

Independent Hospital Pricing Authority

Back-casting Policy

Version 5.2 May 2018



IHPA

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Acronyms and Abbreviations

ABF	Activity Based Funding
Administrator	Administrator of the National Health Funding Pool
BM	Back-casting Multipliers
IHPA	Independent Hospital Pricing Authority
NEC	National Efficient Cost
NEP	National Efficient Price
NHCDC	National Hospital Cost Data Collection
NHRA	National Health Reform Agreement
NWAU	National Weighted Activity Unit
the Act	<i>National Health Reform Act 2011</i>
VM	Volume Multipliers

Definitions

Activity based funding	<p>Refers to an activity comprising in-scope public hospital services which will be funded by the Australian Government in the manner described at clause A32(c) of the National Health Reform Agreement.</p> <p>An activity based funding (ABF) activity may take the form of a separation, presentation or service event.</p>
Back-casting	<p>The process by which the effect of significant changes to the ABF classification systems or costing methodologies are reflected in the pricing model the year prior to implementation, for the purpose of the calculation of the Commonwealth's funding for each ABF service category.</p>
National Pricing Model	<p>Refer to the link below to the <i>National Pricing Model technical Specifications</i>.</p> <p>https://www.ihoa.gov.au/what-we-do/technical-specifications-and-nwau-calculators</p>
Public hospital services	<p>From 1 July 2013, the scope of public hospital services eligible for Commonwealth funding will be¹²:</p> <ul style="list-style-type: none"> • All admitted programs, including hospital in the home programs; • All emergency department services; and • Non-admitted services that meet the criteria for inclusion in the IHOA General List.
Pricing Authority	<p>The governing body of IHOA established under the <i>National Health Reform Act 2011</i> (the Act).</p>

¹ With regard to IHOA's role in defining the scope of public hospital services, refer to the NHRA Clauses A9-A26.

² In August 2011, Governments agreed to be jointly responsible for funding growth in 'public hospital services'. As there is no standard definition or listing of public hospital services, Governments gave IHOA the task of deciding which services will be ruled 'in scope' as public hospital services and so eligible for Commonwealth funding under the NHRA.

1. Executive Summary

1.1 Background

The National Health Reform Agreement (NHRA) outlines that where the Independent Hospital Pricing Authority (IHPA) makes any significant changes to the activity based funding (ABF) classification systems or costing methodologies, the effect of such changes must be back-cast to the year prior to their implementation for the purpose of the calculation of Commonwealth growth funding, as set out in the NHRA (clause A40, NHRA). As outlined in the NHRA, IHPA is required to consider transitional arrangements when developing new ABF classification systems or costing methodologies (clause A40, NHRA).

As the Commonwealth's funding is based on both the change in volume of weighted services and growth in the National Efficient Price (NEP) and in the National Efficient Cost (NEC), it is imperative that the previous year's pricing model accurately reflects the relevant year's data.

1.2 Purpose

The purpose of the Back-casting Policy (the Policy) is to outline the process IHPA will follow when back-casting the NEP or the NEC for the purpose of the calculation of the Commonwealth's funding, as set out in the NHRA (clause A40).

1.3 Scope

The scope of this Policy includes the back-casting assessment process.

1.4 Timeframes

The *National Health Reform Act 2011* and the NHRA do not prescribe any timeframes in relation to IHPA conducting this assessment, however it is intended that each year IHPA will outline its intention with regards to back-casting in the draft NEP Determination, which will be released by 30 November each year. Jurisdictions will have the opportunity to provide comments to IHPA within the 45-day comment period. The formal back-casting multipliers will be included in the Final NEP and NEC Determinations released in the following February each year.

1.5 Review

The Pricing Authority (IHPA Board) and Chief Executive Officer of IHPA will review this Policy, including associated documentation, annually or as required.

The Policy was reviewed in April 2018.

2. Context

2.1 Calculation of Commonwealth funding

As outlined in clause A34 of the NHRA, the Commonwealth's funding for each ABF service category will be calculated individually for each state and territory by summing:

- a. *previous year amount*: the Commonwealth's percentage funding rate for the relevant state or territory in the previous year multiplied by the volume of weighted services provided in the previous year multiplied by the NEP in the previous year;
- b. *price adjustment*: the volume of weighted services provided in the previous year multiplied by the change in the NEP relative to the previous year multiplied by 45 per cent; and
- c. *volume adjustment*: the net change in volume of weighted services to be provided in the relevant state or territory (relative to the volume of weighted services provided in the previous year) multiplied by the NEP multiplied by 45 per cent.

