NHS

Approved Costing Guidance – Standards

Integrated information requirements

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NHS England and NHS Improvement

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IR1: Collecting information for costing

Purpose: To set out the minimum information requirements for patient-level costing.

Objectives

1. To ensure providers collect the same information for costing, comparison with their peers and cost collection purposes.

2. To help allocate the correct quantum of cost to the correct activity using the prescribed cost allocation method.

3. To support accurate matching of costed activities to the correct patient episode, attendance or contact.

4. To support local reporting of cost information by activity in the organisation's dashboards for business intelligence.

Scope

5. This standard specifies the minimum requirement for the patient-level[1] activity feeds as prescribed in the *Approved Costing Guidance*.

What you need to implement this standard

- Costing principle 5: Good costing should focus on materiality[2]

[1] Not all feeds are at the patient level. This is a generic description for the collection of feeds required for the costing process. The actual level of the information is specified in the detail below: for example, the pathology feed is at test level.

[2] See *The costing principles*, https://improvement.nhs.uk/resources/approved-costing-2019/

- Information gap analysis template (IGAT) or corresponding template in the costing assessment tool (CAT)
- Table IR1.1: Patient-level activity feeds required for costing
- Technical document:
  - Spreadsheet IR1.2: Patient-level field requirements for costing
  - Spreadsheet IR1.3: Supporting contacts feed
  - Appendix 1: Data sources available as part of the national collection

Overview

6. The standards describe two main information sources for costing:
   - patient-level feeds
   - relative weight values.

7. Any costs not covered in the prescribed patient-level feeds need relative weight values or other local information sources to allocate them.

8. You may be using additional sources of information for costing. If so, continue to use these and document it in your integrated costing assurance log (ICAL) worksheet 2: Additional information source.

9. The information feeds described in the standards provide the following information:
   - activities that have occurred, eg the non-admitted patient care (NAPC) feed will itemise all contacts made; this information tells the costing system which activities to include in the costing process
   - the cost driver to use to allocate costs, eg ward minutes
   - the information to use to weight costs, eg the medicine cost included in the medicines dispensed feed
   - information about the clinical care pathway, eg procedure codes that are used to allocate specific costs in the costing process.

10. Integrated providers should identify the services they provide for different sectors and build feeds to include all these sectors – see Standard CM11: Integrated providers.

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11. We recognise that you may not be able to identify the cost of care for some patients because of how the care is provided or due to information governance controls. In such instances, you should cost '**a patient**' and not '**the patient**' to ensure that other patient costs are not overstated. This applies, for example, to patients accessing services with sensitive and legally restricted data.

12. Table IR1.1[3] lists the patient-level activity feeds required for costing. You only need to bring in the feeds that relate to the services your organisation provides.

13. You should use national definitions of activity from the data sources available as part of the national collection. A list, including the national datasets, is given in Appendix 1.[4] If you use local definitions for activity that are not included in the national datasets, or during transition, you should record these in ICAL worksheet 3: Local activity definitions.

14. Three types of feed support the matching process:
    - **master feeds:** the core patient-level activity feeds that the other feeds are matched to, eg the admitted patient care (APC), non-admitted patient care (NAPC), critical care and A&E feeds[5]
    - **auxiliary feeds:** the patient-level activity feeds that are matched to the master feeds, eg the diagnostic imaging and pathology feeds
    - **standalone feeds:** the patient-level activity feeds that are not matched to any episode of care but are reported at service-line level in the organisation's reporting process, eg the clinical multidisciplinary team (MDT) meeting feed.

    The individual feeds are classified in Table IR1.1 below.

15. A unique identifier – or combination of fields – in the master and auxiliary feeds is used to perform the matching process. For example, 'local patient identifier (extended)' is the unique patient reference in the Community Services Data Set (CSDS). See Standard CP4: Matching costed activities to

[3] Please note this table was formerly included as Spreadsheet IR1.1 in the technical document.
[4] This list is not exhaustive and other national datasets are available.
[5] Although critical care is an auxiliary feed, other auxiliary feeds such as pathology can be matched to it. This improves the quality of the costing of critical care stays.

patients. The prescribed matching rules for the patient-level feeds are in Spreadsheet CP4.1.

16. Note that because the matching hierarchy is not sector specific, integrated providers can have a single set of matching rules. This means that while the hierarchy levels in Spreadsheet CP4.1 do not form a continuous sequence, they should be completed in order, starting with the lowest number. For example, the medicines feed starts at level 7 and includes levels 8, 9, 10, 16, 17 and 18.

17. You should work with your informatics department to understand the different types of activity captured and reported against each data feed. This will help ensure you allocate the correct costs in appropriate proportions, and that activity is reported correctly in your patient-level reporting dashboard.

18. Columns D and E in Spreadsheet IR1.2 contain the activity data fields required for the costing standards, following national naming conventions for the CSDS and other datasets.

19. If your organisation provides mental health or community services, you need to appreciate whether its Mental Health Services Data Set (MHSDS) submission or CSDS submission contains special characters, for onward linkage by NHS Digital after collection. You should ensure that the feeds into PLICS for these datasets match the submission to the national dataset.[6]

20. You are not required to collect an activity feed if your organisation does not provide that activity, eg a provider with no emergency department is not required to collect the A&E attendances feed.

21. You are not required to collect duplicate information in the individual feeds unless this is needed for costing, matching or collection purposes. The reason each field is included in a feed is given in columns K to N in Spreadsheet IR1.2.

22. To build the relevant patient-level information costing system (PLICS) feed, you may need to discuss the matching of some local field names with your

[6] If the PLICS feeds do not match to the national data submission, the national cost collection submission will be compromised, as its matching to the national dataset will not be allowed.

service teams or informatics department, using the data item code shown in column G of Spreadsheet IR1.2 (where applicable to the dataset).

23. The standards prescribe the information to be collected, but not how it is collected. So, if you collect several of the specified feeds in one data source, you should continue to do so as long as the information required is captured.

24. The prescribed matching rules for all the patient-level feeds are given in Spreadsheet CP4.1.

25. If you have activity in your data feeds where the costs are reported in another provider's accounts, you need to report this activity under 'cost and activity reconciliation items' as described in Table CP5.2 in Standard CP5: Reconciliation. This is so your own patient costs are not allocated to this activity, deflating the cost of your own patients.

26. For internal reporting, this activity can be reported as part of patient pathways, even though the cost to the organisation is zero – for example, social workers paid by the local authority whose activity is part of a wider care pathway.

Integrated information requirements

Table IR1.1: Patient-level information feeds

Feed number	Feed letter	Feed name	Feed scope	Type of feed
1	a	Admitted patient care (APC)	All admitted patient episodes within the costing period, including all patients discharged in the costing period and patients still in bed at midnight on the last day of the costing period (mainly from the Commissioning Data Set)	Master
1	b	Admitted patient care (APC) (mental health)	All admitted patient episodes within the costing period, including all patients discharged in the costing period and patients still in bed at midnight on the last day of the costing period	Master
2		Urgent care (A&E/MIU)	Accident and emergency attendances (A&E) – minor injury unit and urgent care within the costing period	Master
3	a	Non-admitted patient care (NAPC) Outpatients (acute/community)	All patients who had an attendance or contact within the costing period	Master
3	b	Non-admitted patient care (NAPC) (mental health)	All patients who had an attendance or contact within the costing period	Master
3	c	Non-admitted patient care (NAPC) (community)	All patients who had an attendance or contact within the costing period (mainly from Community Services Data Set)	Master

Integrated information requirements

Feed number	Feed letter	Feed name	Feed scope	Type of feed
4 Optional		Ward stay	All patients admitted within the costing period, both those discharged and patients still in bed at midnight on the last day of the costing period	Auxiliary
5 Optional		Non-admitted patient care – did not attend (DNA)	All patients who did not attend or, in the case of children, were not brought to their outpatient appointment within the costing period	Standalone
6	a	Acute critical care – neonatal	All patients who had a critical care stay within the costing period	Master
6	b	Acute critical care – paediatric	All patients who had a critical care stay within the costing period	Master
6	c	Acute critical care – adult	All patients who had a critical care stay within the costing period	Master
6	d	Acute critical care – transport	All patients conveyed by critical care transport	Master
7		Supporting contacts	All patients who had contacts from anyone other than the principal healthcare professional within the costing period	Auxiliary (superior method)
8		Pathology	All types of pathology tests undertaken by the organisation within the costing period	Auxiliary
9		Blood service products	Units of all blood and blood products used in blood transfusions within the costing period	Auxiliary

