
| 339 | 4.70% | 4.32% | 0.38% |
| 340 | 4.23% | 4.02% | 0.21% |
| 341 | 4.95% | 4.85% | 0.10% |
| 342 | 4.67% | 4.67% | 0.00% |
| 343 | 4.82% | 4.82% | 0.00% |
| 344 | 7.10% | 7.05% | 0.05% |
| 345 | 7.53% | 7.51% | 0.02% |
| 346 | 8.57% | 8.20% | 0.37% |
| 347 | 9.52% | 9.15% | 0.37% |
| 348 | 4.98% | 4.94% | 0.04% |
| 349 | 3.49% | 3.42% | 0.07% |
| 350 | 11.13% | 11.12% | 0.01% |
| 351 | 4.72% | 4.72% | 0.00% |
| 352 | 6.34% | 6.11% | 0.23% |
| 353 | 6.02% | 5.82% | 0.20% |
| 354 | 7.43% | 7.07% | 0.36% |
| 355 | 5.02% | 4.91% | 0.11% |
| 356 | 5.21% | 4.96% | 0.25% |
| 357 | 7.89% | 7.47% | 0.42% |
| 358 | 5.54% | 5.47% | 0.07% |
| 359 | 5.35% | 5.31% | 0.04% |
| 360 | 4.98% | 4.97% | 0.01% |
| 361 | 6.81% | 6.80% | 0.01% |
| 362 | 6.66% | 6.50% | 0.16% |
| 363 | 3.68% | 3.67% | 0.01% |
| 364 | 5.09% | 5.07% | 0.02% |
| 365 | 7.31% | 6.91% | 0.40% |
| 366 | 23.71% | 23.22% | 0.49% |
| 367 | 30.33% | 29.90% | 0.43% |
| 368 | 11.93% | 11.92% | 0.01% |
| 369 | 3.90% | 3.88% | 0.02% |
| 370 | 4.80% | 4.79% | 0.01% |
| 371 | 4.19% | 4.18% | 0.01% |
| 372 | 3.17% | 3.17% | 0.00% |
| 373 | 2.77% | 2.77% | 0.00% |
| 374 | 4.19% | 4.19% | 0.00% |
| 375 | 4.40% | 4.37% | 0.03% |
| 376 | 3.77% | 3.77% | 0.00% |
| 377 | 7.34% | 7.34% | 0.00% |
| 378 | 6.23% | 6.22% | 0.01% |
| 379 | 3.36% | 3.36% | 0.00% |
| 380 | 8.38% | 8.24% | 0.14% |
| 381 | 6.95% | 6.91% | 0.04% |
| 382 | 4.08% | 4.08% | 0.00% |
| 383 | 3.74% | 3.73% | 0.01% |
| 384 | 3.70% | 3.70% | 0.00% |
| 392 | 10.78% | 10.05% | 0.73% |
| 393 | 16.99% | 16.68% | 0.31% |
| 394 | 5.61% | 5.11% | 0.50% |
| 395 | 3.98% | 3.89% | 0.09% |
| 397 | 26.36% | 26.34% | 0.02% |
| 398 | 18.06% | 17.92% | 0.14% |
| 399 | 9.58% | 9.57% | 0.01% |
| 400 | 8.10% | 6.84% | 1.26% |
| 401 | 11.62% | 10.09% | 1.53% |

APDRG, proportion of the total cost from drugs and implants & medical equipment (Tot_Prop), proportion of the cost from drugs and proportion of the cost from implants & medical equipment (Impl_&_Med_Eqt).

The asterisk (*) indicates that the values concerning the implants & medical equipment come from data supplied by Swiss hospitals.

