PLICS and reference costs best practice guidance for 2011-12

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Section 1: Introduction

Purpose

1. The purpose of this guidance is to support organisations using patient level information and costing systems (PLICS) to produce reference costs by:

   (a) identifying differences between PLICS and reference costs which PLICS users need to be aware of when producing reference costs
   (b) providing suggestions of best practice and workarounds used by NHS organisations to produce reference costs from PLICS data.

2. This guidance was first published in April 2011 following consultation with the Healthcare Financial Management Association (HFMA) Costing Special Interest Group. Quotations are predominantly from members of this group.

3. This second edition includes minor revisions and is designed to support 2011-12 reference costs. It should be read alongside:

   (a) Reference costs guidance for 2011-12[1]
   (b) NHS Costing Manual[2]
   (c) HFMA Clinical Costing Standards 2011-12[3].

Background

4. During 2010, the Department in partnership with the Audit Commission undertook a review of reference costs[4]. This highlighted issues for PLICS organisations when producing reference costs, particularly in reconciling the two data sets. In response, the Department agreed to:

   "work with a number of implementers of PLICS to understand the interaction between reference costs and patient level cost data and, if appropriate, produce supplementary guidance to help PLICS sites in the production of reference costs."

   This guidance meets that commitment.

5. We have been encouraging organisations to implement PLICS for a number of years in order to improve the quality of cost data submitted to the Department. However, the prime reason for organisations to implement PLICS is to get a better understanding of their cost drivers. Good costing information is key to day to day management and to informing decision making that improves the quality and cost effectiveness of services.

6. Improvements to the quality of reference costs will ultimately feed through to improved tariff prices and therefore advances in costing via PLICS are encouraged. The process has improved as organisations have developed their PLICS methodologies and as the use and understanding of PLICS has improved. It is

[1] http://www.dh.gov.uk/health/2012/01/reference-costs-manua/
[2] http://www.dh.gov.uk/health/2012/01/reference-costs-manua/
[3] http://www.hfma.org.uk/costing
[4] http://www.dh.gov.uk/en/Managingyourorganisation/NHScostingmanual/DH_104762

important that PLICS users have a detailed understanding of the reference cost requirements alongside an understanding of how their PLICS has been set up.

7. Due to the many different information and costing systems in use across the NHS it is not possible to offer a prescriptive methodology setting out how PLICS users should use their data to produce reference costs. However, we have attempted to identify key areas for consideration and highlight common adjustments which may need to be made to PLICS outputs in order to produce reference costs.

8. This guidance is not exhaustive and both issues and solutions have been obtained from a small number of organisations. PLICS practitioners should forward any additional issues and local solutions or workarounds to pbrdatacollection@dh.gsi.gov.uk, which we may include in future editions.

Section 2: Compatibility issues

Introduction

9. This section highlights key areas where the principles of reference costs and PLICS differ.

10. The key to producing reference costs using PLICS data is to identify and document:

    (a) different treatment of costs and activity. Organisations may chose to treat some costs and activity differently within their PLICS systems in order to meet internal reporting requirements
    (b) adjustments required to income, expenditure and activity in order to bring reported costs and activity back into line with reference cost reporting requirements.

11. Using PLICS will normally improve data quality and costing information within an organisation. Regular reporting internally on PLICS can highlight and resolve issues more quickly than a once a year exercise will allow. Therefore, using PLICS to support reference costs will produce better quality data throughout the NHS.

12. The principle of reference costs involves establishing a control total from the general ledger and then making a series of cost and activity adjustments as set out in the reference costs guidance.

13. PLICS users should ensure any adjustments are identified and applied within the correct cost pool groups to avoid skewing activity costs. Similar adjustments are necessary for service level reporting (SLR), although this guidance does not cover SLR reporting requirements.