Integrated information requirements

Feed number	Feed letter	Feed name	Feed scope	Type of feed
10		Medicines dispensed	Within the costing period, all medicines dispensed to a ward and non-attributable to individual patients and/or medicines attributable to individual patients (likely to include controlled drugs, medicine gases and discharge items)	Auxiliary
11 Optional		Clinical photography	All clinical photography performed within the costing period	Auxiliary
12		Diagnostic imaging	All diagnostic imaging performed within the costing period	Auxiliary
13		Theatres/ specialist procedure suites	All procedures performed in theatres and specialist procedure suites within the costing period	Auxiliary
14		Clinical multidisciplinary team (MDT) meetings	All clinical MDT meetings held within the costing period	Standalone
15		Prostheses and high-cost devices	All prostheses or devices provided to patients within the costing period	Auxiliary
16		Improving Access to Psychological Therapies Data Set	All patients undergoing psychological therapies	
17		Sexual health	Patient-level – but anonymised – feed for those accessing sexual health services, where these contacts are not recorded on the NAPC feeds	Master

Integrated information requirements

Feed number	Feed letter	Feed name	Feed scope	Type of feed
18		Dentistry	Patient-level feed for dentistry where this information is not contained within the NAPC feeds	Master
19	a	Wheelchair contacts	The contacts with patients for assessment, fitting, review and repair/ maintenance of wheelchairs and components	Master
19	b	Wheelchair equipment	The items issued to the patient, with the value of those items	Master
25		Unbundled Healthcare Resource Group (HRGs) – rehabilitation and specialist palliative care	All unbundled HRGs created by the grouper for sub-chapters VC and SD	Auxiliary
26		Audiology contacts	The non-consultant led contacts with patients for assessment, fitting, review and repair/maintenance of audiology devices and other audiology services	Master

Approach

Patient-level information for the costing process

27. This section describes each information feed, explaining the:
    - relevant costing standard(s)
    - data collection source
    - feed scope.

28. The patient-level information feeds are shown in Table IR1.1 above. You should read the following sections describing these feeds in conjunction with Spreadsheet IR1.2.

Feed 1a and 1b: Admitted patient care (APC)

Relevant costing standard

- Acute or Mental health standard CM1: Medical staffing
- Standard CM2: Incomplete patient events
- Mental health or Community standard CM13: Admitted patient care
- Spreadsheet IR1.2: Patient-level field requirements for costing
- Appendix 1: Data sources available as part of the national collection

Collection source

29. This data will come from the nationally collected and mandated APC Commissioning Data Set (CDS) or MHSDS.

30. The suffix ‘a’ indicates this information comes from the CDS whereas the suffix ‘b’ indicates it comes from the MHSDS. This notation is for clarity where trusts cover more than one sector.

31. The APC feed is shown in column C of Spreadsheet IR1.2. The fields shown in column D should be contained in the APC feed.

32. Column G in Spreadsheet IR1.2 shows a MHSDS unique identifier code in feed 1b. There is no corresponding ID in the acute/community CDS for feed 1a, so the field names in column D should be used as the specific identifier.

33. You should take the data from the same source as the national submission of the CDS – before it is sent. This will allow reconciliation of your internal reporting to the dataset.

Feed scope

34. All admitted patient episodes within the costing period, including all patients discharged in the costing period and patients still in bed at midnight on the last day of the costing period. This includes regular day or night attenders.

35. Use the patient discharged flag in column D in Spreadsheet IR1.2 to identify if a patient has been discharged or not.

36. Including patients who have not been discharged reduces the amount of unmatched activity and ensures that discharged patients are not allocated costs that relate to patients who have yet to be discharged.

37. We recognise that some patient-level information, such as clinical coding, may not be available until after a patient is discharged. However, information regarding ward stays and named healthcare professionals will be available and can be used in the costing process.

38. The APC feed is a master feed that auxiliary feeds such as theatres and pathology, which contain all the patient-level activity that has taken place, can be matched to.

39. Some patients may return home for planned or trial periods while still admitted to an inpatient bed. In acute settings this may be a 'hospital at home' arrangement for step down care, and in mental health settings this may be designed to ensure a bed is reserved for their care. The APC dataset feeds include this home leave to reflect the organisation's continuing responsibility for the patient.

40. For acute patients, the resources used in providing the clinical services at home should be allocated to the patient.

41. For patients with mental ill health, far fewer resources are used during home leave, so this time is not costed. Resources/activities should be applied to

patients according to their length of stay net of home leave days. See Mental health or Community standard CM13: Admitted patient care.

42. Costing calculations for mental healthcare should exclude periods of home leave and be based on time on the ward, using the following fields (in accordance with Spreadsheet IR1.2):
    - start date (home leave)
    - start time (home leave)
    - end date (home leave)
    - end time (home leave).

43. By including these mental healthcare home leave fields in the APC feed, home leave can be reported in local reporting dashboards.

44. The patient's administrative category code in column D in Spreadsheet IR1.2 may change during an episode or spell. For example, the patient may opt to change from NHS to private healthcare. In this case, the start and end dates for each new administrative category period should be recorded in the start and end date fields respectively in column D in Spreadsheet IR1.2. This will mean all activity for private patients, overseas visitors, non-NHS patients and patients funded by the Ministry of Defence can be correctly identified and costed accurately.

45. Where a patient with mental ill health has a care programme approach (CPA) meeting during an admission, the date of this will be included in the field 'care programme approach review date'. This will be used to identify a 'contact' with the patient; see Acute or Mental health standard CM9: Multidisciplinary team meetings and Acute, Mental health or Community standard CM3: Non-admitted patient care.

46. The 'primary procedure (OPCS)' field is available for an admitted patient undergoing a medical/physical intervention during their admission. As mental health trusts may not always require this field, the separate field (in the APC mental health feed (feed 1b)) 'coded procedure and procedure status (SNOMED CT)' will include a code that identifies the procedure, eg electroconvulsive therapy (ECT). The use of SNOMED CT will be mandatory in all health sectors from 2020.

Feed 2: Urgent care (A&E/MIU)

Relevant costing standards

- Acute standard CM4: Emergency department attendances (including A&E, minor injury units and walk-in centres)
- Standard CM2: Incomplete patient events
- Appendix 1: Data sources available as part of the national collection

Collection source

47. The data for A&E, minor injury unit (MIU) and walk-in centre attendances will come from the nationally collected A&E CDS.[7]

48. The data for walk-in centres and other unplanned care centre attendances may need to be collected locally where it is not included in the A&E CDS.

Feed scope

49. All A&E and MIU attendances within the costing period, including all patients discharged in the costing period and patients still in the department at midnight on the last day of the costing period.

50. The A&E feed is a master feed that auxiliary feeds such as pathology, which contain all the patient-level activity that has taken place, can be matched to.

51. Use the patient discharged flag in column D in Spreadsheet IR1.2 to identify if a patient has been discharged or not.

Feeds 3a, 3b and 3c: Non-admitted patient care (patient contacts from CDS, MHSDS and CSDS)

Relevant costing standard

- Acute or Mental health standard CM1: Medical staffing
- Acute, Mental health or Community standard CM3: Non-admitted patient care

[7] Where the organisation collects the new Emergency Care Data Set (ECDS), this can be used as an alternative, although the costing standards have not yet brought this dataset into the technical document. You should match the ECDS fields required to those listed in Spreadsheet IR1.2.

- Standard CM14: Group sessions
- Spreadsheet 1R1.1: Patient-level activity feeds required for costing
- Appendix 1: Data sources available as part of the national collection

Collection source

52. This data may come from three different datasets and should relate to how your data is submitted in the national data weekly/monthly submissions.

    - If your trust submits clinic outpatient appointments (OPA) to the nationally collected Commissioning Data Set (CDS), these will come into the PLICS on **feed 3a**.
    - If your trust submits mental healthcare contacts to the nationally collected MHSDS, these will come into the PLICS on **feed 3b**.
    - If your trust submits community care contacts to the nationally collected CSDS, these will come into the PLICS on **feed 3c**.

53. You should take the data from the same source as the national submission of the CDS, MHSDS or CSDS for feeds 3a, 3b and 3c respectively – before it is sent. This will allow reconciliation to your internal and external reporting of the dataset.[8] This separate information detail is required for the different types of reporting later in the process.

Feed scope

54. All patients who had an attendance, contact or non-admitted patient care in a non-admitted care setting within the costing period.

55. This feed is designed to be a 'catch all' activity feed. It captures activity recorded on the patient administration system (PAS) but not reported in the other master feeds, including the following activities:

    - outpatient attendances and procedures – formal booked 'clinic' contacts and drop-in sessions
    - non-admitted patient contacts, both in one-to-one and group contacts
    - other face-to-face contacts, including those in the patient's own residence

[8] Please see the National Cost Collection Guidance for information on how these feeds will be submitted

- telemedicine consultation, including telephone calls and other telemedicine contacts such as text, email, video conference, online patient model, etc
- ward attenders (outpatient attendances where the patient does not need a full admission to an inpatient unit but is seen in a ward environment)
- day care (patients attending for general supportive activities throughout a day, sometimes – but not necessarily – including clinical therapy); they are not admitted, but are present for a far longer time than a standard NAPC contact
- individuals who are well but having contacts with the clinical services – for example, for health promotion, preventive medicine and education
- did not attend (DNA).