| APDRG | Tot_Prop | Drug | Imp_&_Med_Eqt | |
|---|---|---|---|---|
| 402 | 8.60% | 6.84% | 1.76% | |
| 403 | 23.70% | 23.00% | 0.70% | |
| 404 | 23.63% | 22.90% | 0.73% | |
| 406 | 10.75% | 9.61% | 1.14% | |
| 407 | 10.72% | 8.81% | 1.91% | |
| 408 | 13.44% | 11.96% | 1.48% | |
| 409 | 7.24% | 7.00% | 0.24% | |
| 410 | 38.20% | 37.36% | 0.84% | |
| 411 | 5.20% | 5.20% | 0.00% | |
| 412 | 3.97% | 3.79% | 0.18% | |
| 413 | 9.73% | 9.31% | 0.42% | |
| 414 | 9.86% | 9.40% | 0.46% | |
| 415 | 10.35% | 9.54% | 0.81% | |
| 416 | 13.12% | 12.93% | 0.19% | |
| 417 | 6.75% | 6.74% | 0.01% | |
| 418 | 9.08% | 8.99% | 0.09% | |
| 419 | 12.53% | 12.41% | 0.12% | |
| 420 | 5.68% | 5.42% | 0.26% | |
| 421 | 8.70% | 8.62% | 0.08% | |
| 422 | 3.48% | 3.46% | 0.02% | |
| 423 | 7.73% | 7.69% | 0.04% | |
| 424 | 5.94% | 4.02% | 1.92% | |
| 425 | 2.18% | 2.16% | 0.02% | |
| 426 | 2.05% | 2.02% | 0.03% | |
| 427 | 1.78% | 1.75% | 0.03% | |
| 428 | 1.52% | 1.51% | 0.01% | |
| 429 | 2.80% | 2.78% | 0.02% | |
| 430 | 1.81% | 1.80% | 0.01% | |
| 431 | 1.28% | 1.27% | 0.01% | |
| 432 | 2.82% | 2.82% | 0.00% | |
| 439 | 5.78% | 5.43% | 0.35% | |
| 440 | 6.28% | 6.17% | 0.11% | |
| 441 | 8.26% | 7.60% | 0.66% | |
| 442 | 12.21% | 9.24% | 2.97% | |
| 443 | 8.52% | 6.33% | 2.19% | |
| 444 | 6.92% | 6.91% | 0.01% | |
| 445 | 5.54% | 5.46% | 0.08% | |
| 446 | 4.32% | 4.24% | 0.08% | |
| 447 | 5.67% | 5.67% | 0.00% | |
| 448 | 2.59% | 2.59% | 0.00% | |
| 449 | 3.74% | 3.67% | 0.07% | |
| 450 | 2.95% | 2.93% | 0.02% | |
| 451 | 2.16% | 2.16% | 0.00% | |
| 452 | 9.11% | 8.59% | 0.52% | |
| 453 | 5.26% | 4.99% | 0.27% | |
| 454 | 4.00% | 3.83% | 0.17% | |
| 455 | 2.39% | 2.29% | 0.10% | |

| APDRG | Tot_Prop | Drug | Imp_&_Med_Eqt | |
|---|---|---|---|---|
| 456 | 6.00% | 5.00% | 1.00% | |
| 457 | 6.00% | 5.00% | 1.00% | |
| 458 | 6.46% | 5.45% | 1.01% | |
| 459 | 5.77% | 5.75% | 0.02% | |
| 460 | 5.21% | 5.21% | 0.00% | |
| 461 | 16.04% | 5.83% | 10.21% | |
| 462 | 3.42% | 3.35% | 0.07% | |
| 463 | 6.10% | 6.00% | 0.10% | |
| 464 | 2.66% | 2.58% | 0.08% | |
| 465 | 4.47% | 4.11% | 0.36% | |
| 466 | 7.33% | 5.73% | 1.60% | |
| 467 | 5.66% | 5.63% | 0.03% | |
| 468 | 0.00% | 0.00% | 0.00% | |
| 469 | 0.00% | 0.00% | 0.00% | |
| 470 | 0.00% | 0.00% | 0.00% | |
| 471 | 36.08% | 4.25% | 31.83% | (*) |
| 472 | 0.00% | 0.00% | 0.00% | |
| 475 | 17.03% | 16.45% | 0.58% | |
| 476 | 0.00% | 0.00% | 0.00% | |
| 477 | 0.00% | 0.00% | 0.00% | |
| 478 | 19.78% | 6.86% | 12.92% | |
| 479 | 26.52% | 6.19% | 20.33% | |
| 480 | 20.75% | 20.03% | 0.72% | |
| 482 | 11.93% | 10.48% | 1.45% | |
| 483 | 19.75% | 17.43% | 2.32% | |
| 491 | 24.92% | 3.10% | 21.82% | |
| 493 | 10.42% | 10.00% | 0.42% | |
| 494 | 8.38% | 7.87% | 0.51% | |
| 530 | 15.27% | 12.58% | 2.69% | |
| 531 | 9.99% | 7.49% | 2.50% | |
| 532 | 6.36% | 6.26% | 0.10% | |
| 533 | 7.17% | 7.09% | 0.08% | |
| 534 | 17.73% | 10.88% | 6.85% | |
| 535 | 6.63% | 6.57% | 0.06% | |
| 536 | 8.18% | 7.44% | 0.74% | |
| 538 | 15.89% | 13.54% | 2.35% | |
| 539 | 12.85% | 11.70% | 1.15% | |
| 540 | 14.58% | 14.35% | 0.23% | |
| 541 | 10.36% | 10.20% | 0.16% | |
| 542 | 8.09% | 8.02% | 0.07% | |
| 543 | 7.11% | 6.77% | 0.34% | |
| 544 | 8.00% | 7.63% | 0.37% | |
| 545 | 17.61% | 9.01% | 8.60% | (*) |
| 546 | 19.53% | 8.54% | 10.99% | |
| 547 | 20.42% | 9.19% | 11.23% | |
| 548 | 31.16% | 5.42% | 25.74% | |
| 549 | 20.82% | 12.90% | 7.92% | |

APDRG, proportion of the total cost from drugs and implants & medical equipment (Tot_Prop), proportion of the cost from drugs and proportion of the cost from implants & medical equipment (Impl_&_Med_Eqt).

