

Healthcare costing standards for England

Integrated acute, mental health: costing processes

For use by acute (collection year 2020)
and mental health (collection year 2020)

Final

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We support providers to give patients safe, high quality, compassionate care within local health systems that are financially sustainable.

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CP1: Role of the general ledger in costing

Purpose: To set out how the general ledger is used for costing, and to highlight the areas which require review to support accurate costing.

Objective

1. To ensure the correct quantum of cost is made available for costing.

Scope

2. This standard should be applied to all lines of the general ledger.

Overview

3. You need the income and expenditure for costing. We refer to this as the general ledger output. This output needs to be at cost centre and expense code¹ level and is a snapshot of the general ledger. You do not require balance sheet items for costing. However, a recommended approach would be to view the 'whole' ledger to demonstrate that all account codes are in balance and come to 0.00 (zero). That way you have assurance that you have collected all codes and can then work with the expenses/income values and reconcile with the reported position audited accounts. Any codes that are not in the costing process could then be labelled as not required and the costing system should be able to exclude them from its processes.

¹ Expense codes may also be called 'account codes' or 'subjective codes'.

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4. You must include all expenditure and income in the general ledger output, and this must reconcile with the financial position reported by your board and in the final audited accounts.
5. The general ledger is closed at the end of the period, after which it cannot be revised.² For example, if in March you discover an error in the previous January's ledger that needs to be corrected, you can only make the correction in March's ledger. Doing so will correct the year-to-date position, even though the January and March figures do not represent the true cost at those times, as one will be overstated and the other understated. Check with the finance team to ensure that only finally closed periods that contain any such changes are brought into the costing system as a matter of routine.
6. The timing of when some costs are reported in the general ledger may pose a challenge for costing. For example, overtime pay for a particular month may be posted in the general ledger in the month it was paid, not the month the overtime was worked. This highlights a limitation in the time-reporting and expense payment system. We recognise this limitation but are not currently proposing a work-around for it.
7. Discuss the general ledger's layout and structure with the finance team so that you understand it. This will help you understand the composition of the costing output.
8. Keep a record of the input of cost into your costing system for each costing period. There may be multiple loads and we recommended that each load is noted. You should record each load in your integrated costing assurance log (ICAL) worksheet 12: GL load record.

What you need to implement this standard

- Costing principle 2: Good costing should include all costs for an organisation and produce reliable and comparable results³
- Spreadsheet CP1.1: General ledger output required fields

² Some systems may allow you to back post payroll journals and to make other changes during the external audit process.

³ See *The costing principles*: <https://improvement.nhs.uk/resources/approved-costing-guidance/>

Approach

Obtaining the general ledger output

9. The finance team should tell you when the general ledger has been closed for the period and give you details of any off-ledger adjustments for the period. You need to put these adjustments into your cost ledger, especially if they are included in your organisation's report of its financial position as you will need to reconcile to this.
10. Keep a record of all these adjustments in your ICAL worksheet 11: GL adjustments log, to reconcile back to the general ledger output. Take care to ensure that any manual adjustments are mapped to the correct line of the cost ledger.
11. See Spreadsheet CP1.1 for what the extract of the general ledger output must include.
12. Ensure the process for extracting the general ledger output is documented in your ICAL worksheet 8: Extracting GL output. You should extract this only after the finance team tells you it has closed the general ledger for the period.
13. The finance team should tell you when it has set up new cost centres and expense codes in the general ledger, and when there are material movements in costs or income between expense codes or cost centres. One way to get this information is to circulate a general ledger changes form to all the appropriate teams including costing. Cross-team approval increases the different teams' understanding of how any changes affect them.
14. **Finance teams should not rename, merge or use existing cost centres for something else** without informing you as not knowing when this has been done will cause problems for costing. Finance teams should close a cost centre and set up a new one rather than renaming it. If this is not possible, they should tell you about any changes.
15. The new general ledger cost centres and expense codes need to be mapped to the cost ledger. You then need to reflect these changes in the costing system.

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16. 'Dump'⁴ ledger codes need to be addressed so that all costs can be assigned to patients accurately. Work with your finance colleagues to determine what these 'dump' codes contain so they are mapped to the correct lines in the cost ledger.
17. You should have a rolling programme in place to regularly meet your finance colleagues to review the general ledger and its role in costing. This can identify problems and enhances their engagement with the use of the data.

⁴ Organisations may use a different name for dump ledger codes, eg error suspense codes and holding ledger codes.

CP2: Clearly identifiable costs

Purpose: To ensure costs are in the correct starting position for costing.

Objectives

1. To ensure all costs are in the correct starting position and correctly labelled for the costing process.
2. To ensure the same costs are mapped to the same resources.
3. To ensure all costs are categorised in a consistent way.
4. To ensure income is not netted off against costs.

Scope

5. This standard should be applied to all lines of the general ledger.

Overview

6. The general ledger is often set up to meet the provider's financial management needs rather than those of costing. Therefore, some costs included in it will have to be transferred to other ledger codes, or aggregated or disaggregated in the cost ledger to ensure the costs are in the right starting position for costing.
7. Feedback from those who use the national cost datasets is that the inconsistency in how costs are labelled limits meaningful analysis. For

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example, one analysis of orthopaedic cost data⁵ found issues with inconsistent labelling of theatre consumables.

8. To ensure the accuracy of cost data, the costs at the beginning of the process need to be in the right place with the right label.
9. This is one of the reasons we have introduced the standardised cost ledger shown in Spreadsheet CP2.1. This facilitates an in-depth investigation of the general ledger to understand the costs it contains; and provides a way to get the costs into the right starting position with the right label. This is important for allocation of the correct cost allocation method to the cost and effective auditing of the process.
10. The standardised cost ledger covers all sectors (except ambulance), to enable integrated providers to work from one document. You can use column O – ‘Likely sector’ – in Spreadsheet CP2.1 to suggest rows that are relevant and set up your own customised list in column P – ‘My organisation’.
11. You should keep a record of your general ledger to cost ledger mapping. An example of the type of structure to use is given in your integrated costing assurance log (ICAL) worksheet 9: GL to CL mapping.

Categorisation of costs

12. The standardised cost ledger also combines the cost centre and expense code into the costing account code. The standardised cost ledger categorises costs at both the cost centre and expense code level, according to whether they are patient facing or support.⁶ **Patient-facing costs** are those that relate directly to delivering patient care and are driven by patient activity. They should have a clear activity-based allocation method and will be both pay and non-pay. These costs use resources and activities in the costing process.
13. **Support costs** do not directly relate to delivering patient care. Many relate to running the organisation (eg board costs, HR, finance, estates). Other support

⁵ This analysis was undertaken by NHS Improvement’s Group Advising on Pricing Improvement (GAPI) during 2017.

⁶ See columns C and F in Spreadsheet CP2.1 for how cost centres and expense codes are categorised, and Spreadsheets CP3.1 and CP3.2 for how resources and activities are categorised.

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costs may be at service level, such as ward clerks and service management costs.

14. To help the costing process, support costs have been categorised as type 1 and type 2.
15. Type 1 support costs such as finance and HR are allocated to all services that used them, using a prescribed allocation method such as actual usage or headcount. These costs do not use resources and activities in the costing process.
16. Type 2 support costs have some relationship to patient care activity volumes. For example, how these costs are interpreted varies depending on the volume of this activity. Type 2 support costs are allocated to the patient using an activity-based method. These costs use resources and activities in the costing process: for example, clinical coding and interpreting.
17. The nature of the cost determines the categorisation, not the allocation method. The standards apply an activity-based allocation method to type 2 support costs as this is believed to be a more accurate way to allocate the costs. However, the categorisation of the cost is still a support cost. It does not change to a patient-facing categorisation.
18. Some providers may have sophisticated data systems that allow you to allocate a type 1 support cost using an activity-based method. You should continue to do this: it does not change the categorisation.
19. There are also cost centre and expense code categorisations for education and training (E&T), research and development (R&D), income (INC) and balance sheet items (BS). These are included so the mapping of the standardised cost ledger (Spreadsheet CP2.1) can fully reflect the general ledger trial balance at the close of the costing period; and reflect the different nature of these elements when allocating cost and income.
20. For national reporting, all providers are expected to use the national PLICS terminology given in the costing glossary.⁷ This includes the terminology used in Integrated standard CM15: Cost classification. We understand providers

⁷ <https://improvement.nhs.uk/resources/approved-costing-guidance>

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also use other cost categorisations for local reporting. The standards do not provide guidance on the categorisations not given in the costing glossary.

Income

21. To maintain transparency in the costing process, income should not be netted off from the costs. The only exceptions to this rule are:
 - a. Income received for clinical excellence awards can be netted off the consultant's salary cost.
 - b. Where 100% of an individual healthcare professional's costs are reported in your general ledger but they spend part (or all) of their time with patients at another provider.⁸ For example, a clinician provides a service in a different setting and this activity is part of that performed by the different setting. Your clinician's organisation will normally invoice the other organisation for this activity and the income received can be netted off the clinician's pay costs to avoid inflating the cost per minute of the former organisation's own-patient activity. It is important to determine whether the recharged value includes type 1 support costs recovery, as netting this additional support type 1 income off staff costs would understate the remaining resource cost.
 - c. Where the materiality principle⁹ applies – for small value contracts or service-level agreements, there is no need to determine the associated costs.

Salary recharges

22. These are described as 'pay recharge to' and 'pay recharge from' in the standardised cost ledger. Pay recharges are also identified as clinical and non-clinical in the cost ledger.
23. In line with paragraph 21b above, a 'pay recharge to' is where you invoice another organisation for an element of someone's salary without including any service element for support costs or surplus (this may be included in the gross recharge). The income received needs to be netted off against their actual

⁸ Some NHS organisations call these arrangements 'operating partnership agreements'.

⁹ Costing principle 5: Good costing should focus on materiality:

https://improvement.nhs.uk/documents/2358/The_costing_principles.pdf

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salary so that 100% cost is not attributed to, for example, 50% activity. The 'pay recharge to' needs to be moved to the cost ledger line for the individual and netted off, both for non-clinical and clinical activity.

24. The 'pay charge from' needs to be moved to the cost centre that is paying for the activity, so the pay costs can be allocated to the activity.

Commercial activities

25. Activities for which there are costs and income should be costed in line with Table 5.1 in Integrated standard CP5: Reconciliation and Integrated standard CM8: Other activities; and reported under the cost group 'other activities'. This is so that a provider's contracted-in and commercial activities do not inflate or deflate the cost of its own-patient care.
26. Where income is generated but costs are difficult to identify, such as car parking, you must make a sensible assumption on the costs after discussion with the appropriate teams. Report the costs and income under the cost group 'other activities'. If you cannot identify the costs, report the income under the cost group 'reconciliation items income' as described in Integrated standard CM12: The income ledger.

Expenditure and activity recorded in different organisations

27. Where your organisation holds the budget and therefore the costs for a service, but you do not record the activity, report these costs under the cost group 'costs and activity reconciliation items'. This includes both your organisation's own costs where there is no activity and costs incurred on another organisation's behalf – for example, an employee working for the council.
28. If your organisation is taking part in a national pilot or other such scheme – for example, Scan4Safety – and all expenditure is funded by the project, you should treat it as 'other activities' and report it under the cost group 'other activities' until it becomes business as usual.

Income in the standardised cost ledger

29. To ensure your cost ledger is correct, you must also understand the income in your general ledger. In the technical document, we have included rows for

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income types as a guide to where in the reconciliation these elements should be shown. This is also important to ensure that income is shown separately in PLICS for reporting purposes, to allow cost to be shown without being net of income, as described in Standard CM12: The income ledger.

30. In the technical document we define the income categories as follows:
- Category A income – patient contract income. This is the core patient income from commissioners. Category A also includes other income considered ‘not allowable non-contractual income’ for collection.
 - Category B income – private patient and overseas visitor income. These patients are also patients of the NHS, but the funding for them will come from sources other than NHS commissioners. This category also includes patients from the devolved administration and those funded by the Ministry of Defence.
 - Category C income – other income. This is the remainder of the income and is also known as ‘allowable income for the cost collections’. It can be netted off from the service area costs.
31. This categorisation is used to assist the transition from reference costs to PLICS annual submissions by ensuring that the impact of income on the former is transparent for decision-making.

What you need to implement this standard

- Costing principle 2: Good costing should include all costs for an organisation and produce reliable and comparable results
- Costing principle 3: Good costing should show the relationship between activities and resources consumed
- Costing principle 4: Good costing should involve transparent processes that allow detailed analysis
- Costing principle 5: Good costing should focus on materiality¹⁰
- Spreadsheet CP2.1: Standardised cost ledger (with mapping to resources)
- Spreadsheet CP2.2: Type 1 support costs allocation methods

¹⁰ See *The costing principles*: <https://improvement.nhs.uk/resources/approved-costing-guidance/>

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Approach

32. Before proceeding, review the costing diagram spreadsheet in the technical document. This is a high-level visual aid to the costing process described in the standards.
33. We describe the costing process in steps to help you understand it. These steps may happen simultaneously in the costing system.
34. The initial setting up of your PLICS is a one-off exercise, but the interface between your general ledger set up and the standardised cost ledger should be understood and reviewed regularly to keep it up to date. This regular process will also allow you to refine and improve the PLICS over time.
35. Providers will have various software solutions available to them to deliver CTP compliant processes. We do not mandate the minimum software requirements. However, to produce a compliant CTP collection as mandated, we advise you to refer to both the minimum software requirements and the relevant standards/guidance to deliver this.

Setting up the costing process in your costing system

36. The costing process described here is linear in approach, with each element mapping to the next in a standardised and consistent way as shown in Figure CP2.1.
37. There are three elements:¹¹
 - analysing your general ledger and understanding how costs need to be disaggregated to ensure they are allocated properly, or where they need to be moved to ensure they have the right label and are in the right starting position
 - using the information from this analysis to inform the processing rules in your costing system

¹¹ The timetable for implementing these three elements is given in Spreadsheet: Transition path, in the technical document.

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- having the prepopulated cost ledger in your costing system, so when you load your general ledger output it uses these processing rules to move costs to the right line in the cost ledger.