56. The NAPC feeds (feeds 3a, 3b and 3c) should not include the following areas, which have different field requirements, and separate feeds:
    - Improving Access to Psychological Therapies – feed 16
    - sexual health anonymised contacts – feed 17
    - dentistry – feed 18
    - wheelchair service – feed 19
    - audiology – feed 26.

57. Work with your informatics department and other departments providing data to understand the different types of activity in these NAPC feeds and ensure costs are allocated correctly to activity, and that activity is reported correctly in your patient-level reporting process.

58. The NAPC feeds use the field 'consultation medium used' to indicate whether a contact was face to face or using telemedicine (including telephone calls, video conference, text, email or online patient model). Use this to identify and apply the appropriate costs to the type of contact.

59. The NAPC feeds are master feeds that auxiliary feeds such as pathology, which contain all the patient-level activity that has taken place, can be matched to.

60. We recognise that not all NAPC activity is captured in the PAS. You need to work with your informatics department and the department responsible for the data to get the relevant activity information.

Feed 4: Ward stay

Relevant costing standards

- Standard CM2: Incomplete patient events
- Standard CP3: Allocating costs to activities
- Spreadsheet CP3.8: Ward round data specification
- Appendix 1: Data sources available as part of the national collection

Collection source

61. This data may come from the nationally collected CDS or a local source. It will largely be relevant to acute and community providers as the required data may not be within the APC feed (feed 1a). (For mental health services, wards data is within the MHSDS and so the APC mental health feed (feed 1b) is likely to include sufficient information.)

62. If you have the required data within your main APC feed, this feed is optional.

Feed scope

63. All patients admitted within the costing period, both those discharged and those still in a bed at midnight on the last day of the costing period. This includes but is not limited to patients on:
    - general wards
    - A&E observation wards
    - rehabilitation wards
    - clinical decisions wards
    - minor injuries units.

64. Use the patient discharged flag in column D in Spreadsheet IR1.2 to identify if a patient has been discharged or not.

65. Although this feed contains more detailed information than the APC feed, the two should match 100%.

66. The ward stay feed captures the costs known to be incurred by those patients who have not been discharged, allowing you to allocate the ward costs and ward round costs of the named healthcare professional.

67. Most providers produce the ward stay feed from their PAS, which means it will contain the episode ID and this should be used as the default matching criterion. If it does not, you need to use the prescribed matching rules in Spreadsheet CP4.1 for the ward stay feed.

68. As you will collect critical care patient-level information in a separate feed, you need to exclude the critical care ward stay information from the WS feed to avoid costing critical care twice.

Feed 5: Non-admitted patient care – Did not attend (DNA); optional

Relevant costing standard

- Acute, Mental health or Community standard CM3: Non-admitted patient care
- Appendix 1: Data sources available as part of the national collection

Collection source

69. This data may come from the nationally collected Outpatient CDS.[9]

Feed scope

70. All patients who did not attend or, in the case of children or vulnerable adults, were not brought to their outpatient appointment within the costing period.

71. This feed is for guidance and should be used only if you are costing ‘did not attends’ for local business intelligence.

72. This standalone feed is **not** matched to patient episodes, attendances or contacts.

[9] Mental health DNA data may come from the MHSDS and Community DNA data may come from the CSDS.

73. This feed is optional as some providers will receive ward information within their APC feed and do not require a separate information stream.

Feeds 6a, 6b, 6c: Acute critical care – neonatal, paediatric and adult

Relevant costing standard

- Standard CM6: Critical care
- Appendix 1: Data sources available as part of the national collection

Collection source

74. This data should come from the nationally collected:
    - Neonatal Critical Care Minimum Data Set (NCCMDS)
    - Paediatric Critical Care Minimum Data Set (PCCMDS)
    - Critical Care Minimum Data Set (CCMDS) (adult).

75. We know that some providers open a new episode of care when a patient is transferred to a critical care unit, whereas others do not. We do not advocate one approach over the other. You should therefore understand whether your organisation holds the critical care data:
    - as a discrete episode with a transfer of care to a consultant intensivist (anaesthetist) or
    - the patient episode will continue under the surgical or medical consultant and another data source (such as the type of ward) will identify the critical care.

76. Your PLICS software will create an identifiable record for critical care, separate from the APC. There are various ways it can do this, including:
    - using the separate episode from your APC feed (feed 1a) as the critical care record or
    - creating a separate critical care period record[10] where there is no separate APC episode. This record can be created using:

[10] For reference, this was called a 'dummy record' in previous versions of this standard.

- the critical care feed (feed 6) as it will show the dates the patient had a critical care period according to CCMDS (recommended option) or
- use the ward stay feed (feed 4) to identify the change to the relevant critical care unit. Please note this option may require additional attention where dates on the ward stay feed do not match to the critical care feed (feed 6), as this may cause problems with matching (eg to the CCMDS during the national cost collection).

77. Whichever approach your software supplier uses, you need to ensure there is a critical care record to keep these cost separate from the APC data record. You should consult your software supplier for more information on how the PLICS uses your organisation's data for critical care.

Feed scope

78. All patients who had a critical care stay within the costing period, including patients still in a critical care at midnight on the last day of the costing period, that are recorded on the national datasets noted above.

79. This includes but is not limited to patients[11] on:
    - intensive care units
    - specialist care units
    - high dependency units
    - general wards, with a CCMDS record (see Standard CM6: Critical care, for more information).

80. Where costing processes require your APC length of stay to be adjusted to distinguish the time spent on critical care, you should use the prescribed matching rules on Spreadsheet CP4.1 to identify the appropriate dates/times and create the net length of stay.

81. Spreadsheet CP4.1 also includes matching rules for the ward stay feed (feed 4) if you are using that method to identify the critical care days.

[11] Most critical care patients are in acute or integrated trusts, but they can be in other trust types. The defining factor for their inclusion in the feeds to PLICS is that they have a CCMDS record.

Feeds 6d: Critical care transport

Relevant costing standard

- Standard CM6: Critical care

Collection source

82. This data needs to be collected locally.

Feed scope

83. All patients who are conveyed by critical care transport.

84. Spreadsheet CP4.1 contains the prescribed matching rules for this feed.

Feed 7: Supporting contacts

85. Inclusion and use of this feed is optional. As the detail and accuracy of the final patient cost are improved by including these activities in the costing process, it is now a superior costing method.[12]

Collection source

86. This data needs to be collected locally.

Feed scope

87. All patients who had contacts from anyone other than the healthcare professional named[13] on the master record within the costing period. The costing process will match supporting contacts to any relevant master feed event.

88. A patient often receives multiprofessional services during their admission episode, outpatient or A&E attendance or community care contact. The supporting contacts feed (feed 7) is designed to reflect the multiprofessional

[12] In response to feedback about the burden on clinicians of having to start collecting this information, we now consider this feed to be a superior method. We will keep this decision under review.

[13] CDS, MHSDS, CSDS and CCMDS records (all ages) all have a named clinical professional for the activity unit.

nature of the patient's pathway and costs associated with it – for example, physiotherapists working with burns patients on a ward.

89. There is no national source data for this feed:

- where data is already available from the service, there may be multiple sources for the different types of supporting contact activities. For example, physiotherapy supporting contacts will be on a different feed from the critical care outreach team contacts. They should all be brought into a single feed using the feed structure in Spreadsheet IR1.2
- where no electronic data is available, you should consider the materiality of the cost allocation. If you consider it to be material, work with the service to record the necessary supporting contacts.

90. An admitted patient can be expected to have contact with their named care professional during their admission as part of standard ward rounds and ward care. These do not need to be included on the supporting contact feed (feed 7), although this information can be added if it enhances the detail available to the costed record – for example, where a consultant's medical ward round data is available at patient level.

91. Examples of healthcare professionals who may provide supporting contacts as part of a multidisciplinary care pathway are listed in Table IR1.2 below. For a full list, see spreadsheet CP3.3.

Table IR1.2: Examples of healthcare professionals who perform supporting contacts

Advanced nurse practitioner	Consultant
Art therapist	Dietitian
Audiologist	Non-consultant medical staff
Chiropodist	Occupational therapist
Psychologist	Physiotherapist
Community nurse	Speech and language therapist

92. Spreadsheet CP4.1 contains the prescribed matching rules for this feed.

Feed 8: Pathology

Relevant costing standard

- Standard CP4: Matching costed activities to patients
- Standard CP3: Allocating costs to activities

Collection source

93. This data needs to be collected locally.

Feed scope

94. All types of pathology tests undertaken by the organisation within the costing period.

95. Direct access tests should be identifiable from the 'direct access flag' field, as shown in Column D of Spreadsheet IR1.2.

96. Spreadsheet CP4.1 contains the prescribed matching rules for this feed.

Feed 9: Blood service products

Collection source

97. This data needs to be collected locally.

Feed scope

98. Units of blood and blood components used in transfusion (red cells, white cells, platelets, plasma and other blood products).