The asterisk (*) indicates that the values concerning the implants & medical equipment come from data supplied by Swiss hospitals.

| APDRG | Tot_Prop | Drug | Imp_&_Med_Eqt | |
|---|---|---|---|---|
| 550 | 19.67% | 8.57% | 11.10% | |
| 551 | 7.65% | 7.60% | 0.05% | |
| 552 | 11.60% | 11.45% | 0.15% | |
| 553 | 13.82% | 12.45% | 1.37% | |
| 554 | 7.84% | 5.45% | 2.39% | |
| 555 | 20.36% | 18.38% | 1.98% | |
| 556 | 14.75% | 14.29% | 0.46% | |
| 557 | 13.76% | 13.42% | 0.34% | |
| 558 | 27.68% | 5.60% | 22.08% | (*) |
| 559 | 7.59% | 5.84% | 1.75% | |
| 560 | 6.18% | 5.96% | 0.22% | |
| 561 | 10.02% | 9.89% | 0.13% | |
| 562 | 9.53% | 9.40% | 0.13% | |
| 563 | 7.51% | 7.47% | 0.04% | |
| 564 | 6.99% | 6.43% | 0.56% | |
| 565 | 10.90% | 9.87% | 1.03% | |
| 566 | 7.37% | 7.24% | 0.13% | |
| 567 | 10.35% | 9.40% | 0.95% | |
| 568 | 10.18% | 9.79% | 0.39% | |
| 569 | 7.92% | 7.83% | 0.09% | |
| 570 | 6.96% | 6.92% | 0.04% | |
| 571 | 8.38% | 8.27% | 0.11% | |
| 572 | 10.29% | 10.08% | 0.21% | |
| 573 | 6.98% | 6.64% | 0.34% | |
| 574 | 12.31% | 12.27% | 0.04% | |
| 575 | 17.18% | 16.37% | 0.81% | |
| 576 | 26.40% | 26.26% | 0.14% | |
| 577 | 20.26% | 19.88% | 0.38% | |
| 578 | 20.10% | 19.73% | 0.37% | |
| 579 | 20.05% | 18.26% | 1.79% | |
| 580 | 11.15% | 10.98% | 0.17% | |
| 581 | 19.09% | 16.03% | 3.06% | |
| 582 | 9.44% | 9.24% | 0.20% | |
| 583 | 17.25% | 12.98% | 4.27% | |
| 584 | 14.60% | 14.41% | 0.19% | |
| 585 | 16.38% | 15.00% | 1.38% | |
| 586 | 10.00% | 9.90% | 0.10% | |
| 587 | 10.00% | 9.90% | 0.10% | |
| 602 | 3.47% | 3.47% | 0.00% | |
| 603 | 0.00% | 0.00% | 0.00% | |
| 604 | 3.62% | 3.57% | 0.05% | |
| 605 | 0.00% | 0.00% | 0.00% | |
| 606 | 4.52% | 4.31% | 0.21% | |
| 607 | 2.68% | 2.67% | 0.01% | |
| 608 | 0.00% | 0.00% | 0.00% | |
| 609 | 8.11% | 7.03% | 1.08% | |
| 610 | 3.05% | 3.00% | 0.05% | |