14. Organisations already successfully producing reference costs from their PLICS system report that using a simple checklist setting out all of these adjustments is helpful and ensures a consistent approach year on year (see example template in Annex A). This can be drawn up well in advance of the production of reference costs and can be used in discussions with software suppliers and updated each year. The list will also enable costing professionals and auditors to understand the process and assumptions used in the current and previous years.

15. The rest of this section describes a number of adjustments that may be required in order to produce reference costs.

Non-contractual income

16. Non-contractual income (previously referred to as category C income) is income not directly related to patient care from sources other than contracts with NHS commissioners. Reference costs require this income to be netted off whereas it will be included in most PLICS as gross income. As a result, this income needs to identified and then credited within PLICS. It is also important to ensure the credit is allocated appropriately, eg medical and dental education levy (MADEL) is credited against junior doctor costs.

17. A judgement may be needed in reconciling between the different treatments in PLICS and reference costs. For instance, reference costs are not concerned with whether the netting down produces a surplus or a loss, but PLICS and SLR may calculate whether an individual or service has benefitted financially from the non-contractual income. It is crucially important therefore that the varying approaches are checked and validated.

Exclusions

18. Section 15 of the reference cost guidance contains details about services excluded from reference costs. Organisations should ensure that the list is reviewed each year and highlight services to be excluded. PLICS users should track costs through the system to the correct area and set up within the PLICS model as separate products so costs as well as activity can be excluded. Be aware that the exclusions for reference costs may be different to those used in the production of SLR reports.

19. As with the treatment of non-contractual income it is important to recognise the impact of the varying treatments and to check and validate the approaches. In particular, the reference cost treatment of private patients, which requires a working assumption of no surplus or loss may be particularly challenging in a PLICS context, as it is likely that the calculated costs of a PLICS private patient will be below the figure charged.

Sub-contracted services

20. Ensure that the PLICS identifies the patients that are sub-contracted and does not amalgamate them when producing reference costs. One organisation's approach is to:

    "identify patients within the PLICS system and send them to a separate product to allow recharge and identification for reference costs."

Separating out bed days from inlier bed days and using trim points

21. Using critical care and rehabilitation as an example, this should be done automatically by the grouper. However, as critical care periods and rehabilitation episodes are included within PLICS costs and activity, checks should be done against a sample of patients to ensure that the critical care and rehabilitation activity has been removed from the episode before the excess bed day calculation. Trim points should be applied after all critical care and rehabilitation adjustments have been made.

22. Some PLICS users may be able to show critical care either as part of the patient episode or separately for internal SLR, but should follow reference costs rules for their annual return.

Adjustments to fixed internal corporate trading accounts

23. This is used for SLR reporting. An organisation may use a contribution to overheads approach to allocate costs to a specialty, as the direct and indirect costs are more controllable by the clinical service teams. This is appropriate for internal reporting,

but all costs have to be absorbed into the relevant unit costs for reference costs. Care should be taken to make the correct approach for reference costs.

Adjustments to costing hierarchy

24. The hierarchy within an internal system may differ to the reference cost hierarchy (and output for the reference costs workbook). For example, an internal hierarchy may be directorate or division at the highest level, with drill down to specialty, then point of delivery, then HRG and maybe beyond. Whereas the reference cost workbooks requires point of delivery to be established between day cases, inpatients, regular day and night attenders and outpatients (as per the separate worksheets), disaggregated by treatment function code on the sheets themselves.

25. This may mean, for example, that, when any costs are apportioned top down to a whole specialty in PLICS, the methodology may need amending when the specialty is already split for the relevant worksheets.

Private patients

26. PLICS users may wish to identify the profitability of private patients at a detailed level, to inform pricing and decision making. For reference costs, the activity for private patients should be excluded, with the expenditure and income offset against the service area that provided the activity.