99. Spreadsheet CP4.1 contains the prescribed matching rules for this feed.

Feed 10: Medicines dispensed

Relevant costing standards

- Standard CM10: Pharmacy, medicines and blood services
- Standard CP4: Matching costed activities to patients

- Appendix 1: Data sources available as part of the national collection

Collection source

100. This data needs to be collected locally and supplemented by the mandated drugs patient-level monitoring (DrPLCM) specification for NHS England's specialised commissioning on high-cost drugs.[14] The latter cover approximately 70% of high-cost medicines nationally, which may be extended by including locally commissioned high-cost medicines.

Feed scope

101. All medicines dispensed in all provider locations including wards, clinics, theatre preoperative assessments, and medicines issued in the patient's residence. This includes both medicines attributable to individual patients (likely to include high-cost drugs, controlled medicines, medicine gases and discharge items) and non-attributable to individual patients (eg ward stock) within the costing period.

102. All medicines dispensed during an APC, NAPC, critical care or A&E attendance, or a community contact.

103. FP10s are out of scope of the medicines dispensed feed. You may include an FP10 feed at patient level as a superior method if this information is available.

104. Spreadsheet CP4.1 contains the prescribed matching rules for this feed.

Feed 11: Clinical photography

105. Inclusion and use of this feed is optional.

Collection source

106. This data needs to be collected locally.

Feed scope

107. All clinical photography performed within the costing period.

[14] https://www.england.nhs.uk/nhs-standard-contract/dc-reporting/

108. Clinical photography services can be used to chart a patient's progress during treatment, eg for cleft palate, and to document evidence in the case of suspected non-accidental injury to a child. They may also provide non-clinical medical illustration services for providers and external parties.

109. This feed is a good example of how the different types of services provided by one department need to be treated differently in the costing process. Follow Figure IR1.1 when applying costs for departments that provide different types of services.

110. Spreadsheet CP4.1 contains the prescribed matching rules for this feed.

Feed 12: Diagnostic imaging and other diagnostic services

Relevant costing standard

- Standard CP4: Matching costed activities to patients
- Appendix 1: Data sources available as part of the national collection

Collection source

111. This data needs to be collected locally.

112. The requirement is for the feed to include radiology (diagnostic imaging) but PLICS should also contain information for other diagnostic services, including nuclear medicine, cardiac, clinical and respiratory physiology, and ophthalmic imaging. As these services often have service-specific data recording systems, the multiple sources should be brought into PLICS to ensure a complete patient diagnostic record is costed.

Feed scope

113. All diagnostic imaging performed within the costing period.

114. Direct access tests should be identifiable from the 'direct access flag' field as shown in Column D of Spreadsheet IR1.2.

115. Spreadsheet CP4.1 contains the prescribed matching rules for this feed.

Feed 13: Theatres and specialist procedures suites

Relevant costing standard

- Standard CP4: Matching costed activities to patients
- Standard CM5: Theatres and special procedure suites

Collection source

116. This data needs to be collected locally.

Feed scope

117. All procedures performed in theatres and specialist procedure suites within the costing period.

118. This feed should be at operation level,

119. This feed should also include session information.

120. Spreadsheet CP4.1 contains the prescribed matching rules for this feed.

Feed 14: Clinical multidisciplinary team (MDT) meetings

Relevant costing standard

- Acute or mental health standard CM9: Clinical MDT meetings
- Appendix 1: Data sources available as part of the national collection

Collection source

121. This data needs to be collected locally.

Feed scope

122. All clinical MDT meetings held within the costing period.

123. This feed does not have to be at patient level as the costs for MDTs are reported at specialty level rather than patient level.

124. This standalone feed is **not** matched to patient episodes, attendances or contacts.

Feed 15: Prostheses and other high-cost devices

Relevant costing standards

- Standard CM21: Clinical non-pay items
- Standard CP4: Matching costed activities to patients
- Standard CM5: Theatres and special procedure suites
- Acute standard CA2: Cochlear implant surgery
- Acute standard CA6: Cataract procedures
- Acute standard CA7: Orthopaedics
- Spreadsheet CP2.3: Expected costs
- Appendix 1: Data sources available as part of the national collection

Collection source

125. This data needs to be collected locally.

126. High-cost devices as identified on the national tariff payment system list 13a in Annex A: the national tariff workbook[15] should be included in this feed. Commissioning data will be available for these items.

127. A wider range of devices may be recorded in inventory management systems that track clinical non-pay items to the patient. Using this source of information if available for material non-pay items is a superior method.

128. If an inventory management system is not available, national programmes such as Scan4Safety or the National Joint Registry are useful sources of patient-level information for prostheses, devices and implants.

Feed scope

129. All prostheses, devices, implants and clinical non-pay items with a material cost provided to patients within the costing period.

[15] https://improvement.nhs.uk/resources/national-tariff/#h2-annexes

130. This is an organisation-wide feed to cover clinical non-pay items with a material cost, not just those used in theatres.

131. Spreadsheet CP4.1 contains the prescribed matching rules for this feed.

Feed 16: Improving Access to Psychological Therapies (IAPT)[16]

Relevant costing standard

- Mental health standard CM3: Non-admitted patient care
- Appendix 1: Data sources available as part of the national collection

Collection source

132. This data needs to be collected locally from the PAS or separate clinical information system, in accordance with the submission of IAPT data. Your informatics team should be able to supply this dataset.

Feed scope

133. This feed should contain the non-admitted contacts for IAPT services that are not recorded in the MHSDS dataset.

134. As the fields available in IAPT are not the same as those in the MHSDS we are treating this as a separate master feed. The costing processes should be the same as those for NAPC.

Feed 17: Sexual health

Relevant costing standard

- Community standard CM16: Sexual health services
- Appendix 1: Data sources available as part of the national collection

Collection source

135. This data needs to be collected locally.

[16] The feed numbers are used across all sectors. For a full list, see Table IR1.1.

Feed scope

136. All sexual health contacts within the costing period that are not recorded in the standard NAPC feeds. Sexual health is currently outside the scope of the CSDS.

137. These may be pseudonymised contacts.

138. This is a standalone feed and therefore has no matching rules.

Feed 18: Dentistry

Relevant costing standard

- Community standard CM17: Dental services
- Appendix 1: Data sources available as part of the national collection

Collection source

139. This data needs to be collected locally.

Feed scope

140. There are three types of data for dental activity:
    - in the main PAS as admission episodes (included in the APC feed)
    - in the main PAS as outpatient attendances (included in the NAPC feeds)
    - in a separate local system for community dental activity.

141. All community dentistry contacts as defined above are in scope of this feed.

142. The feed should show the unit of dental activity as this is a unit used for costing and local reporting purposes.

143. This feed should not contain dentistry data already recorded in PAS and sent to Hospital Episode Statistics (HES) as part of the CDS.

Feeds 19a and 19b: Wheelchair contacts and wheelchair equipment

Relevant costing standard

- Community standard CM19: Wheelchair services
- Appendix 1: Data sources available as part of the national collection

Collection source

144. This data needs to be collected locally.

145. There are three types of data for wheelchair activity:
    - outpatient contacts recorded in the main PAS
    - contacts recorded in the local wheelchair system
    - the value recorded against each item of equipment issued to a patient.

Feed 19a scope: Wheelchair contacts

146. Wheelchair contacts within the costing period regardless of whether they are recorded on the main PAS or a separate clinical information system. You should ensure there is no duplication of data.

147. If the data for contacts is already in the NAPC feeds, it may remain there if the service is identifiable as wheelchair contacts.

148. The feed should show the nationally defined level of patient need as this is a unit used for local reporting purposes and national currencies. An optional field has also been included in the dataset to record a locally-defined level of need if this gives greater complexity/specialisation.

149. The feed should also have a patient identifier and date so analysis reporting can show wheelchair equipment with the contact. The cost will not be absorbed into the wheelchair contact.

Feed 19b scope: Wheelchair equipment

150. All wheelchair equipment and accessories issued to a patient (including where items are collected by a patient representative) within the costing period.

Integrated information requirements

151. The feed should include the cost of the equipment.

152. The feed should also have a patient identifier and date so analysis can show the total cost for the patient, but the cost will not be absorbed into the wheelchair contact.

153. Please note: equipment will not be issued at all contacts, and there will not necessarily be a contact with a wheelchair professional on the date that equipment is issued.

Feed 25: Unbundled HRGs – rehabilitation and specialist palliative care

Relevant costing standard

- Mental health or Community standard CM13: Admitted patient care

Collection source

154. This information may be included in the CDS or be collected locally

155. Where included in the CDS, procedure and diagnosis codes will generate unbundled HRGs via the NHS Digital casemix grouper. Where no national clinical coding is applied to the PAS record, local data will need to provide an HRG code to be manually applied.

Feed scope

156. Rehabilitation and specialist palliative care[17] given in a discrete unit – that is, in a specialist unit for this type of care. The patient activity should be brought into the PLICS as a feed.