| APDRG | Tot_Prop | Drug | Imp_&_Med_Eqt | |
|---|---|---|---|---|
| 611 | 4.88% | 4.86% | 0.02% | |
| 612 | 1.90% | 1.88% | 0.02% | |
| 613 | 1.24% | 1.24% | 0.00% | |
| 614 | 0.99% | 0.99% | 0.00% | |
| 615 | 3.05% | 3.00% | 0.05% | |
| 616 | 3.05% | 3.00% | 0.05% | |
| 617 | 4.19% | 4.14% | 0.05% | |
| 618 | 2.10% | 2.10% | 0.00% | |
| 619 | 0.76% | 0.76% | 0.00% | |
| 620 | 0.76% | 0.76% | 0.00% | |
| 621 | 0.70% | 0.70% | 0.00% | |
| 622 | 8.09% | 5.68% | 2.41% | |
| 623 | 6.04% | 5.34% | 0.70% | |
| 624 | 1.71% | 1.71% | 0.00% | |
| 626 | 4.80% | 4.72% | 0.08% | |
| 627 | 3.20% | 3.19% | 0.01% | |
| 628 | 1.62% | 1.61% | 0.01% | |
| 629 | 1.36% | 1.35% | 0.01% | |
| 630 | 1.17% | 1.17% | 0.00% | |
| 631 | 1.57% | 1.57% | 0.00% | |
| 633 | 3.05% | 3.00% | 0.05% | |
| 634 | 5.43% | 5.43% | 0.00% | |
| 635 | 3.05% | 3.00% | 0.05% | |
| 636 | 3.05% | 3.00% | 0.05% | |
| 637 | 26.96% | 25.51% | 1.45% | |
| 638 | 19.08% | 18.40% | 0.68% | |
| 639 | 6.00% | 5.70% | 0.30% | |
| 640 | 3.90% | 3.64% | 0.26% | |
| 641 | 3.05% | 3.00% | 0.05% | |
| 650 | 5.17% | 5.11% | 0.06% | |
| 651 | 4.24% | 4.24% | 0.00% | |
| 652 | 4.36% | 4.35% | 0.01% | |
| 700 | 5.43% | 5.38% | 0.05% | |
| 701 | 15.35% | 15.00% | 0.35% | |
| 702 | 17.00% | 16.47% | 0.53% | |
| 703 | 15.35% | 15.00% | 0.35% | |
| 704 | 15.35% | 15.00% | 0.35% | |
| 705 | 16.65% | 16.28% | 0.37% | |
| 706 | 15.00% | 14.55% | 0.45% | |
| 707 | 15.35% | 15.00% | 0.35% | |
| 708 | 17.41% | 17.30% | 0.11% | |
| 709 | 15.35% | 15.00% | 0.35% | |
| 710 | 15.35% | 15.00% | 0.35% | |
| 711 | 15.92% | 15.66% | 0.26% | |
| 712 | 15.00% | 14.70% | 0.30% | |
| 713 | 15.00% | 14.70% | 0.30% | |
| 714 | 10.11% | 10.08% | 0.03% | |

APDRG, proportion of the total cost from drugs and implants & medical equipment (Tot_Prop), proportion of the cost from drugs and proportion of the cost from implants & medical equipment (Impl_&_Med_Eqt).

The asterisk (*) indicates that the values concerning the implants & medical equipment come from data supplied by Swiss hospitals.