Figure CP2.1: Mapping the costing process components



38. The mapping of each costing account code from the cost ledger to the resources is provided for you in columns G to H in Spreadsheet CP2.1; and the mapping from each of these resources to the collections resources¹² is provided for you in columns H and K in Spreadsheet CP2.1.¹³
39. The cost ledger, resources and collection resources – with their coding structure and the mapping between these elements – should be prepopulated in your costing system. If these mappings change, we will provide the information to update your costing system.
40. Depending on your costing system, costing may take place at a more granular level than the resources (see column B in Spreadsheet CP3.1). Your system may use cost items, local resources or another categorisation or grouping of costs. You can continue using this method in your costing system but be aware that it adds an additional mapping exercise to your set-up.
41. The cost allocation methods prescribed in Spreadsheets CP3.3 and CP3.4 take into account that costing may happen at a lower level than the resource description.
42. In Figure CP2.1 the only mapping exercise you will need to do is mapping your general ledger to the cost ledger.
43. If you use a local resource in your costing process, you must map your cost ledger to your local resource, then your local resource to the prescribed

¹² Collection resources' is the group of resources used for the national submission. These resources are not the same as the resources used in the costing process.

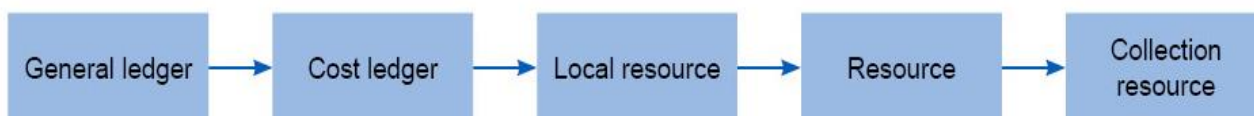
¹³ We appreciate that in this version of the standards additional cost centre mappings may need to be added to Spreadsheet CP2.1. We will review and update the technical document during the implementation process where appropriate. Please send suggestions for additional cost centres to costing@improvement.nhs.net

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resource. Figure CP2.2 describes the mapping costing process with the additional component of a local resource.

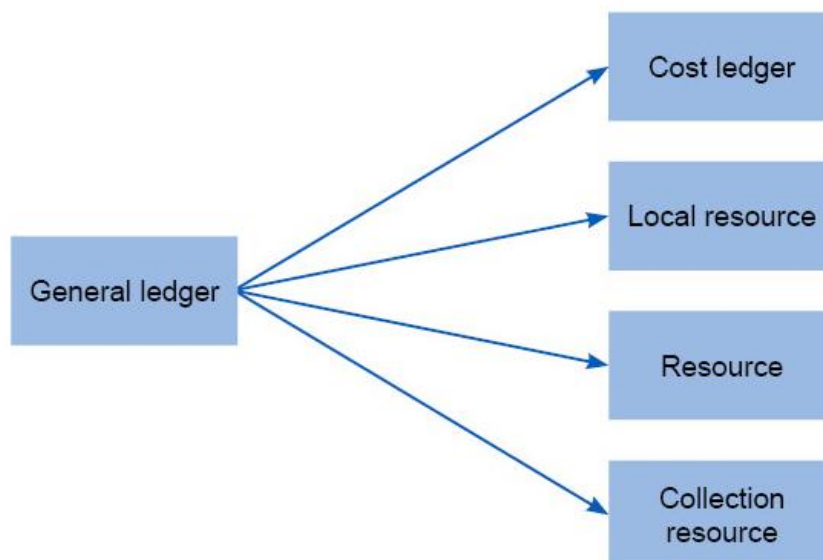
44. The mapping process will still need to be linear to maintain standardisation and consistency. You must document your mapping assumptions in your ICAL worksheet 15: Superior costing methods.

Figure CP2.2: Mapping the costing process components with the inclusion of a local resource



45. Do not treat these mapping exercises as separate entities. It is important to ensure everyone puts the same costs in the same place, to maintain the linear mapping.
46. Figure CP2.3 is an example of how **not** to approach the mapping exercises.

Figure CP2.3: How not to map to the costing process elements



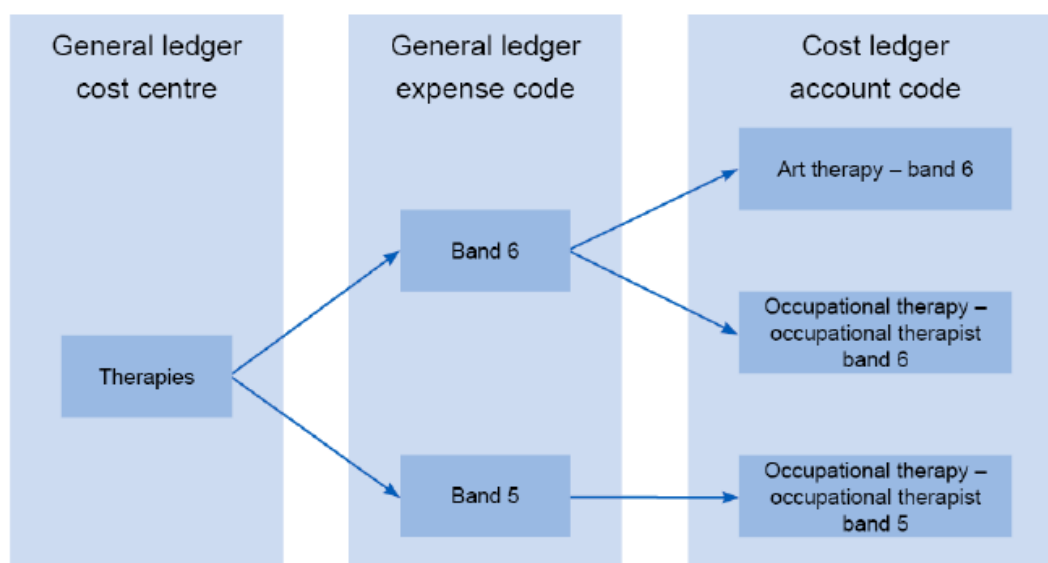
Analyse your general ledger to get your costs in the right starting position with the right label

47. For the cost data to be credible, we need to ensure that everyone puts the same costs in the same place before the costing process begins.
48. To achieve this, before the costing process starts you need to ensure all the costs recorded in the general ledger are in the right starting position and have the right label.
49. Use the standardised cost ledger template (columns A to G in Spreadsheet CP2.1) to ensure all your costs are in the right starting position and have the right label for the costing process.
50. Analyse your general ledger to understand how costs are recorded in it and what steps you need to take to get the costs in the right starting position with the right label.
51. These steps will include disaggregating costs that need to be mapped to different resources, or where the labels on the general ledger do not correspond to the costs recorded on that line in the general ledger.
52. Figure CP2.4 shows an example of disaggregation. You may have a therapies cost centre in your general ledger, and on an expense line called 'Band 6' you may have occupational therapists and art therapists. The costs for the occupational therapists and the physiotherapists need to go to different resources, so must be disaggregated. You can use relative weight values¹⁴ or other information sources to determine the apportionment of costs between the two lines in the standardised cost ledger.

¹⁴ See Integrated standard CP3: Appropriate cost allocation methods, for more detail on relative weight values.

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Figure CP2.4: Example of disaggregation between the general ledger and the cost ledger



53. Use the information from your in-depth investigation of your general ledger to inform the processing rules in your costing system. Your organisation may use sub-analysis codes that give a finer separation of costs. Understand these codes and use them if available to ensure your general ledger to cost ledger mapping is informed by them. If your general ledger uses sub-analysis codes, you will need to map these codes to the correct line on the cost ledger.
54. You will not be able to analyse each line of the general ledger in depth the first time you do this exercise, but over time – with good communication between you and your finance colleagues – you can refine your analysis, starting where the largest values are involved.
55. Columns G and I in Spreadsheet CP2.1 contain the mapping from the costing account code to the resources that, with the prescribed activity, identifies the prescribed cost allocation method to use. This ensures that everyone categorises and allocates the same costs in the same way: variations in activity costs will not be caused by variations in the costing process.
56. To help prioritise your analysis, use our cost ledger auto-mapper application.¹⁵ This will analyse your general ledger's naming conventions for expense codes

¹⁵ The general ledger to cost ledger auto-mapper application is available on request as part of the implementation support package. Please contact costing@improvement.nhs.uk

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and identify an appropriate line in the standardised cost ledger in Spreadsheet CP2.1 to map them to.

57. You should record the output for the auto-mapper application in your ICAL worksheet 10: GL to CL auto-mapper output.
58. Where the cost ledger auto-mapper application (or the standardised cost ledger in Spreadsheet CP2.1) cannot identify an appropriate line in the cost ledger, you will need to analyse the general ledger line, identify what cost sits there and map it to the appropriate line in the cost ledger.
59. You will need a rolling programme for analysing your general ledger over time to ensure that costs in the cost ledger continue to be in the right starting position with the right label. Review all mapping regularly – at least annually – to ensure all changes or additions to the general ledger are understood and included in the cost ledger. If you are unable to map a particular code or cost, you should consult your implementation partner at NHS Improvement for guidance.¹⁶

Load your general ledger output into your costing system

60. The general ledger output must be transformed into the cost ledger **within the costing system** to ensure that any changes can be traced and reconciled to the provider's general ledger.¹⁷
61. As the cost ledger template should be prepopulated in your costing system, when you load your general ledger input into your costing system, it will use the information you have gathered through your analysis of the general ledger to move those costs against the appropriate line in the cost ledger.
62. This means you will have the right costs in the right starting position with the right label and the costing process can begin.

¹⁶ You can contact your implementation partner by emailing costing@improvement.nhs.uk, or phoning during implementation surgery times. Telephone numbers will be given to new implementers.

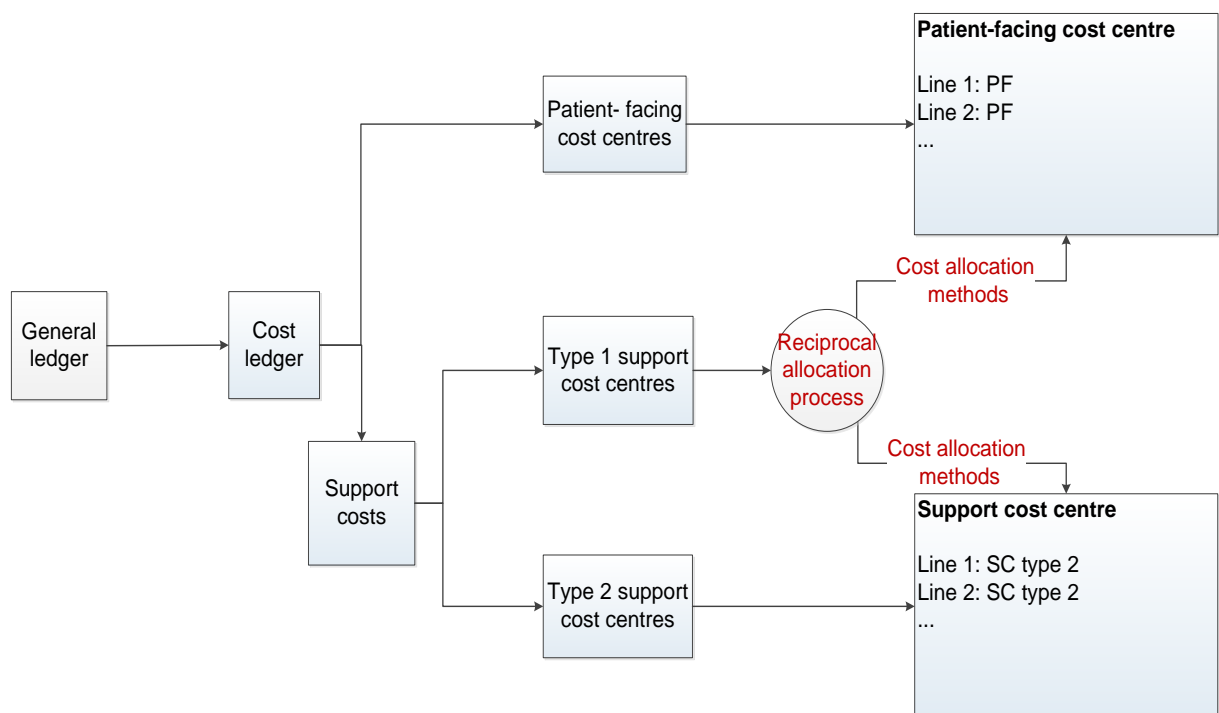
¹⁷ If you are attempting to adopt the standards before purchasing a compliant software product, please ensure that your process for mapping is robust, transparent and documented. All PLICS costing software used in NHS organisations should comply with the [minimum software requirements](#).

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Allocating type 1 support costs to services that have used them

63. Once the PLICS receives your general ledger output, it can process the data to allocate costs in type 1 support cost centres to the patient-facing costs and type 2 support costs, as well as to any other type 1 support costs that have used them (eg finance using HR and vice versa). The methods used are illustrated in Figure CP2.5.
64. In Figure CP2.5 all type 1 support costs have been mapped to type 1 support cost titles (columns H and I in Spreadsheet CP2.1). Spreadsheet CP2.2 identifies the cost allocation method to use for each type 1 support cost title.

Figure CP2.5: Extract from the costing diagram spreadsheet



Centrally held and devolved type 1 support costs

65. It is important to identify whether a type 1 support cost is centrally held or has already been devolved to the relevant cost centres in the standardised cost ledger. For example, are the computer hardware costs for clinical areas:
- held in a 'central' place in your cost ledger or
 - purchased using a central code, but then recharged monthly to the service that used them (devolved) or

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- already devolved in the cost centre for the clinical area?
66. This is because the standards describe a two-step process for allocating type 1 support costs:
1. apportioning type 1 support costs to other cost centres that use them
 2. getting those type 1 support costs in the correct place in the cost centre that uses them, then to be mapped to patient-facing or support resources to allow the costing process to start.