157. For specialist palliative care units, the unbundled inpatient HRGs are generated on an episode basis, so the data feed (and costs) should reflect this.

[17] The 2018/19 NHS Digital documentation for the Reference Cost Grouper (chapter VC for rehabilitation and chapter SD for specialist palliative care) can be found at: https://digital.nhs.uk/services/national-casemix-office/downloads-groupers-and-tools/costing---hrg4-2018-19-reference-costs-grouper

Integrated information requirements

158. For rehabilitation units the feed should contain the categorisations of rehabilitation as defined by the Specialised Services National Definition Set (SSNDS):
    - complex specialised rehabilitation services (CSRS) – level 1
    - specialist rehabilitation services – level 2
    - non-specialist rehabilitation services – level 3.

159. Reporting the point of delivery for these unbundled HRGs is also a requirement; therefore, a field is included for this manual allocation based on your data:
    - admitted patients with overnight stay (elective and non-elective)
    - day case
    - regular day/night
    - outpatients/contacts (non-admitted)
    - other – this category has been included to understand if there are any types of activity not included above.

160. For rehabilitation units, the inpatient HRGs are unbundled on a per day basis, so the data and process should enable costing to reflect this.

Feed 26: Audiology contacts

Relevant costing standard

- Standard CM22: Audiology services

Collection source

161. This data needs to be collected locally.

Feed scope

162. All direct access audiology (DAA) patients and those having ongoing care following discharge from an acute pathway.

163. Please note: audiology services also provide clinical support to other specialties – especially otology ENT – within the audiology department and also in the other specialty clinic locations. These contacts should not be

included in this feed, but should be included as part of the optional supporting contacts feed (feed 7).

Additional patient-level activity feeds and data fields

164. The patient-level activity feeds specified above are the minimum required for costing but do not cover all patient activities involved in providing healthcare services. You need to decide whether you require additional patient-level feeds to meet specific costing needs. Examples of such feeds are:
    - offsite educational awareness/promotion
    - immunisation programmes (eg site visits to schools)
    - services provided to prisons and other secure locations.

165. Future development areas should be prioritised according to three criteria:
    - value of service
    - volume of service
    - priority of the service within the provider and the healthcare economy.

166. We encourage providers to collect more patient-level activity data wherever practical, taking account of the principle of materiality as stated in the costing principles.

167. If your organisation collects additional patient-level activity feeds in costing, we encourage you to continue to do so. You should record these additional feeds in ICAL worksheet 2: Additional information sources.

Identifying hidden activity

168. Take care to identify any ‘hidden’ activity in your organisation. This is activity that takes place in your organisation but is not recorded on any of your organisation’s main systems such as PAS.

169. In some organisations, teams report only part of their activity on PAS. For example, a department may report its APC activity on PAS but not its community activity. If this is the case, you should work with your informatics department and the department responsible for the data to obtain a feed containing 100% of the activity undertaken by the department.

170. Capturing 'hidden' activity is important to ensure that:
    - any costs incurred for this hidden activity are not incorrectly allocated to recorded activity, thus inflating its reported cost
    - costs incurred are allocated over all activity, not just activity reported on the provider's main system such as PAS
    - income received is allocated to the correct activities.

Other data considerations

171. Information from specific fields of the patient-level feeds is required to enable costs to be allocated, matched or reported during the costing process. These fields are flagged with a 'Y' in column K in Spreadsheet IR1.2.

172. The required patient-level feeds do not contain any income information. You may decide to include this information at patient level in the feeds to enhance the value of your organisation's reporting dashboard. The standards do refer to income where this makes it easier to understand both the costs and income for a particular service for local reporting and business intelligence.

173. The feeds do not include description fields, eg there is a ward code field but not a ward code description field. You may ask for feeds to include description fields; otherwise you will need to maintain code and description look-up tables for each feed, so you can understand the cost data supplied and facilitate appropriate outputs for reporting. There should be a process for mapping and a rolling programme for revalidating the codes and descriptions with each service.

174. You may use locally generated specialty codes to report specialist activity locally. For example, epidermolysis bullosa will be reported under the dermatology treatment function code (TFC), but your provider may decide to assign it a local specialty code, so this specialist activity is clearly reported.

175. If local specialty codes are used, they should be included in the patient-level feeds and in the costing process. The costs and income attributed to these specialist and community areas need to be allocated correctly. You need to maintain a table mapping the local specialty codes to the TFCs. This table needs to be consistent with the information submitted nationally to ensure activity can be reconciled.

Proxy records

176. For areas with no patient-level activity, it may be possible to create proxy records at patient level. These should conform to the same criteria as the CDS, MHSDS or CSDS datasets but should remain clearly identifiable as proxy records. These should be treated with caution and noted in your ICAL worksheet 16: Proxy records. They should also appear in the activity reconciliation – as described in Standard CP5: Reconciliation – as the costed patient records will not reconcile to the in-house activity count.

177. Proxy patient contact/attendance records can be created to provide patient records to attach cost to where there is no other record – for example, care provided outside the organisation, or to provide anonymous costed records for services that need to cost **a** patient not **the** patient. You will need a suitable source of local information to know how many records to create, and agree this within your assurance process (see Standard CP6: Assurance of cost data).

178. You should avoid generating proxy patient records within the costing system to solve data quality issues. It is better practice to work with your informatics department and service teams to create the correct data entry as is consistent with the ‘right first time’ principle. Creating proxy records in this way can lead to double counting of activity outputs – for example, if someone later adds a missing record and it flows through to the costing system, both the proxy record and the correct record will receive costs for the same activity.

IR2: Managing information for costing

Purpose: To assess, manage and improve the availability and quality of the information specified in Standard IR1: Collecting information for costing.

Objectives

1. To explain how to use information in costing.
2. To explain how to support your organisation improve the quality of the data it uses for costing.
3. To explain how to manage data quality issues in information used for costing in the short term.
4. To explain what to do when information is not available for costing.

Scope

5. All information required for the costing process.

What you need to implement this standard

- Costing principle 1: Good costing should be based on high quality data that supports confidence in the results[18]
- Appendix 1: Data sources available as part of the national collection
- Information gap analysis template (IGAT)[19]
- Costing assessment tool (CAT)

[18] See *The costing principles*, https://improvement.nhs.uk/resources/approved-costing-guidance/
[19] See the tools and templates to help implement the standards available from: https://improvement.nhs.uk/resources/approved-costing-guidance-2019

- Integrated costing assurance log (ICAL) template – where you can record and monitor your feed set up, progress and regular feeds for information management and governance.

Overview

6. As a costing practitioner, you are not solely responsible for the quality and coverage of information in your organisation. However, you are ideally placed to raise data quality issues.

7. This standard provides guidance on how you can mitigate the impact of poor quality information when producing cost information. These are short-term measures that allow you to produce reasonably accurate cost information that is in line with the costing principles while your organisation continues to work on the quality and coverage of its information as a whole.

8. This standard does not provide guidance on complying with information governance, including confidentiality, data protection and data security. You should consult your organisation on information governance, policies and procedures.

9. Most of the required information should be held in your organisation's information systems, but its availability will vary due to different information management practices and your IT server capacity.

10. Use our information gap analysis template (IGAT)[20] and work with your informatics colleagues and relevant services to assess data availability for costing. Following your first submission of data you will complete the costing assessment tool (CAT) to show the position at collection, and therefore progress over the year. The CAT information can then be used to start the next cycle of discussion with informatics colleagues, to enable improvement of existing data structures and quality, and agree a plan for the next year's inclusions.

[20] See tools and templates to help implement the standards, https://improvement.nhs.uk/resources/approved-costing-guidance-2019

Integrated information requirements

11. The availability of information for costing in your organisation can be grouped as:
    - **available as part of national data collections** – for patient-level feeds where national data collections capture all or some of the data. The information relating to these national data collections is given in Appendix 1: for example, the Admitted Patient Care Commissioning Data Set (CDS) or the Community Services Data Set (CSDS)
    - **available in department-specific systems** – you should obtain the required data from your informatics department or direct from the department or specialty for these feeds, eg the medicines dispensed feed
    - **unavailable at patient level** – depending on your organisation's patient-level data collection arrangements, data may not be available. You should highlight the local risk to accurate costing for these service areas in your assurance process (see Standard CP6: Assurance of cost data).
12. Use the information to populate the patient-level feeds log in integrated costing assurance log (ICAL) worksheet 1: Patient-level activity feeds.
13. Where a service is outsourced, you need to obtain patient-level information from the supplier. If this is not available, inform the assurance group of the situation and agree a local plan for obtaining the information, and how to allocate costs in the short term.
14. Agree with informatics colleagues:
    - the format of information
    - the frequency of patient-level activity feeds
    - any specific data quality checks for costing.
15. Access locally held information for allocating overheads (type 1 support costs), such as information on actual whole time equivalent (WTE) for allocating HR costs.
16. Work with your informatics colleagues and relevant services to streamline the extraction and processing of the information required for costing.