| APDRG | Tot_Prop | Drug | Imp_&_Med_Eqt | |
|---|---|---|---|---|
| 715 | 10.11% | 10.08% | 0.03% | |
| 716 | 8.00% | 7.98% | 0.02% | |
| 730 | 14.34% | 12.01% | 2.33% | |
| 731 | 15.35% | 8.38% | 6.97% | |
| 732 | 10.95% | 8.23% | 2.72% | |
| 733 | 6.27% | 5.67% | 0.60% | |
| 734 | 4.55% | 4.54% | 0.01% | |
| 737 | 13.65% | 2.92% | 10.73% | |
| 738 | 9.59% | 6.19% | 3.40% | |
| 739 | 10.95% | 5.24% | 5.71% | |
| 740 | 25.84% | 25.75% | 0.09% | |
| 743 | 3.83% | 3.83% | 0.00% | |
| 744 | 4.18% | 4.17% | 0.01% | |
| 745 | 2.11% | 2.11% | 0.00% | |
| 746 | 3.12% | 3.12% | 0.00% | |
| 747 | 3.46% | 3.44% | 0.02% | |
| 748 | 2.06% | 2.04% | 0.02% | |
| 749 | 2.77% | 2.77% | 0.00% | |
| 750 | 3.22% | 3.19% | 0.03% | |
| 751 | 2.11% | 2.09% | 0.02% | |
| 752 | 2.00% | 2.00% | 0.00% | |
| 753 | 2.84% | 2.82% | 0.02% | |
| 754 | 1.00% | 1.00% | 0.00% | |
| 755 | 32.67% | 4.10% | 28.57% | |
| 756 | 33.30% | 3.61% | 29.69% | |
| 757 | 5.38% | 4.36% | 1.02% | |
| 758 | 4.50% | 4.13% | 0.37% | |
| 759 | 14.00% | 1.00% | 13.00% | |
| 760 | 48.20% | 48.20% | 0.00% | |
| 761 | 3.52% | 3.51% | 0.01% | |
| 762 | 1.32% | 1.31% | 0.01% | |
| 763 | 1.91% | 1.88% | 0.03% | |
| 764 | 2.35% | 2.31% | 0.04% | |
| 765 | 2.09% | 2.03% | 0.06% | |
| 766 | 3.61% | 3.57% | 0.04% | |
| 767 | 4.18% | 4.10% | 0.08% | |
| 768 | 2.64% | 2.61% | 0.03% | |
| 769 | 2.14% | 2.13% | 0.01% | |
| 770 | 14.01% | 14.01% | 0.00% | |
| 771 | 4.64% | 4.64% | 0.00% | |
| 772 | 4.79% | 4.79% | 0.00% | |
| 773 | 4.66% | 4.65% | 0.01% | |
| 774 | 2.75% | 2.73% | 0.02% | |
| 775 | 2.64% | 2.64% | 0.00% | |
| 776 | 2.56% | 2.55% | 0.01% | |
| 777 | 2.16% | 2.15% | 0.01% | |
| 778 | 3.29% | 3.29% | 0.00% | |
| 779 | 2.30% | 2.29% | 0.01% | |
| 780 | 17.90% | 17.10% | 0.80% | |
| 781 | 31.46% | 30.97% | 0.49% | |
| 782 | 23.30% | 23.10% | 0.20% | |
| 783 | 24.51% | 24.27% | 0.24% | |
| 784 | 4.31% | 4.31% | 0.00% | |
| 785 | 8.74% | 8.05% | 0.69% | |
| 786 | 11.19% | 9.69% | 1.50% | |
| 787 | 10.13% | 8.60% | 1.53% | |
| 789 | 23.00% | 3.92% | 19.08% | |
| 790 | 8.00% | 7.06% | 0.94% | |
| 791 | 8.30% | 7.61% | 0.69% | |
| 792 | 19.20% | 15.00% | 4.20% | |
| 793 | 18.91% | 14.71% | 4.20% | |
| 794 | 13.41% | 12.65% | 0.76% | |
| 795 | 23.80% | 18.00% | 5.80% | |
| 796 | 19.78% | 6.86% | 12.92% | |
| 797 | 26.52% | 6.19% | 20.33% | |
| 798 | 7.00% | 6.79% | 0.21% | |
| 799 | 7.00% | 6.79% | 0.21% | |
| 800 | 7.00% | 6.79% | 0.21% | |
| 801 | 7.00% | 6.79% | 0.21% | |
| 802 | 10.30% | 10.00% | 0.30% | |
| 803 | 10.30% | 10.00% | 0.30% | |
| 804 | 10.00% | 9.70% | 0.30% | |
| 805 | 10.00% | 9.70% | 0.30% | |
| 806 | 10.00% | 9.70% | 0.30% | |
| 807 | 33.00% | 3.30% | 29.70% | |
| 808 | 32.00% | 5.44% | 26.56% | |
| 809 | 20.00% | 7.00% | 13.00% | |

| SPG | Tot_Prop | Drug | Imp_&_Med_Eqt | |
|---|---|---|---|---|
| 900 | 0.00% | 0.00% | 0.00% | |
| 901 | 0.00% | 0.00% | 0.00% | |
| 902 | 76.74% | 5.74% | 71.00% | (*) |
| 903 | 67.01% | 9.01% | 58.00% | (*) |
| 904 | 10.30% | 10.00% | 0.30% | |
| 905 | 10.00% | 9.70% | 0.30% | |
| 906 | 10.00% | 9.70% | 0.30% | |

The value of the Drug variable of SPG 902 is equal to the average of the values of APDRGs 104 and 105.

The value of the Drug variable of SPG 903 is equal to that of APDRG 545.

The values of SPG 904 are equal to those of APDRG 803, the values of SPGs 905 and 906 are equal to those of APDRG 804.

APDRG Svizzera Schweiz Suisse

# Cost-weights version 4.0

# Appendix C

## APDRGs containing less than 25 inlier hospitalisations

Publication date 15.06.03 (V12a)