The National Health Funding Pool Administrator will calculate the Commonwealth's funding contribution for each ABF service category (clause A36, NHRA). IHPA will advise the Administrator of the back-cast effect of any changes that IHPA has determined to be significant to the ABF classification systems or costing methodologies.

Back-casting is important to ensure the calculation of Commonwealth growth funding is not adversely impacted by changes in the National Pricing Model or the calculation of the NEP/NEC over consecutive years.

Detailed below are types of significant changes which may give rise to IHPA back-casting to the year prior for the purpose of the calculation of the Commonwealth's funding, as set out in the NHRA (Clause A40).

2.2 Classification systems

Where there are significant changes made to the ABF classification systems, these changes may have impacts on the National Weighted Activity Unit (NWAU) and price weights and, as such, will be back-cast when changes are made.

Classifications are reviewed regularly and updated periodically to ensure that they remain clinically relevant and resource homogenous within a service category. Such modifications are based on the outcome of robust statistical analysis, including specialist input from clinicians.

For example, AR-DRG V7.0 was implemented as the specified classification system to price inpatient services in 2014-15, and as such, the 2013-14 NEP (NEP13) was required to be recalculated for the purpose of calculating growth.

2.2.1 Costing standards

Where IHPA determines there are significant changes made to the Australian Hospital Patient Costing Standards, to costing methodologies or processes (at the national or jurisdictional level),

these changes may have impacts on the scope of expenditure and, as such, will be back-cast to the year prior to their implementation.

2.2.2 Indexation

IHPA uses the most up-to-date cost data available from the National Hospital Cost Data Collection (NHCDC) for setting the NEP. However there is currently a three year gap between the year of cost data used, and the year for which the price is determined. For example, NEP14 was determined using NHCDC 2011-12 cost data and NEP15 was determined using NHCDC 2012-13 cost data.

To account for this time lag IHPA applies an indexation rate to escalate the historic costs to future prices. IHPA does this by estimating the expected growth rate over the three years based on historical growth in unit costs, as reported in the NHCDC.

As more up-to-date data becomes available there may be large discrepancies between the predicted growth rate and the actual growth rate. This could impact the growth in the NEP upwards or downwards between successive years.

To account for this, IHPA will use the most recently available NHCDC cost data to back-cast the previous year's NEP for the purposes of determining Commonwealth growth funding. See Section 3.1.1 for a practical demonstration of how the Pricing Authority determined a back-cast NEP14 using 2012-13 cost data that was not available at the time the NEP14 was determined.

2.2.3 Other factors

There are several other reasons which may give rise to IHPA considering back-casting to the prior year. These are summarised below.

Adjustments to the NEP

As outlined in the Pricing Framework for Australian Public Hospital Services, IHPA is committed to a program of ongoing work to establish the factors resulting in legitimate and unavoidable variations in the costs of providing public hospital services. This work will be focused on the empirical demonstration of differences in the costs of public hospital services.

The annual review of price adjustments will include both existing adjustments and potential adjustments. That is, the adjustments to the NEP that have been approved in one year are not adjustments that will automatically be included on an ongoing basis at the same quantum. Instead, IHPA will undertake a program of ongoing validation, testing and refinement of any price adjustments that it introduces.

Where IHPA determines there are significant changes to price adjustments which impact the NWAU, IHPA may consider the impact of back-casting these changes to the prior year.

Material changes to pricing methods

Changes to data quality and standards over time may enable improvements to be made to pricing methods. For example, improved identification of funding associated with other Commonwealth programs, such as high cost drugs, has enabled associated adjustments to be made to price weights rather than the NEP.

In situations where IHPA determines these improvements result in significant changes to pricing methodology, IHPA may consider the impact of back-casting these changes to the prior year.

Material changes in counting rules

There may be a number of situations where changes in counting rules lead to a need to restate the previous years' volume for the purpose of calculating Commonwealth growth funding.

Two specific examples of this are:

1. Changes to the scope of public hospital services eligible for Commonwealth funding

In the event that the Pricing Authority decides to make a change to the services that are in scope, IHPA will need to restate the previous years' actual volumes in order to allow Commonwealth growth funding to be determined. IHPA will undertake this process in conjunction with any affected jurisdiction/s.

2. Services move from block funding to ABF

In future years, it is expected that some hospitals and services that are currently block-funded will move to funding on an ABF basis. For example, for the 2015-16 NEP and NEC there was a shift of 22 hospitals from block funding to ABF as a result of the new block-funding criteria. When this occurs, adjustments to previous years' activity counts will be required to ensure that Commonwealth funding is not under or overstated.

Shadow pricing

IHPA will shadow the pricing of new care types, classifications or adjustments when appropriate. This will enable the impact of new prices on the calculation of Commonwealth growth funding to be assessed.