Examples of support costs devolved to the cost centres that use them

67. Some type 1 support costs will already be reported in patient-facing cost centres and type 2 support cost centres such as ward clerks on a ward. Therefore, these costs do not need to be moved.
68. Other type 1 support costs such as ward security or professional subscription costs may have already been devolved in the general ledger, based on an internal recharge. There is no need to repeat this step, providing the prescribed or a superior cost allocation method has been used.
69. Type 1 support costs which have already been devolved in the general ledger, but not using the prescribed cost allocation method, should be reagggregated back centrally and then reallocated to cost centres using the prescribed allocation method.
70. This may be done in your costing system using journals to move costs from the cost centre the type 1 support cost was devolved to, back to a central cost centre, either in the general ledger or as part of the preparation work within the PLICS.
71. Spreadsheet CP2.2 prescribes the allocation methods to be used for each type 1 support cost based on whether the type 1 support cost:
- is held centrally
 - has already been devolved to the cost centre that used it, using the prescribed method or a superior method
 - has already been devolved to the cost centre that used, but **not** using the prescribed method or a superior method.

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72. As an example, the prescribed allocation method to treat devolved medical equipment depreciation costs (support cost ID: T1S023) is 'value of equipment in the area as reported in fixed asset register' (see Spreadsheet CP2.2).
73. If the depreciation has already been devolved to the cost centres that use the equipment using the prescribed allocation method, it will be in the correct position to allocate the costs to the patient-facing or type 2 expense lines within the cost centre. It does not need to be reaggregated to a central depreciation cost centre.
74. If the depreciation has been allocated using any other method, the cost should be reaggregated to the central depreciation cost centre, so that the correct allocation method can be used as part of the costing process.
75. Type 2 support costs, such as interpreting, should sit in their own cost centres in the standardised cost ledger, as these have specific activity-driven allocation methods, specified in columns D and E in Spreadsheet CP3.4.

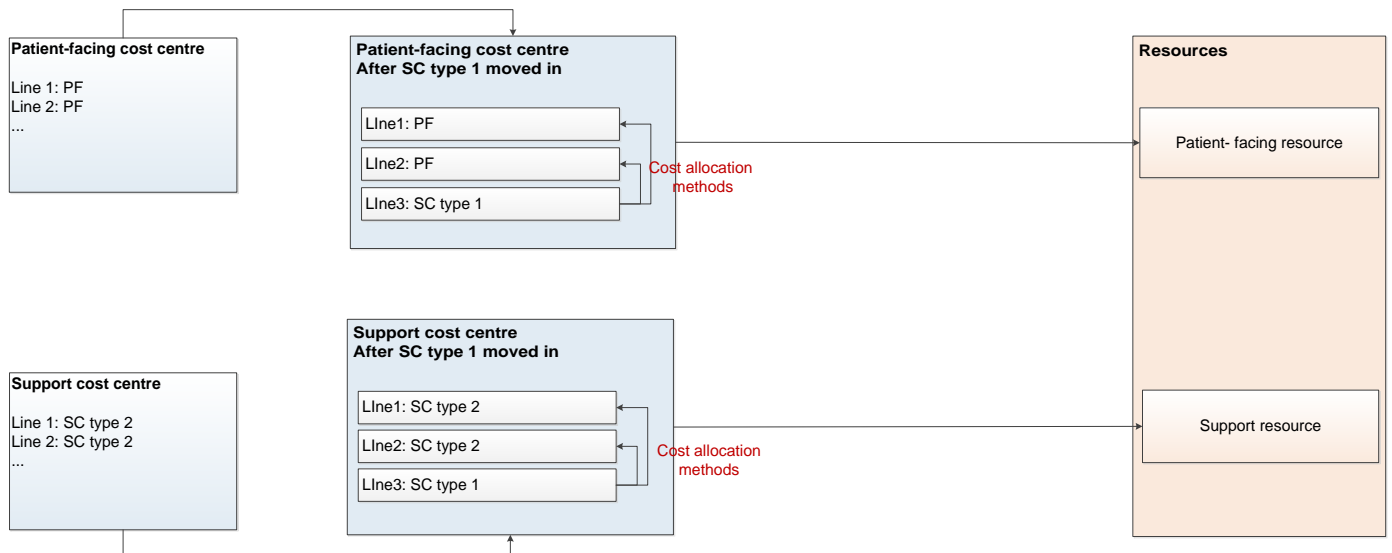
Reciprocal costing

76. This step includes reallocating type 1 support costs between these costs – that is, between the type 1 support cost centres. You should do this using a **reciprocal** allocation method, which allows all corporate support service costs to be allocated to, and received from, other corporate support services.
77. Reciprocal costing must take place within the costing system.
78. Type 1 support costs should **not** be allocated using a hierarchical method as this will only allow cost to be allocated in one direction between corporate support services.¹⁸
79. A reciprocal allocation method accurately reflects the interactions between supporting departments, and therefore provides more accurate results than a hierarchical approach.

¹⁸ Providers using a hierarchical method of allocation should adopt a reciprocal method as soon as possible. This can be done in conjunction with purchase of costing software or review of current costing software.

Apportioning type 1 support costs in patient-facing and type 2 support cost centres

Figure CP2.6: Extract from the costing diagram spreadsheet



- 80. Within the costing system, type 1 support costs should be apportioned over the patient-facing and support cost type 2 expense lines within the cost centre based on the allocation methods in columns F to I in Spreadsheet CP2.2.
- 81. Patient-facing costs and type 2 supports costs, with their allocated portion of type 1 support costs, are then mapped to resources. Table CP2.1 gives an example of this.

Table CP2.1: Example of costs within a patient-facing resource

Resource name	Patient-facing cost	Type 1 support cost	Total resource cost for the costing process
Nurse	XX	XX	XX
Consultant	XX	XX	XX

How to treat type 1 support costs in type 2 cost centres

- 82. All type 1 support costs in type 2 support cost centres will have been mapped directly to the type 2 support resources.

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83. This is because each type 2 support cost centre maps to a single type 2 support resource and therefore all cost lines within the cost centre are allocated to activities using the same allocation method.
84. It is not necessary, within a type 2 support cost centre, to allocate type 1 costs over the type 2 expense lines before mapping all the expense lines of the cost centre to a type 2 support resource.
85. However, we stress that the information in Table CP2.1 will still need to be available if you allocate type 1 support costs in type 2 support cost centres straight to the support cost resource.

How to treat type 1 support costs in patient-facing cost centres

86. You do not need to allocate type 1 support costs over the patient-facing expense lines if:
 - all the lines in the patient-facing cost centre map to the same resource and
 - you are using an average cost per minute to allocate that resource.
87. Taking the extra step of allocating type 1 costs over the patient-facing expense lines will not produce a different result, so is unnecessary.
88. The prescribed allocation methods to allocate type 1 support costs to patient-facing cost centres and straight to the patient-facing resource are given in column H in Spreadsheet 2.2.
89. However, we stress that the information in Table CP2.1 will still need to be available if you allocate type 1 support costs in patient-facing cost centres directly to the patient-facing resource.
90. Where the standards state you should allocate the actual staffing costs to their named activity – for example, consultant medical staffing – you will still need to allocate the type 1 support costs over the patient-facing expense lines even if all the costs in the cost centre are mapped to a single resource; if you do not, individual staff members will not be allocated the correct amount of type 1 support costs.
91. If the lines in the patient-facing cost centre are mapped to different resources, you will need to allocate the type 1 support costs over the individual expense

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lines. Otherwise the different resources will not get the correct amount of type 1 support costs.

92. To do this, use the prescribed allocation methods in column I in Spreadsheet CP2.2.

Things to consider when following this method

93. Using an expenditure-based allocation method, some areas of the ledger may get a larger proportion of the allocated type 1 support costs because of specific high cost items, such as drugs or prostheses. If so, investigate the type 1 support cost allocation and use a more appropriate one.

Negative costs in the cost ledger

94. Negative costs arise for various reasons, such as a journal moving more cost than is actually in the expense code. Include all costs, both negative and positive, in the costing process to enable a full reconciliation to your organisation's accounts.
95. With the wider finance team, you must consider the materiality of each cost centre's negative costs and expense code combination. If the negative value is sufficiently material, you may want to treat it as a reconciling item, depending on the materiality and timing of the negative costs. The main questions to ask before deciding are:
 - What negative costs are there?
 - Are they distorting the real costs of providing a service?
 - Are they material?
 - Do they relate to commercial activities?¹⁹
96. You need to investigate with the wider finance team why negative cost balances have arisen. Several issues can cause negative values in the general ledger to be carried into the cost ledger. We describe these below, with suggested solutions.

¹⁹ If the answer to this question is yes, then the negative value may be a 'profit' element to the service provided. This profit should be treated as a reconciliation item.

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97. **Miscoding:** Actual expenditure and accruals costs are not matched to the same cost centre and expense code combination. Ideally, the responsible finance team rectifies such anomalies to give the costing team a clean general ledger output; if not, you should make these adjustments in the cost ledger.
98. **Value of journal exceeds value in the cost centre:** If the value transferred from the cost centre exceeds the value in the cost centre, this will create a negative cost. Again ideally, the responsible finance team rectifies such anomalies but if not, you should make these adjustments in the cost ledger.
99. **Timing of accrual release:** A prior accrual release can result in a negative cost value. When this happens, you must consider whether the negative cost is material and whether its timing creates an issue. You may need to report some negative costs caused by timing issues as a reconciliation item. For example, where the accrual is posted in the last month of the financial year and released in the first month of the current year, this can result in an overstatement in the previous year and understatement in the current year. To resolve this, you may need to report the net over-accrual as a reconciliation item to avoid understating the current-year costs. The same is true with an equivalent misstatement for income.
100. Negative costs can be an issue because of **traceable costs**.²⁰ If a particular cost per patient or unit is known and allocated to an activity rather than used as a relative weight value, and the total of the actual cost multiplied by the number of activities is greater than the cost sitting in the costing accounting code, it will create a negative cost.
101. Traceable costs should be used as a relative weight value. The only exception is where the traceable cost is of a material value and using the actual cost as a relative weight value will distort the final patient unit cost. If you do use the actual cost, you must ensure that this does not create a negative value in the cost ledger.
102. Negative costs may also be found in the cost ledger if, during the required ledger movements, more cost is moved than is actually in the expense code. To avoid this, you should use relative weight values or percentages to move

²⁰ For more information on traceable costs, see Integrated standard CP3: Appropriate cost allocation methods.

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costs rather than actual values. For example, 50% of the pay costs rather than a fixed amount.

103. Your local reporting dashboard should show costs in a way that allows departments providing clinical support services such as pathology or therapies to see their own costs, as well as specialties such as cardiology to see their costs. Specialties need to see all costs incurred in treating their patients, while clinical support services need to see all costs incurred in delivering their service at a specialty level. This specialty-level information is crucial as it allows clinical support services to identify which specialties are their biggest consumers. Changes to demand within specialties will affect the activity of clinical support services and costs.

Superior allocation methods for type 1 costs

104. If you are using a type 2 support cost allocation method – that is, an activity-based method – to allocate a cost we have categorised as a type 1 support cost, continue to do this and document it in your ICAL worksheet 15: Superior costing methods. We have adopted this as a superior method in Spreadsheet CP3.5.

Identifying expected costs for prostheses, devices and implants

105. Expected costs for many procedures include the cost of prostheses, devices and implants. Use columns A and B in Spreadsheet CP2.3 to identify missing costs in your costing outputs. Then review these with clinicians and service managers to ensure you are identifying and correctly allocating the appropriate costs to procedures for any prostheses, implants or devices used.

106. Spreadsheet CP2.3 does **not** make any clinical statement about whether these items should have been used in this procedure. The list of prostheses, devices and implants in spreadsheet CP2.3 is only to help identify missing costs in the costing outputs.

107. As prostheses, implants and devices are often expensive, investing time to ensure your costing system can identify where they are likely to have been used and assign a cost to them will improve the accuracy of the final patient costs for such procedures.

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108. The prostheses and high cost devices patient-level feed (feed 15) will also help in this regard. But for prostheses, implants and devices that may not be included in this feed, you must use the relative weight values to assign costs to the procedures that use them.

Identifying expected costs for high cost drugs or outsourced activity

109. Some drug costs, particularly those of newly released drugs or drugs in clinical trials, may be significant but not yet identified at patient level in the medicines dispensed feed (feed 10). Costs for such drugs may skew the cost of some patient groups or be included within support costs.

110. Work with the pharmacy or other relevant service team to understand where such drug costs sit in the general ledger and if necessary, move material values to an appropriate place to ensure the cost sits in the correct resource.

111. Outsourced activity can sit in the ledger where it appears to be a support cost. Ensure such expected costs are understood and allocated to the correct patient resource.

Other considerations

112. Reconciliation: it is essential to ensure the costing system reconciles after mapping from the general ledger to the cost ledger; otherwise further steps will not reconcile and may prove more complex to unravel. Refer to Integrated standard CP5: Reconciliation and Integrated standard CP6: Assurance of cost data.

113. Note on currency codes: the costing process is unaffected by how patients are classified into currencies such as healthcare resource groups (acute and community), clusters (mental health) or the new community currencies. The costing standards do not include guidance on how to do this or relate it to costing, but support will be provided for costing practitioners to include this information in the relevant areas of costing for local use and the PLICS collection. See Standards IR1: Collecting information for costing and IR2: Managing information for costing, the relevant costing method standard and the *National cost collection guidance 2019* (all sectors).

PLICS collection requirements

Netting off other operating income

114. For the national cost collection, other operating income must be netted off from the patient care costs. This includes E&T and R&D income. Non-patient care costs must be allocated to patient care activity using the standardised allocation methods or appropriate local allocation rules. See the *National cost collection guidance 2019* for more information.²¹

²¹ <https://improvement.nhs.uk/resources/approved-costing-guidance-2019>

CP3: Appropriate cost allocation methods

Purpose: To ensure that the correct quantum of costs is allocated to the correct activity using the most appropriate costing allocation method.

Objectives

1. To ensure resources are allocated to activities using a single appropriate method, ensuring consistency and comparability in collecting and reporting cost information, and minimising subjectivity.
2. To ensure costs are allocated to activities using an appropriate information source.
3. To ensure resources are allocated to activities in a way that reflects how care is delivered to the patient.
4. To ensure relative weight values reflect how costs are incurred.