Unbundled HRG activity

27. As a general rule, the requirement to report unbundled services separately in reference costs necessitates adjustments to PLICS. It is essential to consider the general guidance and adjustments needed, which include:

    (a) reviewing each section to consider the data available for each area
    (b) deciding which data source contains the most accurate data quality
    (c) setting up the calculation for reference costs (and PLICS if appropriate) to use that data
    (d) identifying and apportioning appropriate costs to it using appropriate weightings and information from the clinical team. It may be useful to retain the unbundled section in a service line (or sub-service line) of its own, or cost pool, or cost pool group
    (e) document the methodology and assumptions.

28. A solution to separately identify unbundled activity is to set up a service line or specialty within PLICS, which will aid the production of activity data such as critical care, chemotherapy, etc.

Work in progress

29. Whilst identification and associated treatment of work in progress is not a PLICS only consideration, it is important whilst using PLICS that the correct treatment for reference costs regarding work in progress is used. The PLICS will match activity to cost based on an episode end or even part completed episodes, following the accounting matching principle and will create a work in progress report. However, for reference costs, adjustments are required to reflect spells completed in year (bringing

forward activity and costs for prior years), or to exclude incomplete spells from the current financial year. It is important that the associated costs are adjusted and PLICS systems set up to do this. Be aware though that the approach for the production of mental health cluster based reference costs is in line with that used within PLICS rather than the approach outlined above.

Section 3: Workarounds

Introduction

30. The issues and workarounds identified in this section are from feedback from PLICS users and may not be applicable to all organisations. However, they are included as they may be relevant and require action. This list is not exhaustive, and both additional issues and alternative workarounds may exist. Some of the adjustments have been categorised as either cost or activity workarounds.

31. The key message for any manual activity and cost workarounds outside of the PLICS is to ensure that:

    (a) there is no double counting of activity and
    (b) that costs are correctly calculated using full absorption costing principles.

Admitted patients

32. **Issue** – admitted patients are costed at spell level within some PLICS systems, whilst reference costs have historically required an FCE approach.

33. **Possible solution** – ordinary electives and non-electives can be costed at HRG level using the PLICS model. Systems can be set up to cost at FCE level, rather than at spell level which would mean that the stay would not have to be disaggregated to FCE level for reference costs.

34. Similarly, day case activity can be costed at HRG level using a combination of PLICS and patient administration systems (PAS). By setting systems up that can cost at FCE and spell level, this facilitates various methods of reporting to be produced, when income is attached for both PLICS and SLR. By the nature of day cases being single days, there is unlikely to be any spell adjustments, but unbundled areas may present a similar challenge.

Outpatient attendances

35. **Issue** – recording and allocating correct activity outside of PLICS.

36. **Possible solution** - this is an area which may necessitate some manual adjustments, but the necessary action will be dependant upon information data flows. One organisation had the following costing workaround:

    "Cancer multi-disciplinary teams (MDT), allied health professionals (AHP) and obstetric ultrasounds are not costed separately within the PLICS/SLR system. Cancer MDTs are included within the job plans for the consultants. The total costs of each specialist MDT are then identified and repointed into the cancer MDT driver; they are then apportioned to speciality or HRG on a top down basis. AHPs are subcontracted; the value of the contract is apportioned to the activity on a top down basis."

37. The corresponding activity workaround for the same organisation highlights the range of information sources and thinking around data flows which needs to be co-ordinated:

"Cancer MDT, AHP and obstetric ultrasounds require manual interventions to identify the activity for reference costs. CMDT data is obtained from the co-ordinator, which is held locally and in the correct currency. AHP activity is recorded locally as referrals, but is required as attendances and contacts in reference costs. An average multiplier is used to convert the referrals to contacts. All workarounds are manually imported to the system as service totals and are therefore not at patient level."

38. Note that the recording of cancer MDTs will not necessarily be recorded as an outpatient. However, for reference costs, the classification of the activity is as an outpatient, so adjustments to PLICS reporting outputs will need to be made.