The back-casting of new services and new counting rules, as well as any shadow pricing periods, will be made explicit in each annual Determination as well as how back-casting should be applied in the calculation of Commonwealth growth funding.

3. Back-casting Process

IHPA will back cast the NEP each year and the NEC as required. The back-cast NEP and NEC are to be used only to calculate the Commonwealth growth funding (clause A40 of the NHRA).

3.1. Back-casting the NEP

3.1.1 Back-cast NEP_{n-1}

The back-cast NEP_{n-1} is determined by indexing the average cost (for year n-3) by two years using the latest estimates of annual indexation projections. In effect, this defines the price growth between consecutive NEPs as equal to the price indexation rate applied to calculate the latest NEP.

For example, the back-cast NEP₁₄ was calculated using the 2012-13 average cost indexed by two years using the same price indexation rate applied to determine NEP₁₅.

3.1.2 Back-casting volume

For calculating the actual growth in Commonwealth funding, the Administrator of the National Health Funding Pool should apply the current year price weights to the previous year's activity data, to ensure that methodological changes in the national pricing model are accounted for.

However, to allow the Administrator to estimate Commonwealth growth funding each year, prior to actual data being finalised, IHPA will calculate volume multipliers.

The volume multipliers (VM) are calculated for each jurisdiction for each particular ABF service category stream. The back-cast VM for each jurisdiction (for each ABF product category) are calculated as:

$$VM = \frac{\text{NWAUs delivered by NEP}_n \text{ model (NWAU}[n]) \text{ applied to latest activity data}}{\text{NWAUs delivered by NEP}_{n-1} \text{ model (NWAU}[n - 1]) \text{ applied to latest activity data}}$$

3.1.3 Calculate actual growth funding

For the purposes of calculating actual growth funding the Administrator will apply the back-cast NEP and the current years price weights to the previous years' activity.

3.1.4 Quality assurance of back-casting multipliers

IHPA engages an independent reviewer of the national pricing models on an annual basis to ensure the accuracy of the price weight, NEP and back-casting multipliers.

Furthermore, IHPA provides health ministers the back-casting multipliers as part of the draft NEP Determination each year when it is issued for the 45-day consultation period required under the Act.

3.2. Back-casting the NEC

3.2.1 Back-casting for changes in model methodology

The NEC multipliers are for use by the Administrator to use as the base for calculating the growth in Commonwealth funding under the NHRA.

The NEC back-casting multipliers take account of changes in model methodology and the addition and removal of block services as required by the NHRA.

The NEC back-casting multiplier (BM) for each jurisdiction can be expressed as:

$$BM = \frac{\text{Total modelled expenditure delivered by NEC}_n \text{ model using latest expenditure and activity data}}{\text{Total modelled expenditure delivered by NEC}_{n-1} \text{ model using latest expenditure and activity data}}$$

Further details of the back-casting process specific to each year are provided in the National Pricing Model Technical Specifications.

3.2.2 Back-casting for changes in indexation methodology

In addition to changes in model methodology, any changes to indexation of the NEC must be back-cast.

Changes in indexation methodology are accounted for by calculation of a back-cast NEC_{n-1}. The back-cast NEC_{n-1} is determined by indexing the average cost (for year n-4) forward three years using the new indexation methodology.

For example, for the purposes of calculating growth between NEC15 and NEC16, the back cast NEC15 was calculated by taking the average in-scope cost for NEC15 (2012-13) and indexing it forward three years based on the new indexation methodology.

Appendix A: Extract of the NHRA

- A34. From 2014-15, the Commonwealth's funding for each ABF service category will be calculated individually for each State by summing:
- a. *previous year amount*: the Commonwealth's percentage funding rate for the relevant State in the previous year multiplied by the volume of weighted services provided in the previous year multiplied by the national efficient price in the previous year;
 - b. *price adjustment*: the volume of weighted services provided in the previous year multiplied by the change in the national efficient price relative to the previous year multiplied by 45 per cent; and
 - c. *volume adjustment*: the net change in volume of weighted services to be provided in the relevant State (relative to the volume of weighted services provided in the previous year) multiplied by the national efficient price multiplied by 45 per cent.
- A35. The Commonwealth percentage funding rate for each ABF service category in each State will be calculated by dividing the sum of clause A34 by the relevant year's total volume of weighted services multiplied by the national efficient price.
- A40. If the IHPA makes any significant changes to the ABF classification systems or costing methodologies, the effect of such changes must be back-cast to the year prior to their implementation for the purpose of the calculations set out in clauses A34 and A35. The IHPA will consider transitional arrangements when developing new ABF classification systems or costing methodologies.

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