**This document can be obtained from address www.hospvd.ch/ise/apdrg**

# APDRGs containing less than 25 inlier hospitalisations

| MDC | T | AP-DRG | Title | Nr inliers |
|---|---|---|---|---|
| 1 | M | 22 | Hypertensive encephalopathy | 13 |
| 2 | M | 43 | Hyphema | 13 |
| 3 | P | 49 | Major head & neck procedures except for malignancy | 7 |
| 3 | P | 51 | Salivary gland procedures except sialoadenectomy | 13 |
| 3 | M | 67 | Epiglottitis | 18 |
| 5 | P | 115 | Perm cardiac pacemaker impl w AMI,heart failure or shock | 7 |
| 5 | M | 137 | Cardiac congenital & valvular disorders age <18 | 19 |
| 3 | P | 168 | Mouth procedures w cc | 14 |
| 7 | P | 195 | Cholecystectomy w c.d.e. w cc | 12 |
| 7 | P | 196 | Cholecystectomy w c.d.e. w/o cc | 15 |
| 7 | P | 201 | Other hepatobiliary or pancreas O.R. procedures | 15 |
| 8 | P | 221 | Knee procedures w cc | 12 |
| 10 | P | 285 | Amputat of low limb for endocrine,nutrit,& metabol disorders | 10 |
| 10 | P | 287 | Skin graft & wound debrid for endoc,nutrit & metab disorders | 9 |
| 10 | P | 291 | Thyroglossal procedures | 11 |
| 10 | P | 292 | Other endocrine, nutrit & metab O.R. proc w cc | 7 |
| 10 | P | 293 | Other endocrine, nutrit & metab O.R. proc w/o cc | 16 |
| 11 | P | 314 | Urethral procedures age <18 | 11 |
| 11 | M | 317 | Admit for renal dialysis | 18 |
| 11 | M | 327 | Kidney & urinary tract signs & symptoms age <18 | 18 |
| 11 | M | 328 | Urethral stricture age >17 w cc | 12 |
| 11 | M | 330 | Urethral stricture age <18 | 1 |
| 12 | P | 344 | Other male reproductive syst O.R. proc for malignancy | 20 |
| 12 | M | 351 | Sterilization, male | 0 |
| 14 | P | 375 | Vaginal delivery w O.R. proc except steril &/or D&C | 23 |
| 16 | P | 393 | Splenectomy age <18 | 11 |
| 18 | M | 417 | Septicemia age <18 | 16 |
| 19 | P | 424 | O.R. procedure w principal diagnoses of mental illness | 13 |
| 19 | M | 431 | Childhood mental disorders | 21 |
| 21 | P | 439 | Skin grafts for injuries | 22 |
| 21 | M | 444 | Injuries to unspecified or multiple sites age >17 w cc | 23 |
| 21 | M | 448 | Allergic reactions age <18 | 4 |
| 21 | M | 454 | Other injury, poisoning & toxic effect diagnosis w cc | 19 |
| 22 | M | 456 | Burns, transferred to another acute care facility | 5 |
| 22 | M | 457 | Extensive burns w/o O.R. procedure | 1 |
| 22 | P | 472 | Extensive burns w O.R. procedure | 3 |
| 2 | M | 535 | Eye disorders w major cc | 24 |
| 13 | M | 572 | Female reproductive disorders w major cc | 16 |
| 16 | P | 575 | Blood, blood forming organs & immunological procedures w major cc | 4 |
| 3 | M | 587 | ENT & mouth disorders age <18 w major cc | 14 |
| 15 | M | 602 | Neonate, birthwt <750g, discharged alive | 24 |
| 15 | M | 603 | Neonate, birthwt <750g, died | 3 |
| 15 | M | 605 | Neonate, birthwt 750-999g, died | 3 |
| 15 | P | 606 | Neonate, birthwt 1000-1499g, w signif or proc, discharged alive | 10 |