Approach

Using information in costing

17. Costing is a continuous process for local use and to facilitate the national collection. It is not a one-off exercise solely for the annual national collection.

18. The *Approved Costing Guidance* (ACG) has been designed to provide PLICS data for effective local reporting, with outputs that can be used as part of the decision-making process at regular intervals. (See Standard IR3: Using patient-level information as part of the decision-making toolkit.)

19. If ACG compliant cost data from another system with a different information structure feeds your local business intelligence, you may only need to run the ACG PLICS process once a year for the national collection.

20. If your organisation has no other form of cost data, best practice is to run the PLICS process quarterly as a minimum, to ensure all your patient activity, cost feeds and calculation processes are operating satisfactorily. We recommend the superior method of bringing patient activity and cost into the system and running the calculation process monthly

21. The benefits of frequent calculation of costs are: [21]
    - effects of changes in practice or demand are seen and you can respond to them while they are still relevant
    - internal reporting remains up to date
    - mistakes can be identified and rectified early.

22. A first cut of the patient-level activity feeds (that is, those that can be obtained from the national data collections) will generally be available from the patient administration system (PAS) by the fifth day of each month (referred to as Day 5 in Figure IR2.1). This timeframe may vary by sector. For example, your acute CDS activity may be available on day 5 and your community CSDS activity on day 7. You should confirm the dates with your informatics department and record them in ICAL worksheet 4: Timing of activity feeds.

[21] Further benefits of real-time data can be found at: www.gov.uk/government/publications/nhs-e-procurement-strategy

Integrated information requirements

23. Some organisations will also have updates to the first set of data – for example, by the 20th day of each month (referred to as Day 20 in Figure IR2.1) late data is added or an internal data quality review will have taken place.[22] You should assess whether the data for costing in any update is materially changed; if it is, include the update in the costing process.

24. Depending on the costing software and by agreement with your informatics team, you can load these patient-level feeds into your costing system:
    - the following month or
    - to a locally agreed in-month timetable.

25. You should record how much data is loaded each time, so you can reconcile activity inputs and outputs. ICAL worksheet 5: Activity load record gives the structure for doing this.

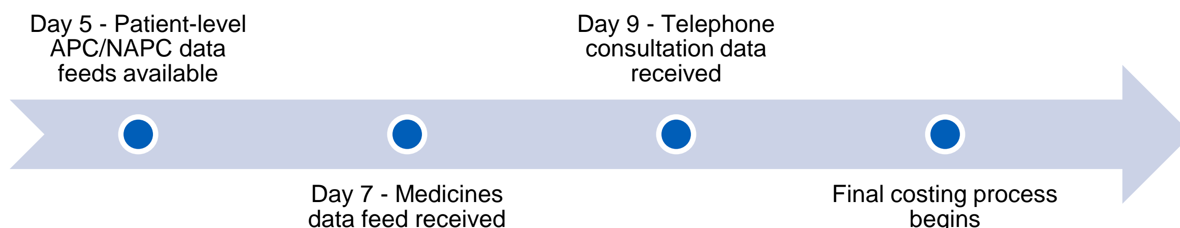
26. Any loaded update should add new records, amend existing records and remove erroneous records from the PLICS, to reflect changes to the PAS data. The method chosen can also be documented in your ICAL worksheet 5: Activity load record.

27. All other patient-level feeds should be submitted once a month to the costing team according to a locally agreed timetable, so the costing process can begin promptly. You may need to be flexible about when some departments provide their patient-level feed – but late submission should be the exception rather than the rule. This should be agreed with the service and informatics departments, and clearly documented to support good governance.

28. You may find it useful to represent agreed dates for the monthly cycle of data receipts in a timeline diagram (see Figure IR2.1 below).

[22] Some organisations will refer to this as ‘second’ or ‘final cut’.

Figure IR2.1: Example timeline showing when data should be available in the monthly cycle



Note: In this example, some parts of the costing cycle start on Day 5 and some feeds are updated later.

In-month or year-to-date feeds

29. You should consider carefully the period for which data is loaded – in-month or cumulative year-to-date, basing your decision on the approach and frequency of the costing process and your organisation's reporting requirements. Loading data monthly is easier as the number of records is much smaller.

30. The costing system must be configured to recognise whether a load is in-month or year-to-date; otherwise it may duplicate or not load some of the activity.

31. You need to ensure that nationally available data can be reconciled to the locally costed activity information.

32. If your organisation provides mental health or community services, you need to understand whether your PLICS feed includes special characters for onward linkage by NHS Digital after collection. Your PLICS feed should match the MHSDS or CSDS main datasets as submitted by your organisation to NHS Digital. If special characters are in this submission, they should be included in PLICS. See also Standard IR1: Collecting information for costing, paragraph 20.

33. Follow the guidance in Standard CP5: Reconciliation to ensure the costing system is loading everything. Check the number of patient records in the feed against the number of lines loaded into the costing system using two of the reports described in Table CP5.1: Cost, income and activity reconciliation –

the patient activity reconciliation report (CP5.2.2) and the core activity reconciliation report (CP5.2.1).

Refreshing the patient-level feeds

34. Please note the difference between a refresh and a year-to-date feed. A **year-to-date feed** is an accumulation of in-month reports (unless your informatics team has specified otherwise). A **refresh** is a rerun of queries or reports by the providing department to pick up any late inputs. The refreshed dataset includes all the original data records plus late entries.

35. You need to refresh the data because services will continue to record activity on systems after the official closing dates. Although these entries may be too late for payment purposes, they provide better information or complete information and still need to be costed. The refreshed information picks up these late entries, which may be material in quantity.

36. Get a refresh of all the patient-level activity from the relevant department/team or your informatics department to an agreed timetable:
    - six-monthly – refresh all the data feeds for the previous six months (April to September)
    - annually – after the informatics department has finished refreshing the annual Hospital Episode Statistics (HES), usually in May, refresh all the data feeds for the previous financial year (April to March).

37. You need to specify in the costing system whether values in the patient-level feeds can be used for calculations. If inconsistent measures are used across the records – for example, number of tablets, number of boxes or millilitres dispensed for different records in the medicines dispensed feed's 'quantity' column records – the costing system will need to ignore these quantities in the feed.

38. Refreshes can alter the comparative figures in monthly service-line reports and are a challenge for costing teams. With the help of the relevant services' financial management leads,[23] you need to explain significant changes to

[23] This support has a variety of names, including management accounts or finance business partner support.

users of the service-line reports, highlighting the impact of late inputs to the department providing the patient-level activity feed.

Information used in the costing system for calculations

39. If your costing system uses information from a feed to calculate durations – for example, length of stay in hours, it needs to know which columns to use in the calculation. If the durations have already been calculated and included in the feed, your costing system needs to know which column to use in allocating costs.

40. Once you decide the method of calculation, keep a record for each patient-level feed in ICAL worksheet 1: Patient-level activity feeds.

Supporting your organisation in improving data quality for costing and managing data quality issues in the short term

Data quality checks for information to be used in costing

41. You need to quality check information that is to be used for the costing process by following a three-step process:
    1. **Review the source data:** identify any deficiencies in the feed, including file format, field format, incomplete data, missing values, incorrect values, insufficient detail, inconsistent values, outliers and duplicates.
    2. **Cleanse the source data:** remedy/fix the identified deficiencies. Take care when cleansing data to follow consistent rules and log your alterations. Create a 'before' and 'after' copy of the data feed. Application of the duration caps is part of this step. Always report data quality issues to the department supplying the source data so they can be addressed for future data inputs and refreshes. Keep data amendments to the minimum, only making them when fully justified and documenting them clearly on ICAL worksheet 7: Activity data cleansing.
    3. **Validate the source data:** you need a process to check that the cleansed and correct data is suitable for loading into the costing system. This may be part of the costing system itself. Check that the cleansing measures have resolved or minimised the data quality issues identified in step 1; if

they have not, either repeat step 2 or request higher quality data from the information source.

42. Consider automating the quality check to reduce human errors and varied formats. Automatic validation – either via an ETL (extract, transform and load) function of the costing software or self-built processes – can save time. But take care that the process tolerates differences in input data and if not, that this data is consistent. Without this precaution you risk spending disproportionate time fixing the automation.

43. Over time, your organisation should be able to demonstrate an iterative improvement in data quality for clinical audit and costing assurance purposes. You should request changes to the data feeds via the source department or informatics team and then review the revised data again for areas to improve. You should set up a formal process to guide these data quality improvement measures and ensure those most useful to the costing process are prioritised. An example of this process is shown in Appendix 2.

44. Record the actions taken to improve data quality in ICAL worksheet 6: Activity data quality checks, and any data cleansing processes established in ICAL worksheet 7: Activity data cleansing.

Use of data caps

45. A duration cap rounds outlier values up or down to bring them within accepted parameters in your costing process. These will be locally defined and you should review the feeds to decide where to apply duration caps and build them into the costing system or in the data load into PLICS.