39. Issues regarding the treatment of activity within a PLICS may relate to the appropriate use of TFCs, separating out and recording multi-professional attendances, and the inclusion of AHP or technical services such as physiotherapy, orthoptists, orthotics and so forth, and also group sessions rather than individual contact, again for therapists and midwives. A weighting calculation can be used to split costs from either the number of professional or attender numbers.

Emergency medicine

40. **Issue** - the main difficulty with A&E activity is reconciling which patients are admitted or not admitted.

41. **Possible solution** - An additional field/flag to show whether a patient was admitted or not could be added to the PLICS system to aid the collation of activity and costs for reference costs.

Chemotherapy

42. **Issue** – identifying activity and costs for chemotherapy.

43. **Possible solution** - several adjustments may need to take place to produce chemotherapy costs and activity. How easy this is will depend on whether chemotherapy is recorded within your PLICS system. The key element to chemotherapy is to understand how activity and costs across different departments are linked and what manual adjustments need to be made to produce costs for reference cost reporting.

44. Some organisations may record procurement HRGs information via the pharmacy system rather than by regimen, which means that no costs or patient activity levels are recorded at HRG level. The regimens followed could be identified by mapping the drugs used in chemotherapy to the regimen drugs. For example, if the pharmacy system records the issue of Carboplatin, Epirubicin and Vincristine to the same patient on the same day, the regimen will be CEV, but if the drugs are Bleomycin, Cisplatin and Vincristine, the regimen will be BOP.

45. Organisations may need to make adjustments to ensure costs and activity are allocated to the correct service setting and patient, for example, ensuring that for chemotherapy delivery that ward costs are reported under the relevant reference cost workbook sheet. Dependant on the information systems and patient records,

organisations might choose to use a manual check to trace activity to the patient; this could use minutes on the ward and number, type or time of pathology tests.

Critical care

46. **Issue** - This guidance has already discussed the need to extract bed days for critical care from the total admitted patient episode. There may also be difficulty in extracting the activity data when using the grouped data.

47. **Possible solution** - One organisation suggests:

"Firstly users should ensure that the ITU/HDU episode is deducted from the overall length of stay and therefore adjust spell length of stay and ensure excess bed days are not erroneously produced".

48. Organisations may have difficulty in collating the activity data due to the complexity of the HRG currencies and data systems, therefore potential approaches used by providers may include costs not being weighted based on HRG.

49. One NHS provider commented with regard to difficulties with defining activity:

"The grouper only recognises one HRG per patient, the Grouper (PAS information) does not include all patient activity, and the grouper data is used as the basis of the calculation. The activity data from the ward is mapped to the grouped activity data. Additional patient lines are included where there are more than one HRG per patient. Where no HRG has been allocated to the patient, a HRG is mapped according to the average HRG from the ward/number of days. The amended patient level data is re-imported to the system."

50. The impact of contact with outreach teams needs to be unbundled for PLICS, but not for the service cost in reference costs. A solution could be similar to that outlined for specialist palliative care below.

Diagnostic imaging

51. **Issue** – extracting required information to produce reference costs (this is not a PLICS only issue).

52. **Possible solution** – this is one area where activity will need to be extracted from the PLICS system and different approaches may need to be used. Below are some examples which illustrate the different ways in which organisations resolve this issue:

"Reference costs unbundle diagnostic imaging at a different currency (ie HRGs) to the internal PLICS bundled and matched diagnostic imaging (ie modality, examination code, Korners) so cost weightings for both currencies were used but may not be comparable."

53. One organisation reported the following activity workaround:

" we had to exclude outpatient diagnostic imaging from the matching process, we still allocated radiology cost and activity to admitted patient care activity using patient number and dates to match, but outpatient unbundled radiology activity was worked

up manually from the source data of the radiology system. This required interpretation of which scan codes fell into which HRGs, This left no connection between the original patient attendance and the diagnostic imaging".

High cost drugs

54. **Issue** - Extracting and reconciling the information from PLICS and pharmacy systems to produce reference costs.