| MDC | T | AP-DRG | Title | Nr inliers |
|---|---|---|---|---|
| 15 | M | 608 | Neonate, birthwt 1000-1499g, died | 1 |
| 15 | P | 609 | Neonate, birthwt 1500-1999g, w signif or proc, w mult major prob | 3 |
| 15 | P | 610 | Neonate, birthwt 1500-1999g, w signif or proc, w/o mult major prob | 0 |
| 15 | M | 613 | Neonate, birthwt 1500-1999g, w/o signif or proc, w minor prob | 20 |
| 15 | P | 615 | Neonate, birthwt 2000-2499g, w signif or proc, w mult major prob | 5 |
| 15 | P | 616 | Neonate, birthwt 2000-2499g, w signif or proc, w/o mult major prob | 0 |
| 15 | M | 619 | Neonate, birthwt 2000-2499g, w/o signif or proc, w minor prob | 13 |
| 15 | P | 623 | Neonate, birthwt >2499g, w signif or proc, w/o mult major prob | 15 |
| 15 | P | 624 | Neonate, birthwt >2499g, w minor abdom procedure | 10 |
| 4 | M | 631 | Bpd and oth chronic respiratory diseases arising in perinatal period | 0 |
| 23 | M | 633 | Multiple, other and unspecified congenital anomalies, w cc | 2 |
| 23 | M | 634 | Multiple, other and unspecified congenital anomalies, w/o cc | 6 |
| 15 | M | 635 | Neonatal aftercare for weight gain | 2 |
| 23 | M | 636 | Infant aftercare for weight gain, age >28 days <1 year | 5 |
| 15 | M | 638 | Neonate, died w/in one day of birth, not born here | 19 |
| 15 | M | 641 | Neonate, birthweight >2499g, w ecmo | 10 |
| 24 | P | 700 | Tracheostomy for hiv infection | 0 |
| 24 | P | 701 | Hiv w o.r procedure & ventilator or nutritional support | 1 |
| 24 | P | 702 | Hiv w o.r procedure w multiple major related infections | 2 |
| 24 | P | 703 | Hiv w o.r procedure w major related diagnosis | 4 |
| 24 | P | 704 | Hiv w o.r procedure w/o major related diagnosis | 0 |
| 24 | M | 705 | Hiv w multiple major related infections w TB | 0 |
| 24 | M | 706 | Hiv w multiple major related infections w/o TB | 15 |
| 24 | M | 707 | Hiv w ventilator or nutritional support | 2 |
| 24 | M | 708 | Hiv w major related diagnosis, discharged ama | 1 |
| 24 | M | 709 | Hiv w major related diag w mult major or signif diag w TB | 0 |
| 24 | M | 710 | Hiv w major related diag w mult major or signif diag w/o TB | 0 |
| 24 | M | 711 | Hiv w major related diag w/o mult major or signif diag w TB | 4 |
| 24 | M | 713 | Hiv w significant related diagnosis, discharged ama | 0 |
| 24 | M | 714 | Hiv w significant related diagnosis | 0 |
| 24 | M | 715 | Hiv w other related diagnosis | 0 |
| 24 | M | 716 | Hiv w/o other related diagnosis | 24 |
| 25 | P | 730 | Craniotomy for multiple significant trauma | 20 |
| 1 | P | 737 | Ventricular shunt revision age <18 | 5 |
| 1 | P | 738 | Craniotomy age <18 w cc | 22 |
| 20 | M | 743 | Opioid abuse or dependence, left against medical advice | 0 |
| 20 | M | 744 | Opioid abuse or dependence w cc | 15 |
| 20 | M | 745 | Opioid abuse or dependence w/o cc | 22 |
| 20 | M | 746 | Cocaine or other drug abuse or dependence, left against medical advice | 14 |
| 20 | M | 749 | Alcohol abuse or dependence, left against medical advice | 21 |
| 21 | M | 752 | Lead poisoning | 0 |
| 23 | M | 754 | Tertiary aftercare, age =>1 year | 0 |
| 3 | P | 759 | Multiple channel cochlear implants | 0 |
| 16 | M | 760 | Hemophilia factors VIII and IX | 7 |
| 1 | M | 761 | Traumatic stupor & coma, coma >1 hr | 0 |
| 4 | M | 770 | Respiratory infections & inflammations age <18 w cc | 4 |
| 6 | M | 778 | Other digestive system diagnoses age <18 w cc | 18 |
| 17 | M | 782 | Acute leukemia w/o major O.R. procedure age >17 w cc | 23 |
| 16 | M | 784 | Acquired hemolytic anemia or sickle cell crisis age <18 | 11 |
| 7 | P | 787 | Laparoscopic cholecystectomy w c.d.e | 16 |

| MDC | T | AP-DRG | Title | Nr inliers |
|---|---|---|---|---|
| 8 | P | 790 | Wound debrid & skin grft for open wnd,ms & conn tiss dis,exc hand | 6 |
| 21 | P | 791 | Wound debridements for open wound injuries | 0 |
| 25 | P | 792 | Craniotomy for multiple sig trauma with non-traumatic major cc | 2 |
| 25 | M | 794 | Diag for multiple significant trauma with non-traumatic major cc | 19 |
| 4 | P | 798 | Tuberculosis w operating room procedure | 9 |
| 4 | M | 799 | Tuberculosis, left against medical advice | 0 |
| 4 | M | 800 | Tuberculosis w cc | 20 |
| 4 | M | 802 | Pneumocystosis | 2 |
| 8 | P | 806 | Combined anterior/posterior spinal fusion w cc | 7 |
| 8 | P | 807 | Combined anterior/posterior spinal fusion w/o cc | 16 |

For 4 APDRGs containing less than 25 inlier hospitalisations, the correction taking account of the cost-weights for New York State was not made since the resulting cost-weights did not correspond to the hierarchy of the APDRGs. These APDRGs are as follows:

| MDC | T | AP-DRG | Title | Nr inliers |
|---|---|---|---|---|
| 3 | P | 61 | Myringotomy w tube insertion age >17 | 9 |
| 11 | P | 306 | Prostatectomy w cc | 6 |
| 11 | P | 312 | Urethral procedures age >17 w cc | 18 |
| 17 | M | 412 | History of malignancy w endoscopy | 7 |