Scope

5. This standard should be applied to all costs reported in the cost ledger and all activities undertaken by the organisation.
6. This standard covers relative weight values and how to identify and use traceable costs in the organisation.

Overview

7. The standardised costing process using resources and activities aims to capture cost information by reflecting how those costs are incurred.

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8. The costing process allocates resources to patients in two steps:
 1. allocate resources to activities (as explained in this standard)
 2. match costed activities to the correct patient episode, attendance and contact (as explained in Integrated standard CP4: Matching costed activities to patients).

9. In most cases the allocation methods prescribed in the standards do not include a relative weight value for acuity or intensity. If you are using a relative weight value for acuity or intensity with the prescribed allocation method, continue to do this and record it in your integrated costing assurance log (ICAL) worksheet 15: Superior costing methods.

What you need to implement this standard

- Costing principle 2: Good costing should include all costs for an organisation and produce reliable and comparable results
- Costing principle 5: Good costing should focus on materiality
- Costing principle 6: Good costing should be consistent across services, enabling cost comparison within and across organisations²²
- Spreadsheet CP3.1: Resources for patient-facing and type 2 support costs
- Spreadsheet CP3.2: Activities for patient-facing and type 2 support costs
- Spreadsheet CP3.3: Methods to allocate patient-facing resources, first to activities and then to patients
- Spreadsheet CP3.4: Allocation methods to allocate type 2 support resources, first to activities and then to patients
- Spreadsheet CP3.5: Superior costing methods
- Spreadsheet CP3.6: Relative weight values specification – pathology (acute and community only)
- Spreadsheet CP3.7: Relative weight value specification – diagnostic imaging (acute and community only)
- Spreadsheet CP3.8: Ward round data specification

²² See *The costing principles*: <https://improvement.nhs.uk/resources/approved-costing-guidance/>

Approach

Resources

10. Resources are what the provider purchases to help deliver the service. A resource may be a healthcare professional, equipment or a consumable.
11. In the standardised cost ledger (see Spreadsheet CP2.1) all patient-facing and type 2 support cost lines are mapped to resources. Once you have mapped your general ledger to the standardised cost ledger, you will get a list of the resources (see Spreadsheet CP3.1) used by your organisation.
12. The costs within a resource may contain various types of costs. For example, the patient-facing nurse resource could include the costs of nurses' salaries and support type 1 costs, such as protective clothing, stationery and computer hardware purchase, HR and finance costs.
13. You can use column H in Spreadsheet CP3.1 to suggest rows that are relevant and set up your own customised list in column I.
14. The transparency of these costs – what they are and where they come from in the general ledger – should be maintained throughout the costing process.
15. Once these separated costs have been calculated, they can be aggregated to whatever level the resources have been set at, and you can be confident the resource unit cost is accurate because it is underpinned by this costing process.
16. Column B in Spreadsheet CP3.1 lists the prescribed patient-facing and support type 2 resources to be used for the costing process. You are expected to use the most appropriate resource and not a generic resource to aggregate costs. For example, you are expected to use the physiotherapist and speech and language therapist resources, and not report all therapists' costs against the general therapist resource. The general resources are to be used only if there is no specific resource for that cost.
17. Column D in Spreadsheet CP3.1 categorises resources as either patient-facing or support type 2.

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- Columns I and J in Spreadsheet CP2.1 contains the mapping from each line in the cost ledger to the patient-facing and support type 2 resources. Use this information to identify the two-step prescribed allocation methods in Spreadsheets CP3.3 and CP3.4.

Activities

- Activities are the work undertaken by resources (including staff) to deliver the services required by their patients to achieve desired outcomes: for example, a procedure in theatre, pathology tests or a therapy session carried out in clinic.
- Together, resources and activities form a two-dimensional view of the costs incurred to deliver what activities. This can be displayed in a matrix such as that shown in Table CP3.1.

Table CP3.1: Example of a resource–activity combination in matrix form

Resource	Activity
	Day care
Speech and language therapists	X
Community nurse	X
Occupational therapist	X
Physiotherapist	X

- Activities are categorised either as patient-facing or type 2 support activities.
- You need to identify all the activities your organisation performs from the prescribed list of patient-facing and support type 2 activities in column B in Spreadsheet CP3.2. You are expected to use the most appropriate activity. For example, audiology assessments should be reported using the ‘audiology assessment’ activity rather than the ‘outpatient care’ activity, and for endoscopy use the ‘endoscopy’ activity rather than ‘outpatient procedure’ or ‘theatre care’.
- Some activities are informed by patient-level feeds: for example, the activity ‘ward care’ uses information from the ward stay patient-level feed for costing,

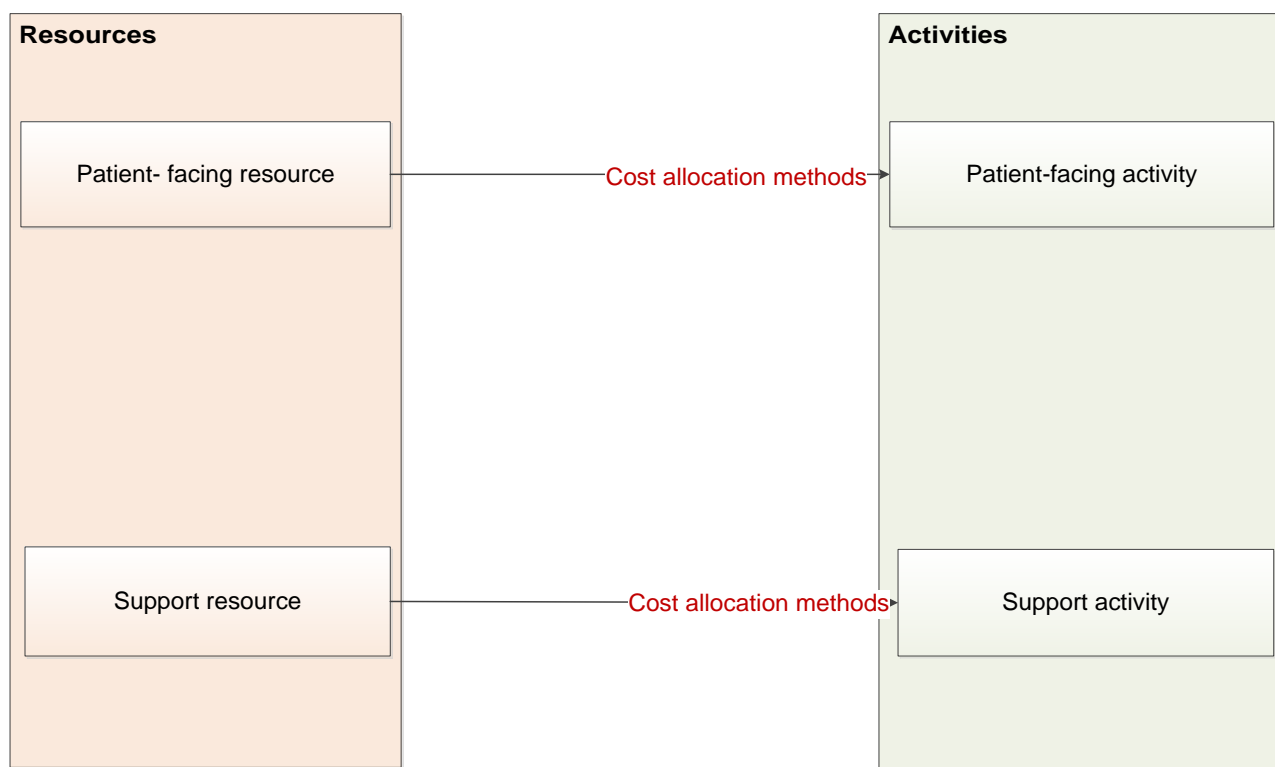
Integrated costing processes

and the 'dispense all other medicine scripts' activity uses information from the medicines dispensed patient-level feed for costing.

24. Some activities use other information sources for costing: for example, the 'CNST indemnity' activity requires the CNST schedule to allocate the costs properly.
25. Column F in Spreadsheet CP3.2 indicates if the information source is one of the prescribed patient-level feeds or if another information source is required.

Allocating resources to activities

Figure CP3.1: Extract from the costing diagram spreadsheet showing allocation of resources to activities



26. Only costs that have an activity-based cost allocation method are assigned a resource and activity from the prescribed lists of resources and activities.
27. You need to use these prescribed resource and activity combinations in your costing system.

Integrated costing processes

28. The resource and activity combinations used in the costing process for your organisation are identified by:
 - obtaining the list of resources for your organisation from mapping your general ledger to the cost ledger (see Integrated standard CP2: Clearly identifiable costs) and
 - identifying the list of activities performed by your organisation from the prescribed list (see Spreadsheet CP3.2).
29. You can ignore the resource and activity combinations in spreadsheet CP3.1 for activities your organisation does not provide.
30. Resources need to be apportioned to activities in the correct proportion before being allocated to each activity. There are three ways to do this:
 - based on actual time or costs²³ from the relevant feed
 - using relative weight values created in partnership with the relevant departments
 - using a local information source.
31. Where one resource needs to be apportioned to several activities, you need to determine what percentage of the cost to apportion, after discussions with clinicians and managers and supported by documented evidence where available (eg medical job plans). These splits and their basis should be recorded in your ICAL worksheet 13: % allocation bases. Please note that this is a different process from disaggregating costs in your general ledger for mapping to the cost ledger.
32. As an example, the division for medical staffing costs shown in Figure CP3.2 disaggregates the cost ledger further to resource/activity level. The figure shows how this could look in the resource–activity matrix.

²³ The actual costs should be used as a relative weight value rather than a fixed cost.

Integrated costing processes

Figure CP3.2: Identifying the correct quantum of cost to apportion to activities

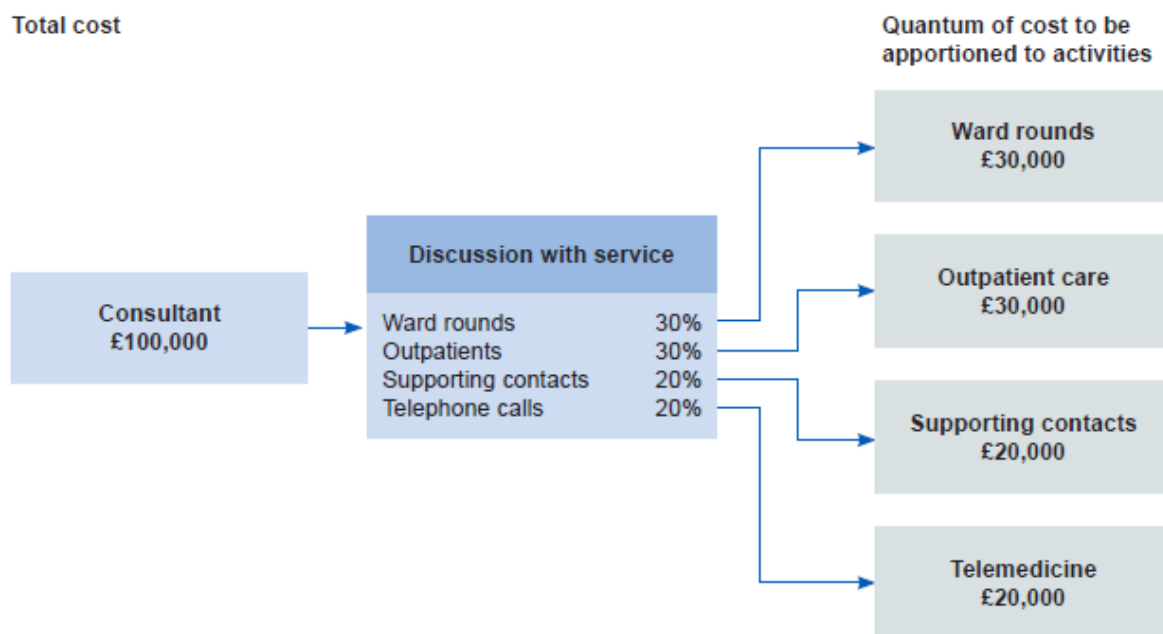


Table CP3.2: Example of a resource and activity matrix for a consultant using the information in Figure CP3.2 for costing

Activity	Resource
	Consultant
SLA098: Ward rounds	£30,000
SLA135: Outpatient care	£30,000
SLA099: Supporting contacts	£20,000
SLA149: Telemedicine	£20,000

33. Use a relative weight value unless there is a local reason for applying a fixed cost.
34. Do not apportion costs equally to all activities without clear evidence that they are used in this way, and do not apportion costs indiscriminately to activities. You must allocate your patient-facing resources to the patient-facing activities using the methods in column F in Spreadsheet CP3.3.

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35. You must allocate your type 2 support resources to the type 2 support activities using the methods in column D in Spreadsheet CP3.4.
36. Where the same cost driver is used for several calculations in the costing system, and providing the costs can be disaggregated after calculation, you can aggregate the calculations in your costing system to reduce calculation time. For example, if numerous costs on a ward use the driver length of stay, you can add them together for the cost calculation.
37. If you have a more sophisticated cost allocation method for allocating patient-facing or support type 2 resources to their activities:
 - keep using it
 - document it in your ICAL worksheet 15: Superior costing methods
 - tell us about it.
38. For the methods we have adopted as superior methods, see Spreadsheet CP3.5.²⁴
39. Some superior methods require a subset of resources.²⁵ For example, the Acute standard CM1: Medical staff superior method of allocating actual payroll detail for non-consultant medical staff needs a resource below the standard level of resources. There is no requirement currently to adopt this method, but if you are already performing such detailed work, continue to do so and log it in your ICAL worksheet 15: Superior costing methods.
40. We do not accept some cost allocation methods as superior to the prescribed methods. These include using income or national averages to weight costs.
41. The key cost drivers, such as length of stay, to inform the cost allocation methods can be obtained from the patient-level feeds. The patient-level feeds will also provide the information needed to use relative weight values in the costing process, such as actual drug costs in the medicines dispensed feed.

²⁴ The list of superior methods has been developed from implementation experiences across sectors. We would like to hear about any superior methods you are using.

²⁵ See Integrated standard CP2: Clearly identifiable costs – including Figure CP2.3: Mapping the costing process components with the inclusion of a local resource.