55. **Possible solution** – this is one area where manual adjustments may need to be made if the pharmacy and other systems are not linked in fully to the PLICS system. Flagging the drugs which are high cost within the system so automatically identified is one option. One trust suggests the following workaround:

    "patient level information is available locally for non–Payment by Results (PbR) drugs in the currency of patient months on treatment. Additional activity information is sought from pharmacy for the high cost drug s that are not PbR exclusions. The activity identified is manually input into the system via a dummy activity line at HRG and point of delivery level, not at a patient level."

56. Another organisation described their planned approach:

    "We should be able to map high cost drugs names to a HRG and remove the drug cost at the end of the costing process from everything except A & E. The issue is with the recording of activity as to whether we use coded information or the pharmacy system."

Radiotherapy

57. **Issue** – identifying activity and costs for radiotherapy

58. **Possible solution** – Utilising data collated for the radiotherapy data set, which is required as a monthly, mandatory submission to the National Cancer Services Analysis Team. This data set is coded directly by the radiographers on the machines delivering treatment and has to be entered correctly to allow treatment to commence.

59. Using this data source ensures the output is accurate and eliminates the need to reconcile local oncology systems with PAS which could, dependant upon local systems use different patient numbering systems and result in additional local manual reconciliations.

Rehabilitation

60. **Issue** – Extracting the rehabilitation days from within the admitted patient spell.

61. **Possible solution** - Where PLICS is not yet established, in areas such as rehabiliation, it may be necessary to use a top down cost apportionment. However, it is important to ensure that elements of overheads are built into this correctly. In addition, manual checks should be made to ensure data is not replicated on rehabilitation attendances as WF prefixed HRGs.

62. Collecting the correct activity is important on areas produced outside of the PLICS system, for example:

"As with ITU and HDU when calculating rehabilitation as a bed day, it is important to ensure that rehabilitation only starts from the date of transfer from acute care."

Specialist palliative care

63. **Issue** - Ensuring the correct costs and activity are extracted from PLICS correctly, potentially using manual approaches to activity.

64. **Possible Solution** – Specialist palliative care costs should be identifiable from PLICS. However, activity information may have to be calculated. For example, activity may be provided by the specialist palliative care team including number of minutes multiplied by weighting of time spent on bereavement, which would then allow accurate costing.

65. Often the key to collecting the correct activity is liaising with the palliative team or specialist nurse who will have the information and knowledge to identify activity correctly. There will also be a crossover with the recording of MDTs, as palliative care team members will be an integral part of the MDT.

Direct access pathology services

66. **Issue** – Extracting the split in activity as defined within reference costs

67. **Possible Solution** - Additional information may be needed to facilitate costing within the PLICS in some organisations. Contact with the service may be needed to obtain activity information. Checks on the PLICS as to whether the model splits out a proportion of costs for each pathology discipline based on the volume of work that is direct access compared to trust work is key to accurately costing the different activity.

Community visits and midwifery

68. **Issue** – reconciling information flows to produce data.

69. **Possible solution** - not all PLICS organisations will have information flows linked to the PLICS, or in some organisations, only part of the community data may be available in PLICS. If patient level data is not available, (whether in a PLICS or not), normal reference costs rules will apply. One organisation reported

"Costs from the community birthing centre are discrete and apportioned on a top down basis in lieu of PLICS information".

70. Identifying and linking activity data in this area may also require manual adjustments, in particular where activity is completed and compiled by other organisations. The same organisation reported that:

"There was a need to split out the community element of the activity as the activity is provided by community sources regarding the number of community visits made from antenatal and postnatal visits. The activity is added to the system as a total for the service not at the patient level".

"It may also be necessary to treat the community midwifery element in a similar fashion to AHPs in the example above, using an average multiplier for ante and post natal visits per birth in order to allocate costs. There may be an activity adjustment needed for ante natal visits for babies born at other units. It may be possible to use planned community clinic numbers as an indicator."