46. You can also apply a cap to reduce outliers, eg an appointment/contact in a non-admitted patient care (NAPC) setting that has not been closed. Doing so removes the distraction of unreasonable unit costs when sharing costing information.

47. For services in the community, be aware that some NAPC contacts in the patient’s home will go over midnight. If this happens at the end of a reporting period, you should use the start date as the date of the contact and may choose to cap the contact at the end of the period. (See also Acute, Mental health or Community standard CM3: Non-admitted patient care). There is no

requirement to create incomplete patient events (as in Standard CM2: Incomplete patient events) for NAPC, as it is currently thought not material.

48. Capped data needs to be reported as part of the data quality check. The caps need to be clinically appropriate and signed off by the relevant service.

49. While caps moderate or even remove outlier values, studying these outliers is informative from a quality assurance point of view (eg review unexpected deviations). You should record the caps used in ICAL worksheet 1: Patient-level activity feeds, and work with your informatics department and the department responsible for the data feed to improve the data quality and reduce the need for duration caps over time.

Recalled items on patient-level activity feeds

50. Take care with patient-level activity feeds in case they contain negative values due to products being returned to the department, eg the medicines dispensed feed (feed 10)[24] can contain both the dispensed and the returned medicines for a patient. These dispensations and returns are not always netted off within the department's database, so both will appear in the feed. If this is the case, you need to net off the quantities and costs to ensure only what is used is costed.

Unavailable data

51. Where patient demographic information is not available for governance or confidentiality reasons, costs should still be allocated to '**a**' patient, not necessarily '**the**' patient, by following the costing process. The costing software may require a proxy patient record and anonymous patient number to provide the base for the costs to be attached to. In this case, the process for managing these records should be recorded in ICAL worksheet 16: Proxy records.

52. Information for costing may not be available because:
    - it is not collected at an individual patient level
    - data is not given to the costing team

[24] For further guidance on ensuring the quality of the medicines dispensed feed, see Standard CM10: Pharmacy, medicines and blood services.

- data is not in a usable format for costing
- data is not loaded into the costing system and included in the costing processes
- your organisation may not collect information for auxiliary data feeds, eg if medicines are dispensed by a private pharmacy.

Making data available

53. If any of the required data fields in Spreadsheet IR1.2 are empty, follow the steps in Appendix 3 to make the data available for costing.

54. Appendix 3 helps you identify why patient-level activity information may not be available and the action you need to take to make it available.

55. Until the data becomes available, you will need to use an alternative costing method to allocate costs, eg relative weight values.[25]

Influencing improvement in data flows

56. Costing practitioners are not solely responsible for improving data quality or completeness in trust systems, but should contribute to the improvement process where possible, using accurate and complete costing data for decision-making to support the drive for change.

57. Costing practitioners need to understand any material anomalies in data quality within the costing process, so they can make users of the data aware during reporting for context. This will ensure decisions are not based solely on misleading financial information.

58. You may wish to join committees in your organisation that are responsible for data quality.

[25] See Standard CP3: Allocating costs to activities, for further information on relative weight values.

IR3: Using patient-level information as part of the decision-making toolkit[26]

Purpose: To set out the prescribed uses for costed patient-level information in providers and the wider health economy, and for healthcare development.[27]

It also gives examples of best practice – referred to as ‘superior methods’.

Objectives

1. To ensure providers use the PLICS outputs as part of the toolkit of information for operational, strategic, improvement and value-based decisions about patient care. Value-based healthcare combines cost and outcome of patient care to provide more useful information for clinicians and service managers than cost alone.

2. To ensure senior management – including the trust board members on behalf of their organisations – understand how the PLICS outputs can contribute to short and long-term planning, and participate in review and use of the information.

[26] This standard is new and has been added to the transition path at year 3 from 2020. It will not become part of the costing assurance programme (audit) until at least 2023. The basic requirements in the standard are ‘prescribed’. Those elements suggested to be ‘superior methods’ are given separately: use of these indicates a higher-level use of cost data but these methods are not yet part of the mandation timetable.

[27] This includes use of the publicly released data for research, pricing, etc.

3. To ensure all finance professionals and wider stakeholders can understand and use the PLICS outputs effectively.

4. To provide appropriate information for local contracting arrangements for NHS and non-NHS commissioners[28] of patient care.

Scope

5. The standard covers all data in the PLICS: including reporting patient care, and clinical, non-clinical and functional services such as pathology, catering and estates.

6. The standard specifies the minimum ‘prescribed’[29] requirements for local use of the PLICS output information. We recommend that over time, and to work towards best practice, trusts use the ‘superior methods’ of reporting to extend the output and help meet their local needs. All paragraphs are prescribed, unless stated to concern a superior method.

7. PLICS information should provide the source data for the mandated, annual, national cost collection where a provider is required to submit PLICs for in-scope services. As a superior method, to reduce duplication in the costing process, where services are costed and submitted at average level (services out of scope of the PLICS collection[30]), this data will also come from a single PLICS costing system.

What you need to implement this standard

- The costing principles[31]
- Standard CP6: Assurance of cost data
- Technical document:
  - Spreadsheet IR3.1: Information reports[32]

[28] For example, the PLICS data may contribute to private patient pricing.
[29] The transition path gives trusts three years to introduce the minimum requirements, from first publication of the standard or from PLICS collection mandation year (whichever is the later). The standard specifies any recommended best practice use of cost data.
[30] The collection format formerly known as reference costs.
[31] https://improvement.nhs.uk/resources/approved-costing-guidance/
[32] The reports are earmarked ‘prescribed’ or ‘superior methods’ to help with prioritisation when implementing this standard.

- The PLICS portal

Overview

8. This standard is a framework for the use of PLICS outputs. The prescribed elements will ensure organisations achieve a minimum understanding of cost drivers: to support their work to identify and achieve economic and effective efficiencies; to improve their data quality (where needed); and to review and challenge their patient-level cost data. Where possible, best practice enhancements are suggested and identified as 'superior methods'.

9. Trusts can use this framework as a basis for their use of PLICS, developing it further in locally agreed and sector-relevant areas, as required.

10. PLICS data should be used regularly by the trust to provide value-added information and not used solely for the annual national submission of cost and activity.

11. PLICS for service decision-making should be used in conjunction with other decision-making criteria, such as safety and outcome metrics.

12. Understanding the costs of delivering services is fundamental to managing and improving patient care, managing financial position and ensuring effective business planning. Therefore, cost information should be considered in conjunction with the organisation's regular management information systems and processes to an agreed local timetable of inclusion.

13. PLICS data should be a central source of patient service cost information and should be used in conjunction with financial management processes.

14. PLICS data should be used for benchmarking against relevant parties within and external to the organisation, using local and national tools as relevant to understand opportunities.

15. Shared outputs shared should be presented in appropriate formats and levels of detail to meet different user needs. For example:
    - aggregated information for executives and finer detail for consultants
    - graphical and case study illustrations to support different learning styles.

Integrated information requirements

16. Reports/dashboards should be user friendly, clear and concise, and show other relevant metrics and comments for context. We do not specify the layout of dashboards as this will vary by software, sector relevance and local agreement.

17. The content of reports/dashboards should be agreed with the PLICS steering group.[33]

18. Costing teams are known to be a limited resource; therefore, the wider organisation will need to be involved in implementing this standard, with the PLICS steering group especially liaising with the board to obtain support and engaging financial management and informatics colleagues. This will help ensure the information is used.

Approach

19. The provider should have a plan to make PLICS data available to agreed local stakeholders on a regular basis and to fulfil ad-hoc enquiries: for example, quarterly service-line management reports for executives and deep-dive information on a particular procedure or detailed data quality reviews requested by a service manager or lead clinician.

20. To facilitate PLICS data use, the costing team should contribute data to dashboards, reports and tools. As a superior method, data will be included through the trust's main dashboard for business intelligence and performance information.

21. Benchmarking information – as available via national tools such as the PLICS cost index (PCI) or the reference cost index (RCI)[34] – should be reviewed annually and discussed at board level using appropriate comparator services or organisations. As a superior method, the PLICS portal or other benchmarking tools for PLICS information should be used when reviewing regular and detailed PLICS information. Also as a superior method,

[33] Or other named group of senior stakeholders as established locally. This group was formerly called the 'PLICS user group' in costing process Standard CP6: Assurance of cost data .
[34] According to the mandation timetable for the national cost collection, providers will receive different index scores according to sector.

benchmarking information should be made available to service managers and clinicians to support their review of costs.