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42. Investigate any costs not driven to an activity, or any activities that have not received a cost, and correct these.

Traceable costs

43. Where the actual costs²⁶ of items are known, use them in the costing process as a relative weight value²⁷ to allocate costs to the activities (see Table CP3.3).
44. Items for which a traceable cost may be available include:
- drugs, including high cost drugs
 - security – patient-specific cost of escorting using an external provider
 - patient appliances
 - pacemakers and other cardiac devices
 - hearing aids – bone-anchored, digital
 - theatre consumables.

Table CP3.3: Using traceable costs as a relative weight value

	Number of prostheses	Expected cost	Expected spend	Actual spend	Weighted spend ([expected spend/total expected spend] × actual spend)
Prosthesis A	5	1,000	5,000	Not known	4,091
Prosthesis B	12	500	6,000	Not known	4,909
Total			11,000	9,000	9,000

45. If the value of the item is material to the cost of the patient and you want to use the actual cost, you must ensure it matches the value in the ledger. If there is under or over-recovery, you must use the cost as a relative weight value, as outlined above.

²⁶ These actual unit costs are known as traceable costs.

²⁷ If an actual cost is applied, it is likely that costs will be over or under-recovered in the costing system, so actual traceable costs should be used as a relative weight value to allocate the costs.

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46. Some departments may have local databases or an inventory management system that record material cost components against the individual patients who received them: for example, interventional radiology or endoscopy consumables. These values can be used in the costing process as a weighting to allocate the costs.

Relative weight values

47. Relative weight values are values or statistics used to allocate costs to a patient event in proportion to the total cost incurred.
48. One way to store the relative weight values for use in your costing system is to use statistic allocation tables.
49. Income values and national cost averages should not be used as relative weight values.
50. Relative weight values are used to allocate costs when other drivers are not available or appropriate. You must develop and agree them with the relevant service managers and healthcare professionals to ascertain all aspects of the costs involved and ensure these are as accurate as possible.
51. Different costs will require different approaches to derive appropriate relative weight values to support their allocation to patients. For example, a scan requires relative weight values for:
 - review time per scan
 - contrast required per scan.
52. You should allocate all costs to patients based on actual usage or consumption. In exceptional circumstances where you cannot do this, you should use a relative weight value to allocate costs to a patient.
53. Where time is the actual usage measure, it relates to patient-facing time and does not include preparation/follow-up time or travel time.
54. The approach should not be high level: for example, the measure should not be the average time to carry out a test or investigation and instead tailored to

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the particular activity. To do this you need to break down the activity into its component costs and measure the drivers of these individual costs.²⁸

55. Relative weight values should be reviewed on a rolling programme or when a significant change occurs in the relevant department.

Pathology and diagnostic imaging

56. The diagnostic imaging and pathology feeds include the count of the number of tests undertaken, but for costing purposes a relative weight value table needs to be developed to understand the resources used by each type of test.
57. Spreadsheet CP3.6 specifies the relative weight values you need to develop with the department to help cost pathology activities, and which are to be used with the pathology patient-level feed.
58. Spreadsheet CP3.7 specifies the relative weight values you need to develop with the department to support the diagnostic imaging activities, and which are to be used with the diagnostic imaging patient-level feed.
59. The relative weight values for pathology and diagnostic imaging require information on staff banding, the time it takes to complete a test, and costs of associated supplies and equipment.
60. Additional specific information is required to calculate some supplies and equipment costs:
 - equipment maintenance per test is calculated as the total equipment maintenance cost for each machine divided by the number and type of tests it performs
 - equipment depreciation per test is calculated in the same way as equipment maintenance, with the costs taken from the fixed asset register
 - costs for a 'sent away' pathology test are ascertained from invoices on the general ledger, with additional carriage costs (eg for dry ice) also taken into

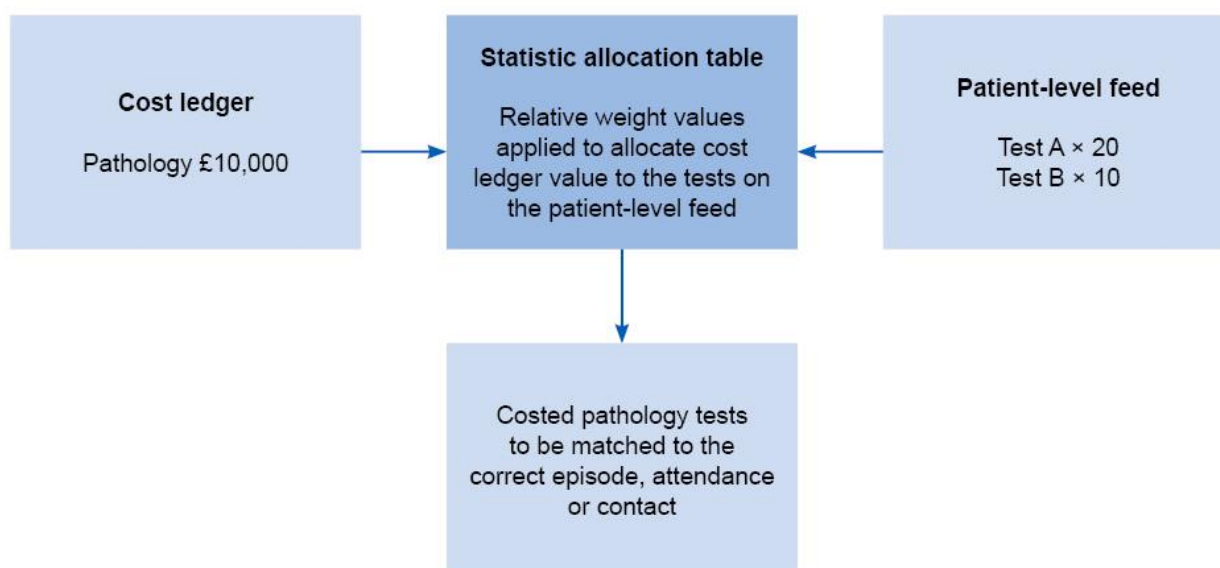
²⁸ We appreciate that some areas may not have defined and collected their activity types in this way. Work with the information you have and recommend development of improved activity recording over time, as this type of data can benefit understanding of patient care as well as the costing process.

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account; management accounts and the supplies department will need to use identifiable ledger codes for these tests.

61. If you have already undertaken a costing exercise in which you have calculated the relative weight values to be used in costing diagnostic imaging or pathology, you do not need to repeat this exercise.
62. Once the relative weight value is calculated, it should be used in the costing system to allocate the costs in the cost ledger based on the type of tests on the patient-level feed (Figure CP3.3).

Figure CP3.3: Allocating the costs in the cost ledger for pathology using relative weight values



63. If your organisation contracts out diagnostic imaging or pathology, this approach will not be required as long as the supplier can provide the unit cost per test rather than a block amount.

Ward rounds/healthcare professional support of inpatient units

64. The ward stay (WS) feed contains information on patient length of stay for each ward, but not how much time a consultant or other healthcare professional spends on ward rounds or the number of ward rounds they undertake.

Integrated costing processes

65. A relative weight value is required for costing if a healthcare professional:²⁹
- does more than one ward round a day
 - spends more time with one cohort of patients than others during ward rounds due to the specialty type, age, complexities, co-morbidities or care programmes of these patients.
66. Use the template in Spreadsheet CP3.8 to obtain the information required about ward rounds.
67. There is no need to calculate a relative weight value for consultant ward rounds that do not meet either of the above criteria.
68. As a starting point, we recommend you identify consultants who care for patients with different treatment function codes. Then ascertain if their ward rounds are longer for particular cohorts of patients,
69. Some healthcare professionals may want to refine the calculation of relative weight values further, eg by primary diagnosis or procedure. Work with clinicians to derive relative weight values that ensure the costing is accepted by them.

Type 1 support costs

70. To allocate support type 1 costs in the correct proportion, you may need to identify relative weight values by obtaining the relevant information from the departments.
71. An example of a statistic allocation table for the relative weight value of staff budgeted headcount is given in Table CP3.4.
72. You may add additional information to weight a relative value even further. For example, you can add cleaning rotas or location weighting to floor area for cleaning, so theatres/clinical areas get a bigger proportion of cleaning costs than corridors. If you do this, continue to do so and document the basis in your ICAL worksheet 15: Superior costing methods.

²⁹ See Standard CM1: Consultant medical staffing for your sector for further information.

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Table CP3.4: Budgeted headcount statistic allocation table

Department	Budgeted headcount
Pharmacy	15
General ward	8
Main theatre	20
Clinic reception	2
Emergency department	30
Finance office	25
Total	100

73. Where you use local service information to provide the relative weight values, you should keep a record of the source of information in your ICAL worksheet 17: Consultation and engagement for this information.
74. We understand that some local allocation methods may be used during transition. You should record these in your ICAL worksheet 14: Local costing methods.

Example: Using a pathology relative weight value

A simplified derivation of a relative weight value for pathology tests and how it is used is given below. In reality, other factors would need to be built into the relative weight value, as shown in Spreadsheet CP3.6.

The method outlined in this example can also be used if traceable costs are used as relative weight values.

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Table CP3.5: Information on resources required for selected tests

	Albumin: creatinine ratio	Alcohol (ethanol)	Aldosterone	Alkaline phosphate
Time (min) (x)	6	15	18	6.5
No of staff required (y)	2	1	1	2
Weighted time (x*y)	12	15	18	13
Relative weight value	1.2	1.5	1.8	1.3

Table CP3.6: Pathology tests with a derived relative weight value

Code	Description	Relative weight value	Number of tests	Resource name
ACR	Albumin:creatinine ratio	1.2	250,000	Biochemistry
ALC	Alcohol (ethanol)	1.5	125,000	Biochemistry
ALD	Aldosterone	1.8	300,000	Biochemistry
ALP	Alkaline phosphate	1.3	160,000	Biochemistry
Total			835,000	

The total resource value of £1,200,000 is allocated to the tests in proportion to their individual relative weight value as follows:

Step 1: Derive the weighted activity for each test

Table CP3.7: Weighted activity calculation

Code	Description	Relative weight value	Number of tests	Weighted activity
ACR	Albumin:creatinine ratio	1.2	250,000	300,000
ALC	Alcohol (ethanol)	1.5	125,000	187,500
ALD	Aldosterone	1.8	300,000	540,000
ALP	Alkaline phosphate	1.3	160,000	208,000
Total			835,000	1,235,500

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Step 2: Calculate the weighted resource unit cost (WRUC)

WRUC = total resource value / total weighted activity

£1,200,000/1,235,500 = £0.97

Step 3: Calculate the unit cost of each type of test

Multiplying the WRUC by each relative weight value gives the estimated unit cost for each test.

Table CP3.8: Unit cost calculation

Code	Description	Relative weight value	WRUC	Unit cost
ACR	Albumin:creatinine ratio	1.2	0.97	1.17
ALC	Alcohol (ethanol)	1.5	0.97	1.46
ALD	Aldosterone	1.8	0.97	1.75
ALP	Alkaline phosphate	1.3	0.97	1.26

Step 4: Checking the result

The result can be checked by multiplying the number of tests by the unit costs. The total should equal the total resource value.

Table CP3.9: Checking the result

Code	Description	Unit cost	Activity	Total cost
ACR	Albumin:creatinine ratio	1.17	250,000	£291,380
ALC	Alcohol (ethanol)	1.46	125,000	£182,113
ALD	Aldosterone	1.75	300,000	£524,484
ALP	Alkaline phosphate	1.26	160,000	£202,023
Total			835,000	£1,200,000

PLICS collection requirements

Resources

75. Spreadsheet CP2.1 contains a mapping from the costing account code (CAC) via allocation resources to the collection resources. This outlines CACs that are expected to be wholly out of scope for collection. Some CACs need to be disaggregated to ensure the correct costs are excluded from collection. Spreadsheet CP3.1 contains a mapping from allocation resources to collection resources. Some allocation resources map to multiple collection resources because we have included a department resource in the cost collection for therapies, diagnostics, pathology and pharmacy costs. All other service costs in the ledger must not map to the department resources. Validations will be built into the collection to check resource and activity combinations in the 2019 collection.

Activities

76. Allocation activities are mapped to collection activities in Spreadsheet CP3.2. Some allocation activities are out of scope for the PLICS collection; these costs will either be reported in the reference cost workbook or in the cost reconciliation. Review Spreadsheet CP3.2 and Sections 7, 19 and 20 from the *National cost collection guidance 2019* for all excluded services and costs from PLICS.

CP4: Matching costed activities to patients

Purpose: To achieve consistency across organisations in assigning costed activities to the correct patient episode, attendance or contact.

Objectives

1. To ensure the prescribed matching rules are used for consistency.
2. To assign costed activities to the correct patient episode, attendance or contact.
3. To highlight and report source data quality issues that hinder accurate matching.

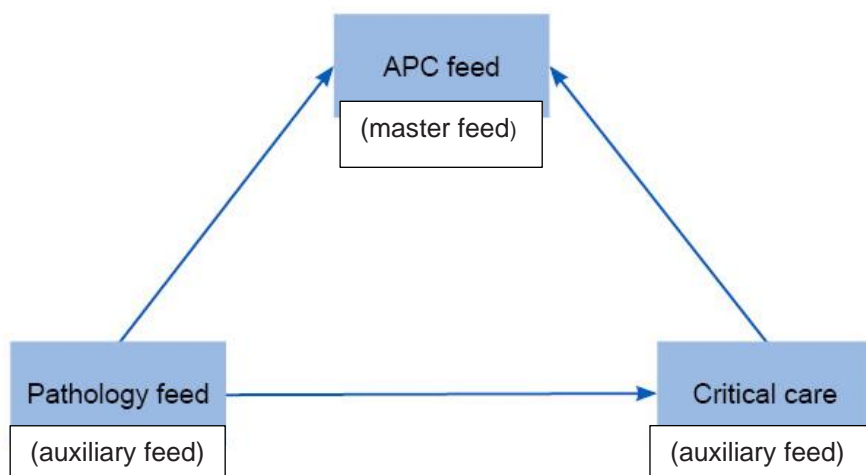
Scope

4. This standard should be applied to all costed activities.³⁰
5. Organisations with critical care services should use a three-way matching system, where auxiliary feeds such as pathology can be matched to the auxiliary feed critical care to ensure more accurate matching, as shown in Figure CP4.1.