71. An updated workaround detailed by one of the organisations mentioned above to correctly identify community midwifery activity is detailed as follows:

"we have had the time to explore where and when sessions are planned for; which midwives will be at which GP surgeries, on what dates and used a sample of attendances at those services. To this we added a weighting for the higher risk pregnancies such as hypertension, obesity etc, resulting in more accurate patient costs".

72. The longer term objective should be to collect more community (and other) information at patient level, both for internal reporting, reference costs, and indeed to improve the quality of clinical information held.

Annex A: Template for recording cost and activity workarounds

Worksheet name	Worksheet description	Workaround
ELNEL	Ordinary electives	UZ episodes are allocated to an HRG based on either the diagnosis, the intervention, or the majority of the consultants practice. No UZ codes are recorded in reference costs.
DC	Day cases	
RDNA	Regular day or night admissions	
DCARE	Daycare facilities regular attendances	
OPATT	Outpatient attendances	
OPPROC	Outpatient procedures	
AE	Emergency medicine	
CHEMP	Chemotherapy procurement	
CHEMD	Chemotherapy delivery	
CHEMDAY	Same day chemotherapy admission or attendance	
ACC	Adult critical care	
ACCOUT	Adult critical care outreach	
PNCC	Paediatric and neonatal critical care	
CCT	Paediatric critical care transportation	
DIAGIM	Diagnostic imaging	We use the radiology system as the basis for weighting cost. Each image has a “cost” on the radiology system. This is used as the basis for recharging for all Imaging activity regardless of whether it is unbundled or not, and whether it is direct access or not. This ensures that reference costs are produced on a consistent basis, but does mean that there is no internal benefit to our services of any private patient/GPDA making a surplus, ie costs are set at a level base for all elements. If possible, assess whether the image types vary, and how this will affect episode/spell costs if applied more generically.
HCDAPC	High cost drugs in admitted patient care setting	
HCDOP	High cost drugs in outpatient and other settings	
RADO	Radiotherapy planning in ordinary admission	
RADP	Radiotherapy planning	Utilise national benchmarks on planning courses per treatment as a comparator and adjust planning courses to exclude double counting.
RADT	Radiotherapy treatment	
RADDAY	Same day external beam radiotherapy admission or attendance	
REHABA	Rehabilitation assessment	
REHABD	Rehabilitation delivery	
SPCAPC	Specialist palliative care admitted patients	
SPCOP	Specialist palliative care outpatients and other	
RENAL	Renal dialysis	
DAD	Direct access diagnostic services and plain film x-ray	
DAP	Direct access pathology services	The adjustment made in DIAGIM also applies to pathology.

Worksheet name	Worksheet description	Workaround
		Have to ensure that adjustments are made in the correct denomination.
MHCC	Mental health care clusters	
MHOBD	Mental health occupied bed days	
MHDAY	Mental health day care facilities	
MHOPATT	Mental health consultant-led outpatient attendances	
MHCOMM	Mental health consultant-led community services and community mental health teams	
MHST	Mental health specialist teams	
COMMSPEC	Community specialist nursing services	
COMMNURS	Community nursing services	
COMMTHPY	Community therapy services	
COMMREHB	Community rehabilitation teams	
COMMVAC	Vaccinations and immunisations	
COMMBABY	Community ante and post natal visits	
COMMATT	Community services attendances	
COMMMID	Community midwifery home births	Assume a multiplier for visits in line with compliant NICE guidance. Minimum is 6 ante natal and 2 post natal visits per birth.
HAH	Hospital at home and early discharge schemes	
AMBCALL	Ambulance services: calls	
AMBHEAR	Ambulance services: hear	
AMBSEE	Ambulance services: see	
CYSTIC	Cystic fibrosis	
AUDIOAIDS	Audiology services: hearing aids	
AUDIOFITT	Audiology services: fitting	
AUDIOREP	Audiology services: repairs	
AUDIOSCRN	Audiology services: neonatal screening	