APDRG Svizzera Schweiz Suisse

# Cost-weights version 4.0

# Appendix D

## APDRGs whose cost-weights have been corrected

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**This document can be obtained from address www.hospvd.ch/ise/apdrg**

# APDRGs whose cost-weights have been corrected

| AP-DRG | Title | Number of cases | Initial cost-weight | Final cost-weight | Diff. (%) | Method used |
|---|---|---|---|---|---|---|
| 39 | Lens procedures with or without vitrectomy | 2'125 | 0.855 | 0.657 | -23.2% | C1 |
| 40 | Extraocular procedures except orbit age >17 | 679 | 0.641 | 0.660 | 2.9% | C1 |
| 103 | Heart transplant | 23 | 18.287 | 9.420 | -48.5% | CWT |
| 107 | Coronary bypass w/o cardiac cath | 504 | 2.929 | 3.246 | 10.8% | M2 |
| 110 | Major cardiovascular procedures w cc | 275 | 2.949 | 3.161 | 7.2% | M2 |
| 117 | Cardiac pacemaker revision except device replacement | 56 | 1.522 | 1.581 | 3.9% | M2 |
| 118 | Cardiac pacemaker device replacement | 113 | 1.480 | 1.586 | 7.2% | M2 |
| 165 | Appendectomy w complicated principal diag w/o cc | 474 | 0.865 | 0.830 | -4.1% | M2 |
| 171 | Other digestive system O.R. procedures w/o cc | 286 | 0.870 | 0.797 | -8.4% | M2 |
| 226 | Soft tissue procedures w cc | 70 | 1.625 | 1.686 | 3.7% | M2 |
| 266 | Skin graft &/or debrid exc for skin ulcer, cellulitis w/o cc | 542 | 0.797 | 0.816 | 2.4% | M1 |
| 268 | Skin, subcutaneous tissue & breast plastic procedures | 66 | 0.812 | 0.801 | -1.4% | M1 |
| 302 | Kidney transplant | 68 | 3.181 | 6.887 | ##### | CWT |
| 307 | Prostatectomy w/o cc | 67 | 0.911 | 0.867 | -4.8% | M2 |
| 372 | Vaginal delivery w complicating diagnoses | 2'419 | 0.503 | 0.595 | 18.3% | C1 |
| 381 | Abortion w D&C, aspiration curettage or hysterotomy | 510 | 0.392 | 0.540 | 37.8% | C1 |
| 480 | Liver transplant | 51 | 9.106 | 12.992 | 42.7% | CWT |
| 612 | Neonate, birthwt 1500-1999g, w/o signif or proc, w major prob | 50 | 2.795 | 3.526 | 26.2% | C1 |
| 627 | Neonate, birthwt >2499g, w/o signif or proc, w major prob | 772 | 0.640 | 0.802 | 25.2% | C1 |
| 650 | High risk cesarean section w cc | 30 | 1.118 | 1.238 | 10.7% | C1a |
| 757 | Back & neck procedures except spinal fusion w cc | 100 | 1.620 | 1.693 | 4.5% | M2 |
| 795 | Lung transplant | 12 | 19.781 | 15.881 | -19.7% | CWT |
| 803 | Allogeneic bone marrow transplant | 0 | 25.851 | 21.597 | -16.5% | CWT |
| 804 | Autologous bone marrow transplant | 9 | 9.591 | 7.112 | -25.8% | CWT |
| 805 | Simultaneous kidney/pancreas transplant | 0 | 16.095 | 13.446 | -16.5% | CWT |

| SPG | Title | Number of cases | Initial cost-weight | Final cost-weight | Diff. (%) | Method used |
|---|---|---|---|---|---|---|
| 904 | Allogeneic bone marrow transplant (non geno-identical donor) | 0 | 40.597 | 43.567 | 7.3% | CWT |
| 905 | Autologous bone marrow transplant [Phase a: "sampling"] | 111 | 0.539 | 2.440 | ##### | CWT |
| 906 | Autologous bone marrow transplant [Phase b: transplant] | 174 | 3.034 | 4.672 | 54.0% | CWT |

C1: Cost-weights corrected according to values observed in the university hospitals.

C1a: Cost-weights corrected according to values observed using the "L3H3" method, with no cost adjustment by the factor 1.24.

CWT: Cost-weights calculated according to the SVK agreements on transplants.

M1: Low trim points defined as being the nearest integer value to RM divided by 3 and high trim points defined as being the integer value of RM multiplied by 2.2.

M2: Costs of non university hospitals not adjusted by the factor 1.24.



 