³⁰ Integrated standard CP3: Appropriate cost allocation methods identifies which patient-level activities are part of the matching process.

Integrated costing processes

Figure CP4.1: Three-way matching system



Overview

6. Matching is integral to accurate patient-level costing. For an accurate final patient unit cost, the costed activities need to be matched to the patient episode, attendance or contact in which they occurred.
7. The costing process matches costed activities to patients in two steps:
 1. allocate resources to activities (explained in Integrated standard CP3: Appropriate cost allocation methods)
 2. match costed activities to the correct patient episode, attendance or contact (explained in this standard).
8. The costing process uses two approaches to match costed activities to patients:
 - for activities informed by a patient-level feed, use the prescribed matching rules
 - for all other activities, use the prescribed cost allocation methods to match the costed activities to the patient.
9. The prescribed matching rules ensure the relevant auxiliary data feeds can be attached to the correct patient episode, attendance or contact.

Integrated costing processes

10. Matching rules need to be hierarchical and strict enough to maximise matching accuracy, but not so strict that any matching is impossible. Matching rules that are too lax risk false-positive matches occurring – that is, activity is matched to the wrong patient episode, attendance or contact.
11. The matching hierarchy in the prescribed matching rules determines which master feed (that is, the patient administration system (PAS) datasets) the auxiliary feed is matched to, and the order in which to identify the correct master feed to match to.
12. If a data feed contains the patient's point of delivery (PoD) or location and this data field is considered robust, use this to determine which core PAS patient dataset to match to. For example, if a patient is recorded as an outpatient or community contact (non-admitted patient care (NAPC)) in the data feed, this patient's activity is first matched against the master outpatient (NAPC) dataset. If the PoD data field is considered robust, records should be matched to the outpatient (NAPC) dataset only, to avoid the risk of false-positive matches.
13. As the matching patterns for data feeds differ depending on the activities they contain, each has a distinct set of matching rules. Matching rules may differ in their hierarchies, date parameters or additional data fields used in the matching criteria.
14. The rules are designed to match iteratively by using the strictest matching rules first and then relaxing these if a match is not achieved. These rules are designed to achieve a balance between the number of false positives being matched and the number of records remaining unmatched.
15. Unmatched records should be reviewed.
16. The accuracy with which costed activities are matched using the prescribed matching rules depends on the quality of both the master feeds and the auxiliary feeds. Follow the guidance in Standard IR2: Managing information for costing to support your organisation in improving data quality.

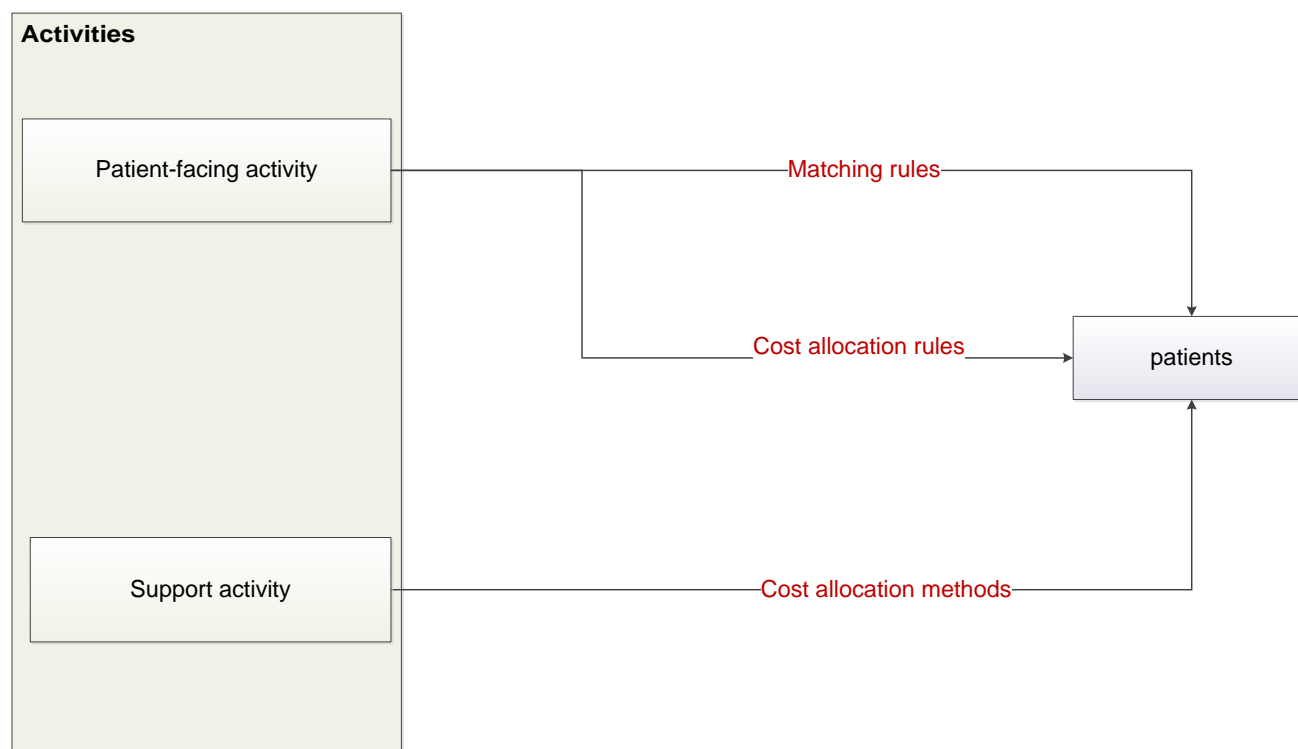
Integrated costing processes

What you need to implement this standard

- Spreadsheet CP3.3: Methods to allocate patient-facing resources, first to activities and then to patients
- Spreadsheet CP3.4: Allocation methods to allocate type 2 support resources, first to activities and then to patients
- Spreadsheet CP4.1: Matching rules

Approach

Figure CP4.2: Excerpt from the costing diagram spreadsheet showing matching costed activities to patients



Integrated costing processes

Using the prescribed matching rules

17. The episode/attendance/contact ID³¹ always generates the best match as this is unique to the patient and the relevant data range.³²
18. If your auxiliary data feeds are obtained from the PAS³³ and you can include the episode/attendance/contact ID in the feeds, you should use this ID to match to the master feeds.
19. If your auxiliary feeds do not include the episode or attendance ID, you should use the prescribed matching rules in Spreadsheet CP4.1.
20. If your matching rules are more sophisticated than the prescribed matching rules and improve the accuracy of your matching, continue to use them and record them in your integrated costing assurance log (ICAL) worksheet 15: Superior costing methods.
21. If an element of a prescribed matching rule would produce a false-positive match for a particular feed, adjust the rule to ensure a more accurate match and document this in your ICAL worksheet 15: Superior costing methods.
22. Activities from the non-integrated systems need to be matched to these groups of patients:
 - patients discharged during the costing period (APC feed)
 - patients not discharged and still in a bed at midnight on the last day of the costing period (APC feed)
 - non-admitted patient care (NAPC feed)
 - minor injury unit (MIU) or A&E attendances (A&E/urgent care feed)
 - critical care stays (adult, paediatric and neonatal critical care feed).

³¹ In the Mental Health Services Data Set (MHSDS), this is: admitted patient care (APC feed) a. local patient identifier (extended)', b. 'start date (care professional admitted care episode)', c. 'end date (care professional admitted care episode)'; non-admitted patient care (NAPC feed) d. 'care contact identifier', e. care contact date'. In some organisations the care contact identifier will include the care contact date. If this is the case in your organisation, you do not need to add the care contact date again.

³² If there is more than one contact on one day, the ID should include this, whereas a simple aggregation of patient identifier and date will only reflect one contact on one day.

³³ We understand that some mental health organisations use 'ward stay' data as a separate auxiliary feed. We are considering adding this to the information requirements.

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23. Some activities from non-integrated systems should **not** be matched:
- those for patients not in the provider's care, including direct access and contracted-in activity; however, there may be instances where such activities should be matched, eg diagnostic imaging for direct access physiotherapy
 - items such as replacement orthotics, homecare medicines or blood factor products for which there may be no corresponding episode, attendance or contact (although the organisation provides these, they can be sent directly to the patient's home); these items should be recorded as 'reconciliation items'
 - drugs dispensed from pharmacy for a patient whose episode is already closed
 - drugs issued by pharmacy but sent to another organisation without a patient contact,³⁴ even if the patient is under a care plan with your organisation
 - drugs dispensed from pharmacy to patients who did not attend (DNA) or who were not brought (WNB) to clinic.
24. There are no prescribed matching rules for the following feeds:
- NAPC – DNA, WNB
 - clinical multidisciplinary team (MDT) meetings.
25. We know that not all organisations have or need separate feeds for some activity – for mental health organisations, for example, the MHSDS APC feed contains ward information and the MHSDS NAPC feed contains DNA information, so no matching is needed.
26. Direct access activity must be correctly identified using the direct access flag in column D in Spreadsheet IR1.2 to avoid it being incorrectly matched to other episodes or attendances for that patient. For example, giving all direct access patients a hospital patient identifier risks non own-patient care activity being incorrectly matched to an episode, attendance or contact with the same patient identifier. An incorrect match could be made if a patient has previously

³⁴ For more guidance on how to cost patient-specific drugs, see Acute standard CM10: Pharmacy and medicines.

Integrated costing processes

been a patient at the organisation and their hospital patient identifier is applied to the direct access activity.

27. Contracted-in activity must be correctly identified using the contracted-in flag in column D in Spreadsheet IR1.2 to avoid being incorrectly matched to episodes or attendances.
28. The rules to identify and correctly treat direct access and contracted-in activities are included in the prescribed matching rules.³⁵

Matching hierarchy used in the prescribed matching rules

29. You only need to follow those steps relevant to your organisation. For example, if your organisation does not provide A&E services, start at the next relevant service and so on through the steps in order.
30. All the feeds with prescribed matching rules in Spreadsheet CP4.1 follow the hierarchy described below. The hierarchy is adjusted slightly for each feed to reflect how the service is provided, but the principle is that for all sectors the matching feed is matched in the first instance to A&E attendances, and then to:
 - A&E activity on an observation ward
 - MIU/A&E activity on an observation ward
 - MIU/A&E activity reported on the NAPC feed
 - critical care – adult
 - critical care – paediatrics
 - critical care – neonatal
 - APC
 - NAPC
 - unmatched to the treatment function code (TFC)
 - if the TFC is missing, to the providing department.
31. In addition to this hierarchy, searches up to 720 hours either side of the delivery dates increase the chances of a match.

³⁵ For more guidance on how to treat direct access and contracted-in activities, see Integrated standard CM8: Other activities.

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32. You must search 24 hours before and after the exact date, and then expand the search timeframe by 24 hours consecutively up to 720 hours. For example:
 - 24 hours before, 24 hours after
 - 48 hours before, 48 hours after
 - 72 hours before, 72 hours after
 - 696 hours before, 696 hours after
 - 720 hours before, 720 hours after.

33. You must search APC 24 hours before, then NAPC 24 hours before, then APC 24 hours after, then NAPC 24 hours after, expanding the search timeframe by 24 hours for each feed consecutively up to 720 hours. For example:
 - 24 hours before APC
 - 24 hours before NAPC
 - 24 after hours APC
 - 24 hours after APC
 - 48 hours before APC
 - 48 hours before NAPC
 - 48 hours after APC
 - 48 hours after NAPC.

34. Include MIU/A&E in this sequence if the matching rules require this, following the hierarchy of MIU/A&E, APC, NAPC, before, after.

35. The prescribed matching rules contain conditional criteria, which should be followed in order.

36. The matching process should then search again without the conditional criteria, incorporating the final prescribed matching elements.

37. If you have (or develop) other auxiliary feeds, these should be matched after the mandated feeds, to ensure the prescribed matching to the master feeds is completed first. The mental health auxiliary feeds in Mental health standard

Integrated costing processes

IR1: Collecting information for costing should be matched in the order given in Spreadsheet IR1.1.

Using the prescribed cost allocation methods

38. For patient-facing activities not informed by a patient-level feed, use the prescribed cost allocation methods in column F in Spreadsheet CP3.3.
39. For support type 2 activities not informed by a patient-level feed, use the prescribed cost allocation methods in column D in Spreadsheet CP3.4.

Other considerations

40. Some costed activities will inevitably not match because either the activity took place too long before the episode/attendance, or the quality of the information in the activity feed is so poor that an appropriate match cannot be found: for example, a diagnostic imaging scan that was done over 720 hours (30 days) before the connected NAPC contact. As stated above, non-matched activity should be reviewed.
41. Develop a list of 'unlikely matches' to be included in the matching rules for your organisation to ensure that costs for some activities are not incorrectly assigned to episodes. For example, drugs that are never used by certain specialties should never be assigned to episodes within those specialties, even if other matching criteria are fulfilled. Engagement with clinicians, the pharmacy team and other staff will help you identify these 'unlikely matches'.³⁶
42. Your costing system should produce a report of the matching criteria used in the system, as described in report CP5.1.8 in Spreadsheet CP5.1.
43. Review is necessary because if costed activities are matched on the least stringent criteria, work is needed to improve data quality so that activity can be matched more accurately. You should have a rolling programme to review this.

³⁶ You will need to work with your costing software supplier to ensure regular reporting of these items is possible, and have a process in place to audit/amend any erroneous matches.

Integrated costing processes

Reporting unmatched activity for local business intelligence

44. Organisations have traditionally treated the cost of unmatched activity in different ways. Most commonly, it was absorbed by matched activity, which could have a material impact on the cost of matched activity, particularly when reviewing the cost at an individual patient level for comparison with peers and tariff calculation.
45. For local reporting purposes we recommend you do **not** assign unmatched activity to other patient episodes, attendances or contacts.
46. To achieve consistent and comparable costing outputs, unmatched activity should be treated consistently across organisations. We suggest applying the following rules for any unmatched activity:
47. If the specialty that ordered the item can be identified but the item cannot be matched to a patient episode, attendance or contact, the cost sits in the specialty under unmatched items. It should not be matched to the other patients within that specialty.
48. If the specialty that ordered the item cannot be identified, the cost sits in the providing department under unmatched items. Likewise, the cost should not be matched to the patients within the most likely specialty. For example, if a pathology test cannot be matched to a patient episode, attendance or contact and the requesting specialty (eg cardiology) cannot be identified, the unmatched activity is reported under the pathology service line as this is the department that provided the service. This data should be discussed with the department to improve understanding or data quality in the feed.
49. If reported unmatched activity forms a material part of an organisation's expenditure, this is likely to be due to poor source data. As this issue will deflate the patient unit cost, it needs to be identified and steps taken to improve the quality of the source data, rather than artificially inflating the patient unit cost by allocating unmatched activity.³⁷ Please follow the guidance in Integrated standard IR2: Managing information for costing to support your organisation in improving its data quality.

³⁷ See Integrated standard CM2: Incomplete patient events for guidance on matching auxiliary feeds to incomplete patient events and how to treat diagnostics that were performed in a different costing year.

Integrated costing processes

50. Tables CP4.1 and CP4.2 show how unmatched activity could be reported to assist business intelligence.

Table CP4.1: Example of unmatched activity (in blue) within a specialty

Specialty: Medical oncology		
Total activity	Total resource cost	Income
Inpatient care – core episodes	XX	XX
Critical care for oncology patients	XX	XX
Outpatient care	XX	XX
Cancer MDTs	XX	XX
Unmatched activity identified as oncology but unable to match to individual patients	XX	
Total	XXX	XXX

Table CP4.2: Example of unmatched activity (in blue) within a providing department

Department: Pathology	
Total activity	Total resource cost
Cardiac service	XX
Medical oncology service	XX
Dermatology service	XX
Critical care service	XX
Unmatched activity unable to be allocated to a specialty or patient	XX
Total	XXX

PLICS collection requirements

51. For the requirements of the PLICS collection, unmatched cost should not be reported separately. All unmatched costs should be allocated to patient

Integrated costing processes

episodes, attendances and contacts using matched activity. Unmatched activity should be excluded from allocation methods so costs are allocated to matched activity only, with the exception of the activities from the non-integrated systems outlined above. You need to be able to flag unmatched activity and cost in your costing system to complete the costing assessment tool.

52. For 2018/19, providers should be allocating costs to completed episodes only. Episodes that started in the previous collection year require activity data only from the previous financial year to be carried forward into 2018/19, to be included in allocation and matching rules.

CP5: Reconciliation

Purpose: Process for reconciling costs and income to the organisation's accounts and to reconcile the activity counts reported by the organisation.

Objectives

1. To ensure the cost and income outputs from the costing system reconcile to the organisation's accounts.
2. To ensure the activity outputs from the costing system reconcile to what the organisation is reporting.

Scope

3. This standard covers all costs, income and activity included in the costing process.

Overview

4. All outputs of the costing process must reconcile to the information reported to the board, and in the final audited accounts. This ensures a clear link between these outputs and the costs and activity information captured in the source data.

What you need to implement this standard

- Costing principle 2: Good costing should include all costs for an organisation and produce reliable and comparable results
- Costing principle 4: Good costing should involve transparent processes that allow detailed analysis³⁸

³⁸ See *The costing principles*: <https://improvement.nhs.uk/resources/approved-costing-guidance/>

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- Spreadsheet CP5.1: Cost and income reconciliation reports
- Spreadsheet CP5.2: Activity reconciliation reports

Approach

Reconciliation of costs and income

5. The costs and income outputs must reconcile to the main sources of this information, with the general ledger output and the organisation's reported financial position.³⁹
6. To demonstrate that the outputs of the costing process reconcile to the main sources of information, use the reports detailed in Spreadsheet CP5.1. The reports must be available from the costing system.
7. To support reconciliation and reporting, once the costing model is fully processed the costs associated with patients and other cost groups should be categorised into the five cost groups listed in Table CP5.1.

Table CP5.1: Cost and activity groups

Cost group	Description
Own-patient care	Costs relating to the organisation's own-patient activity, including: <ul style="list-style-type: none">• incomplete patient events• all cancer MDT meetings where your organisation's patients are discussed• other MDT meetings• contracted-out services (such as capacity purchased from private inpatient organisations)• private patients, overseas visitors, non NHS-funded patients and patients funded by the Ministry of Defence• local authority-funded activity where costed at patient level
Education and training (E&T)	Costs relating to E&T in the organisation
Research and development (R&D)	Costs relating to R&D in the organisation

³⁹ See Integrated standard CP2: Clearly identifiable costs for guidance on where adjustments may be made between the general ledger output and the cost ledger, to be included in your reconciliation.

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Cost group	Description
Other activities	<p>Includes the costs related to the organisation's:</p> <ul style="list-style-type: none"> • contracted-in services, such as pharmacy services supplied to another provider • commercial activities • direct access services where the patient is referred from primary or community care for assessment only but the care remains with the GP/community organisation • neonatal screening programmes • other screening programmes • voluntary and other third-party sector services • local authority care • services funded in part or in full by local authorities • national programmes such as Scan4Safety • critical care transport where patient not brought to your organisation • external cancer MDT where your organisation's patients are not discussed • primary care services
Cost and activity reconciliation items	<p>Includes activity for which there are no corresponding costs</p> <p>Includes costs for which there is no corresponding activity, such as in these circumstances:</p> <ul style="list-style-type: none"> • homecare medicines including factor products • homecare appliances • a provider has an agreement to provide resources to an external body with no responsibility for delivering a service to a commissioner, eg a provider-to-provider service-level agreement – including national programmes • a staff member such as a youth worker is employed by a provider for activity undertaken by the local council and the provider is unable to include it in the costing system • grants or donations received • local authority cost or activity where there is no patient-level costed information

8. Where your organisation is commissioned to provide an activity, but this activity occurs outside your organisation and is recorded by an external body, you should obtain this information and include it in your organisation's costing data. If you cannot obtain the activity data, report the cost in reconciliation items.

9. Cost and activity reconciliation items have these benefits:

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- patient unit costs reflect the true cost of treatment undistorted by provider-incurred costs that are not related to the organisation's own-patient activity
- the true cost is more appropriate for comparison between peers as these costs can significantly affect cost reporting by different providers.

Reconciliation of activity

10. The activity outputs must reconcile to what your organisation reports. For example, if your organisation reports XX non-admitted patient care (NAPC) contacts in any costing period, your activity costing outputs should reconcile to this. To avoid any reconciliation differences due to timing, the patient-level feeds used in the costing process and those reported by the organisation should be created at the same time.⁴⁰
11. To demonstrate that the costing system's outputs reconcile to the main sources of activity information, the activity reconciliation reports detailed in Spreadsheet CP5.2 must be available from the costing system.
12. You should also reconcile the activity outputs to the activity in the source datasets to ensure all the activity you entered into your costing system has been costed and then included in the costing output.

Proxy records

13. Proxy records may be generated for services that do not keep a record of patient contacts or for information governance purposes; see Standard IR2: Managing information for costing.
14. For example, where services with sensitive/legally restricted data have contacts with no identifiable patient record, a proxy record may be created. These should be identifiable, and the count of patients clearly shown in activity reconciliations.
15. If possible, you should avoid generating proxy patient contact/attendance records to improve data quality within (or before entering data) the costing system, as this can lead to double counting of activity outputs. For example,

⁴⁰ Departments often continue to input data into the feeder system after the official end date. It is helpful if costing professionals understand any changes to the activity data after the point the costing activity dataset was run, as they may be asked questions about why current data showing in organisation dashboards does not reconcile to costing activity data.

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your organisation may use proxy patient attendance records for departments such as radiology, where it is not uncommon for an MRI scan or X-ray to be requested in advance of a booked outpatient appointment so that the scan can be discussed at the outpatient attendance. A proxy appointment may be created for the attendance for the scan, to link this activity and its associated costs to the outpatient attendance. Take care to avoid double counting if you use this approach.

16. It is better practice to work with your informatics department and service teams to create the correct data entry on the 'right first time' principle (see Standard IR1: Collecting information for costing) or to ensure the auxiliary feeds are matched to the appropriate record when it does occur. Creating proxy records can lead to double counting of activity outputs: for example, when someone later adds a missing record and it flows through to the costing system, a second amount of cost will be picked up for the same activity. However, if you have created proxy records, these will need to be shown in the activity reconciliation; otherwise PLICS will not reconcile to provider reports.
17. In your costing process do not include activity that is recorded in your data feeds but whose incurred costs sit in another organisation. Report this activity in 'cost & activity reconciliation items'.
18. To reconcile the activity used in the system to that actually carried out by the department/service, the activity count must be correct in the information feeds. For example, if each line on the NAPC feed represents one contact, a straight count of activity is adequate. If three separate lines on the feed represent a single contact, the reconciliation report needs to aggregate these lines to give an accurate activity count. Record this information in your ICAL worksheet 1: Patient level activity feeds.

Services with sensitive/legally restricted data requirements

19. Services with sensitive/legally restricted data requirements have extra levels of required information governance because the legal data holding regulations and patient consent is different. This will require costing for 'a' patient rather than 'the' patient, and in many cases the activity record will need to be pseudonymised before the information is transferred to the costing system.

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The reconciliation of both cost and activity will need to take this into account when comparisons are made with other trust records.

PLICS collection requirements

20. For collection, the provider's PLICS quantum must reconcile to its final audited accounts. See Section 20 of the *National cost collection guidance 2019*⁴¹ for more information.
21. For acute services, reported episodes, attendances and contacts must reconcile to your commissioning dataset (CDS) as reported to Secondary Uses Service (SUS), with variances explained. More information is contained in Section 4 of the National Cost Collection Guidance.
22. For mental health services, reported hospital provider spell and care contacts must reconcile to your mental health services dataset (MHSDS) and improving access to psychological therapies (IAPT) submissions, with variances explained. An additional cost group is required to identify services that are out of scope of the patient-level collection extracts. See the 2018/19 Mental health PLICS cost collection guidance for a list of these services.
23. For community services, reported hospital provider spell activity should reconcile to the commissioning data set (SUS) and care contacts must reconcile to your community services dataset, with variances explained. An additional cost group is required to identify services that are out of scope of the patient-level collection extracts. See the 2018/19 Community PLICS cost collection guidance for a list of these services.
24. Data validations will be added to the collections to check that the two reconcile. The validations and collection process will be outlined in the collection specification and workbook files to be released in March 2019.

⁴¹ <https://improvement.nhs.uk/resources/approved-costing-guidance-2019>

CP6: Assurance of cost data

Purpose: To ensure providers develop and maintain high quality assurance for costing and collection purposes.

Objective

1. To provide assurance that:
 - providers have implemented the standards and collections guidance properly
 - providers have applied the costing principles in the costing process and outputs
 - providers are maintaining a clear audit trail of the costing and collection process
 - processes are adequate to validate the accuracy of submitted data in line with the Approved Costing Guidance
 - patient pathways and cost data have been clinically reviewed.⁴²

Scope

2. This standard relates to all costing processes and outputs produced by the provider.

⁴² Later versions of the standards will require clinical review, but having taken feedback we recognise that for now developing these review processes should be the goal.

Integrated costing processes

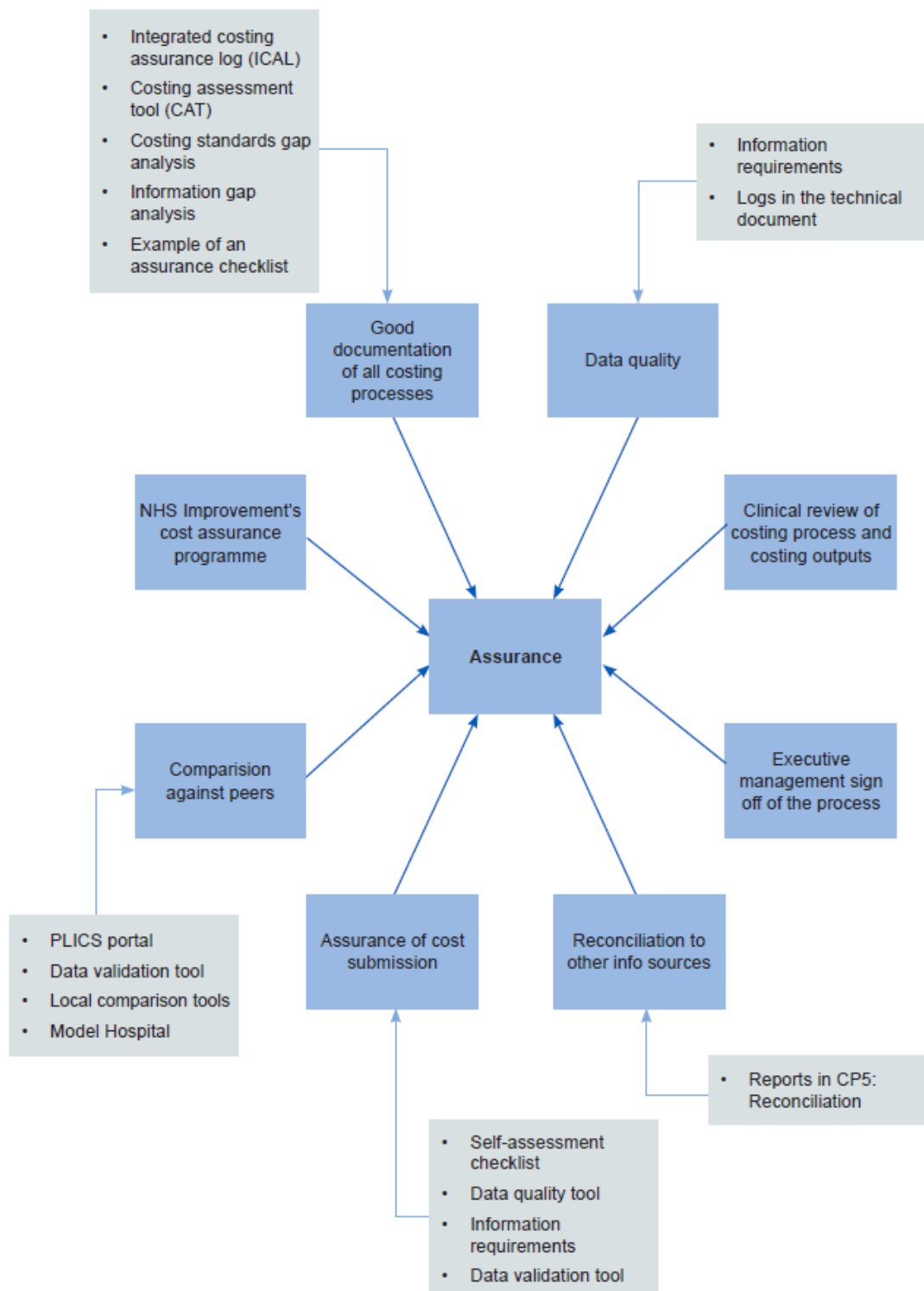
Overview

3. There are several ways to provide assurance on the costing and collection process, including:
 - formal audit of process and submission by the providers' internal and external auditors
 - evidence demonstrating:
 - compliance with the standards and associated guidance
 - users' review of cost data
 - use of the cost information to support decision-making (eg cost improvement plans, returns to regulators, local prices)
 - minutes of regular user/working group meetings.
4. The assurance process should be an integral part of producing cost information. Producing an audit trail, covering assumptions, decisions and reviews should be part of the process. This will enable your organisation to show both internal and external users that it has adequate processes for ensuring the accuracy of cost information.
5. Many stakeholders require assurance:
 - the executive team in its strategic decision-making
 - clinicians/healthcare professionals and their operational managers in analysing activities and clinical procedures
 - external stakeholders, who may make varied uses of the information.
6. The level of evidence should be sufficient to support the reason for making the change. It will also allow updates and changes to be made to the costing processes and can be linked to the integrated costing assurance log (ICAL) worksheet 18: Decision audit trail, to show why processes have been changed. This will support the assurance process for the board when submitting the costing submission. It can also help identify areas where costing needs to be improved, based on recommendations from findings that could not be completed in time for the submission.

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7. We provide several tools to help you develop and maintain an assurance process that will promote continued improvement of costing in your organisation. Figure CP6.1 shows examples of these.

Figure CP6.1: Assurance tools



Integrated costing processes

What you need to implement this standard

- Costing principle 4: Good costing should involve transparent processes that allow detailed analysis
- Costing principle 7: Good costing should engage clinical and non-clinical stakeholders and encourage use of costing information⁴³
- Integrated costing assurance log (ICAL) template⁴⁴
- Standards gap analysis template (SCAT)
- Information gap analysis template (IGAT)
- Costing assessment tool
- Data validation tool
- Access to NHS Improvement's PLICS portal

Approach

Documenting costing processes

8. You should use our tools to document your organisation's costing processes.⁴⁵ In particular:
 - The **ICAL** helps document compliance with the standards. It will record where local adjustments have been made and the reasons why. It will also ensure your organisation retains costing knowledge and expertise when costing practitioners change.
 - The **SGAT** summarises the costing process standards to help your organisation plan and prioritise implementing the standards.
 - The **IGAT** helps assess the gaps between the information collected and what the information requirements standards require. This will help discussions between informatic teams and costing practitioners on assessing and closing the gaps identified.
 - The **CAT** helps providers understand and record their progress in implementing the standards. It will help you focus your attention on areas to develop and improve based on their materiality.

⁴³ See *The costing principles*: <https://improvement.nhs.uk/resources/approved-costing-guidance/>

⁴⁴ These tools/templates are available on our website.

⁴⁵ See Tools and templates to help implement the standards:
<https://improvement.nhs.uk/resources/approved-costing-guidance-2019>

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9. Spreadsheet: Transition path describes a three-year plan for implementing the standards.
10. At the end of this standard is an example of a checklist to help you develop an assurance process.
11. The Model Hospital has useful information for reviewing the cost data.⁴⁶
12. Documenting all costing processes effectively brings benefits that include:
 - being able to show the assumptions and source data to end users, which will improve the outputs' credibility and increase confidence in their usefulness
 - a clear audit trail – an integral part of good documentation – will facilitate reconciliation and assurance, as well as provide evidence for the management of the overall process; it will also provide a template for improving future calculation of costs
 - understandable assumptions that can more easily be challenged, leading to improvements in the costing process.

Assurance on the quality of costing processes and outputs

13. Costing is a material and significant system in providers as it supports national and local pricing processes and generates the underlying data for business and investment decisions. Therefore, we expect providers to ensure costing is included in internal and external audits. This will provide assurance on the accuracy of cost data for internal and external users.
14. National reviews of the quality of the data submitted will be scheduled periodically – this is known as the costing assurance programme.
15. It is important to remember that understanding the costs of delivering services is fundamental to providers managing their financial position and to their business planning. This is why it is recognised that unless cost information is

⁴⁶ The Model Hospital is only available for acute services currently; see <https://improvement.nhs.uk/resources/model-hospital/>. Similar clinical and productivity models are being developed for mental health and community services.

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linked to the organisation's ongoing management, it will not accurately reflect the services being delivered.

16. The more services use cost information, the more they will understand the cost data and how it has been calculated. This in turn will build their confidence in the cost information produced for their service and enable its use for the transformation of care. Therefore, it is vital to offer an opportunity for services to review and give feedback on their cost data.
17. Cost information should be owned by senior managers and clinicians. The finance function needs engagement from across the organisation if it is to provide meaningful support.

Costing user group

18. An example of best practice in engaging stakeholders is to form a 'costing user group' with executive and clinical membership. Ideally, the chair will be a clinician.
19. Such a group's overall purpose is to improve the quality of cost information and oversee, provide ideas for, encourage and evaluate the use and understanding of costing information in the organisation.
20. It can achieve this by:
 - reviewing cost information and the cost submission
 - reviewing the quality and coverage of the underlying data
 - reviewing existing costing processes
 - agreeing priorities for reviewing and developing the system.
21. To assist with this, the group should be supported by members from:
 - IT (technical services)
 - informatics (information services)⁴⁷
 - clinical coding (if relevant)
 - finance

⁴⁷ IT technical services and information services may be form one department or separate. Regardless, as both elements are so critical to PLICS, both should be appropriately represented.

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- service managers
 - other care providers including senior nursing
 - E&T lead
 - a clinical champion (any discipline).
22. This type of review should be part of a rolling programme rather than a one-off as part of a national mandated collection.

Regular assurance processes

23. You should have a rolling programme of reviewing the costing processes and outputs to provide assurance that the costing information is sufficiently accurate for its intended use. The effort given to this type of validation should be proportionate to the significance of the costs being measured, and to the costing purpose in line with the principle of materiality.
24. It is important for you to work with clinicians, other healthcare providers and service managers so you can:
- understand all the resources and activities involved in delivering patient care
 - understand the information sources available to support costing
 - identify the expected costs associated with that care
 - ensure all information is reflected in the costing processes within your costing system.
25. Effective board engagement with costing is a prerequisite for improving and making better use of patient-level cost information. Boards have an important role in securing greater engagement between clinical and costing staff.
26. Effective executive support will also lead to more and better governance, including documenting and defining policies and procedures.
27. The director of finance signs off the cost submission as part of the self-assessment checklist. This is on the provider's behalf and confirms the trust has completed all required actions to ensure the submission's accuracy.

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Assurance on the reconciliation to other information sources

28. Reconciliation to financial and activity sources is an important part of providing assurance on the costing outputs' quality. It is important to provide assurance that a single source of data is used for all decision-making. Follow the guidance in Integrated standard CP5: Reconciliation to ensure you are reconciling to the appropriate information sources, and Spreadsheets CP5.1 and CP5.2.

Assurance on the quality of the cost submission⁴⁸

29. We provide tools to help you with the quality of your cost submission. These include:
- **The self-assessment checklist** at the end of this standard ensures providers are reviewing their data quality, and includes executive review and sign-off and minimum expected quality checks.
 - **The PLICS data quality tool** (Tableau) is accessed via NHS Improvement's single sign-on website. It reviews the submitted cost data, quickly identifying quality issues, and informs providers if resubmission is required. Providers will receive a quality/index report to help inform their costing and investigate their data. It also enables providers to review their costs with peers.
 - **The data validation tool** comprises mandatory validations that indicate whether the submission will fail based on the field and values formatting requirements for uploading the data. The tool also includes checks where analysing the data reveals warnings about expected outputs. These warnings are non-mandatory and should lead your investigation, validation and assurance of the cost data uploaded. There are separate data validation tools for each submission.

Comparison with peers

30. Acute providers who have submitted PLICS data can access the national PLICS portal via NHS Improvement's single sign-on website.⁴⁹ The PLICS portal enables them to review their submitted data and anonymously compare

⁴⁸ Information on these tools and where to find them is given in the cost collections guidance: <https://improvement.nhs.uk/resources/approved-costing-guidance>

⁴⁹ PLICS portals for mental health, ambulance and community services are in development.

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their outputs with those of their peers. In this way a provider can identify its outlying areas and focus on reviewing the activity and costing for these. The PLICS portal provides reports on where providers can improve their costing and assurance of their data. It also identifies potential productivity opportunities and other metrics such as the weighted average unit.

31. The data validation tool provides a baseline analysis of warnings that give assurance that all providers submitting data have input data that is comparable and subject to the same validations as their peers. The work that follows the warnings generated from the data validation tool will give additional assurance that providers have investigated and corrected their data to best fit the expected costs of the submission and those of their peers.
32. The CAT tool provides a dashboard that allows comparison of CAT scores against those of your peers.
33. You should have a rolling programme of local exercises to regularly compare your organisation's costs with those of your peers.

Costing assurance programme⁵⁰

34. The aim of the assurance process is to provide evidence of the work undertaken and the reasoning behind the decisions made. As such, the audit trail, evidence of meetings, discussions with clinicians, etc should be maintained but not be an end in itself.
35. Providing evidence for an external assurance audit should not be the main purpose of collecting this information.
36. The evidence provided should also be in harmony with the costing principles.⁵¹

⁵⁰ See *The Approved Costing Guidance 2019 – what you need to know and what you need to do* for details of the costing assurance programme: <https://improvement.nhs.uk/resources/approved-costing-guidance/>

⁵¹ See *The costing principles*: <https://improvement.nhs.uk/resources/approved-costing-guidance/>

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Example: An assurance checklist

As part of the ongoing assurance process you should use a checklist. Table CP6.1 is an example of a costing assurance checklist.

This example is for the standards published in January 2018 for 2018/19 data to be collected in the summer of 2019.

It shows an 18-month assurance cycle, so the next year's assurance cycle would start before the current year's cycle is completed. This means for a period of approximately four months, two years' assurance cycles would be running concurrently.

Table CP6.1: Example of a costing assurance checklist

Month	Process stage	Checklist	Completed
1 (Feb 2018)	Implementation of the standards	Standards and associated guidance read by costing team	
1	Implementation of the standards	Relevant standards shared and discussed with relevant departments eg: <ul style="list-style-type: none">• Standards IR1 and IR2, the information requirements – shared with informatics• Integrated standard CP1: Role of the general ledger in costing – with finance colleagues• Integrated standard CP5: Reconciliation – shared with your software supplier to ensure your system can produce your reports• Costing methods and costing assurance⁵² standards reviewed with relevant departments	
2 (March 2018)	Implementation of the standards	Complete the IGAT	
2	Implementation of the standards	Complete the SGAT	

⁵² Where relevant.

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Month	Process stage	Checklist	Completed
2	Implementation of the standards	Set up your ICAL: for example, information from services for relative weight values should be recorded (or referenced) in ICAL worksheet 17: Consultation and engagement. And decisions taken on the costing process should be recorded in ICAL worksheet 18: Decision audit trail.	
3 (April 2018)	Implementation of the standards	Identify areas to work on to improve the quality of costing for this cycle (implementation of standards through to collection).	
3	Implementation of the standards	Sense check identified areas against the costing principles	
3	Implementation of the standards	Meet clinicians and other healthcare providers and service managers to acquire the understanding and information needed to inform the costing process.	
3	Implementation of the standards	Inform and agree with executive managers the costing development approach you are taking for this cycle, eg: <ul style="list-style-type: none"> • following the transition path in the technical guidance • focusing on areas of local importance. 	
3 to 6 (April to July 2018)	Implementation of the standards	Implement developments in the costing system.	
6 (July 2018)	Implementation of the standards	Document processes, assumptions made, etc.	
6	Implementation of the standards	Revisit and refine your assumptions with clinicians and other healthcare providers and service managers to ensure understanding is correct and will provide meaningful results.	
6	Implementation of the standards	Sense check refinements against the costing principles.	
6 to 9 (July to Oct 2018)	Implementation of the standards	Implement developments in the costing system.	

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Month	Process stage	Checklist	Completed
9 (Oct 2018)	Implementation of the standards	Sense check first results from implementation developments with clinicians and other healthcare providers and service managers.	
9	Implementation of the standards	Update executive management on first results.	
10 to 14 (Nov 2018 to March 2019)	Implementation of the standards	Update costing system on refinements from sense check.	
15 (April 2019)	Preparing for the collection	Prepare for collection – review collection guidance again.	
16 (May 2019)	Preparing for the collection	Prepare submission using: <ul style="list-style-type: none"> • self-assessment checklist • data validation tool. 	
16	Preparing for the collection	Run the reconciliation reports in Integrated standard CP5: Reconciliation to ensure financial and activity values reconcile.	
16	Preparing for the collection	Sense check costing outputs and reconciliation reports in line with the costing principles.	
17 (June 2019)	Preparing for the collection	Obtain executive management sign-off of the submission.	
18	Post-submission	Complete the CAT.	
18 (July 2019)	Post-submission	Review: <ul style="list-style-type: none"> • the PLICS portal or other benchmarking source and share with stakeholders. 	
18	Post-submission	Update the ICAL	
Post-month 18	Post-submission	Compare with peers to identify outliers and to feed improvements into the next cycle of costing development.	

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