22. Table IR3.1 shows examples[35] of how the PLICS data can be used as part of the decision-making toolkit.

Table IR3.1: Examples of how PLICS data can be used as part of the decision-making toolkit

To underpin and provide more detail on clinical and operational performance reviews, such as Getting It Right First Time (GIRFT), Use of Resources project and Model Hospital/Model Mental Health/Model Community metrics.
To identify cost savings and efficiencies.
Business cases – such as those for patient service investment, and reviews of past business cases.
Clinical reconfiguration of pathways and patient services.
Integrated care system and sustainable transformation partnership reviews.
Access to income information.
Regular service-line reporting (SLR) comparisons between income and cost at service level – to include profitability information.[36]
Commissioning/contracting including local requirements where there is no national pricing structure.
Benchmarking performance by site, service or consultant – for example, in terms of profitability, patients treated or number of cataracts on a theatre list.
Facilitating reviews of new innovations and working towards improved health outcomes.
Reviews of private patient cost recovery and to support pricing discussions.

[35] These examples are not prescribed elements – but can be used to formulate a plan to roll out PLICS information.
[36] Use at service level is included in the standard as a minimum. In some patient services, SLR at a more detailed level will be useful.

Integrated information requirements

23. PLICS may also contribute to the understanding of other metrics; for example enabling:
    - clinicians to see coded data and have the opportunity to discuss coding and data quality
    - clinicians and managers to understand the impact of cost as part of value-based healthcare reviews (in conjunction with outcome data)
    - trusts to improve the accuracy of national metrics such as the hospital standardised mortality ratio.

24. A case study document will give examples of the contributions that PLICS can make to trust decision-making. We will announce its publication in the Costing Newsletter.

25. Data users should be trained adequately for the level at which they view and manipulate the dashboard/reports. Different users may require different levels of training – to be defined locally.

26. A support mechanism for data queries should be provided.

27. PLICS data uses should be showcased to the trust board at least twice a year, eg local case studies. This is additional to the reporting for assurance of quality and process described in Standard CP6: Assurance of cost data.

28. Trusts should have a plan in place for making PLICS data available to clinical and service leads. As a superior method, a range of information should be shared with regular and/or ad hoc users at directorate/division/ service level.

Information governance

29. Reporting systems should comply with local and national information governance regulations. The provider should agree what level of detail is appropriate in reports.

Integrated information requirements

Dashboards and reports

30. PLICS data should be presented in a format appropriate for local users.

31. A superior method of presentation is a dashboard format – or another agreed graphical format/tool, either within the PLICS or as an output from the PLICS data. Where used, dashboards should have a simple 'front page' with options for high-level views of the data, as well as being able to bring up detail on subsets of the data.

32. PLICS data may be shared in different ways depending on its content and the licensing arrangements in place.[37]

33. A superior method is for trusts to integrate financial and performance information – including PLICS and activity – with their core business intelligence (BI) dashboards.[38]

34. The available aggregated PLICS data should include a range of the examples shown in Table IR3.2 (the superior method is to include all but the last two examples).

Table IR3.2: Data items that are useful for reporting

Trust-level information.
Service-level information, including main specialty and treatment function codes (TFCs) where relevant to the sector. Bespoke service-level information is recommended, especially where specialty/TFCs are insufficient.
Point of delivery information, eg episode, attendance, contact.
Healthcare resource group (HRG) information or other currency as appropriate for the sector. Mandated currencies should be available. Local currencies should be included for best practice. For example, critical care currencies are mandated at HRG level, but local information may provide greater understanding at a more granular acuity level.
Consultant/named healthcare professional.

[37] Reporting platforms may have separate licensing arrangements from the PLICS itself.
[38] It is recognised that not all trusts have BI dashboards yet.

Integrated information requirements

Patient-level aggregated data – anonymised/pseudonymised for reporting[39] but retaining identification for use by relevant clinicians, or grouped into patient cohorts as per local need, eg orthopaedic patients grouped into 'hips', 'knees', 'shoulders', 'feet', 'other', etc.
Patient-level anonymised and/or patient identifiable report showing the detailed cost of an individual patient event.[40]
Geographical, site, commissioner or service team-based analysis.
The period the data covers.
PLICS resources and/or collection resources.
PLICS activities and/or collection activities.
General ledger cost centre and/or expense code, showing where the costs are allocated.
Fixed, semi-fixed and variable costs – see Standard CM15: Cost classification for more information.
Commissioner/funding stream, incorporating the private patient identifier.
Patient pathway linkages, if available.
Other items within the PLICS from the master dataset, eg clinic code.

35. The information shown in reports or dashboards should be updated annually, but the superior method is to update it quarterly. This ensures the most recent data is available; the information will degrade in usefulness over time.

36. Where provided, benchmarking data should be presented in a way that meets local user requirements. For example:
    - the same period from the previous year
    - the previous period in the same year (eg 'this quarter and last quarter' for a quarterly reporting cycle) for time-bound comparison.

[39] See also Standard CP6: Assurance of costing data, and collection guidance.
[40] This analysis is sometimes referred to as the 'hotel bill' presentation concept.

Integrated information requirements

37. Deep-dive exercises should be agreed locally with users and a range of different analytical tools may be used; for example, to show historical trend information for a service area in more detail and with a three-month rolling average.

38. Where SLR is used to compare cost and income, it should be clear whether the data for both came from the PLICS.

39. As a superior method, SLR models based on actual values should come from the PLICS data,[41] using the same activity data for context and to reduce duplication in the costing process. This will ensure:
    - SLR outputs gain PLICS drill down benefit
    - SLR outputs are assured as compliant with the costing standards
    - PLICS data can show the 'contribution to overheads', where the controllable costs can be separated from the support costs not controlled by service managers/clinicians.

40. For technical users of the data, eg finance professionals and analysts, the data should be available in an appropriate BI tool or it should be possible to export it.[42] Advanced costing practitioners or data analysts can then perform other modelling tasks, including reviews of areas of specific need or deep-dive analyses.

41. A superior method of analysis will provide a forward projection with adjustments for known changes as well as showing a historical picture; for example, presenting historical maternity information along with the projected impact of a local birthing unit closing in another provider trust.

42. Standard CP6: Assurance of cost data requires that a 'costing steering group' with executive and clinical membership is established to support assurance around costing processes. This group should also provide oversight of the reporting and use of PLICS data.[43] The steering group should oversee the areas listed above that require a plan or local agreement. An example sample of key areas for discussion is:

[41] This could be a link to the separate system or a tailored output sample. Models that use budgeted figures or standard costing are not consistent with this superior method.
[42] Further technical requirements for the PLICS are detailed in the minimum software requirements: https://improvement.nhs.uk/resources/minimum-software-requirements
[43] See Standard CP6: Assurance of cost data for more information on this group's assurance role.

- prioritisation of the development of the factors listed in Table IR3.2 above
- interface between the trust board and the PLICS data; for example, advising on the level of contact with services on performance management processes and to support the sharing of case studies
- locally agreed factors.

43. We recommend that costing teams work first with individuals who embrace the concepts of PLICS to better manage services.

Financial analysis and benchmarking

44. Data for PLICS is often produced separately from that used by managers for budgetary management purposes. Costing teams should work with the wider finance team to present costed patient care information in conjunction with other types of financial information in a locally agreed format. A superior method is for PLICS, budget and income information all to be included in the decision-making toolkit[44] to give a full picture of the factors influencing financial performance.

45. The costing team should work with the financial management team to ensure that senior managers and users of PLICS data understand the differences between PLICS, budgetary and income information. A superior method includes the rolling out of this understanding to the wider finance team, and all service managers and clinical leads.

46. Finance professionals should understand the PLICS information for the service area for which they are responsible, so they can direct colleagues to relevant costing information and answer queries about it.

47. A superior method is for finance management staff job descriptions to include the ability to understand patient-level costing and activity data at a level appropriate to their grade. For the organisation to realise benefits from PLICS, finance management staff will also need to have objectives relating to working with the costed data outputs. While costing teams are varied and often small relative to finance teams, close working between the two is essential if data outputs are to be put to good use.

[44] It is recognised that budgetary management is presented in a different format to SLR information.

Integrated information requirements

User engagement – clinical and service management

48. Service and clinical leader engagement with cost information is essential to ensure the PLICS is effectively used. If service leaders are confident about the quality of information provided (see Standard CP6: Assurance of cost data), they can use it in conjunction with other decision-making tools.

49. Training programmes should be designed to ensure service and clinical leaders understand what PLICS is and how it works. They should understand that because the costing process adopted by PLICS is a full absorption model, some of the costs included in the unit cost are easier to address than others. Getting a clinician to focus on looking at their contribution to overheads may be beneficial.

50. As reported by costing practitioners, best practice is achieved by first presenting information in a way that shows how patients will potentially benefit from PLICS. Patient events may draw more attention than the cost alone. Therefore, when sharing information, you should promote:
    - an understanding of your organisation's activity data
    - the benefit of good quality electronic patient record data for the patient, as well as the clinician in helping them understand how to improve it
    - awareness of how the effective use of resources can make more funds available for patient care improvements.

51. Superior methods of presenting PLICS information that encourage clinical engagement include:
    - outcome measures (where they exist) showing the value of the service to the patient, eg International Consortium for Health Outcome measures (ICHOM) [45] or NHS Digital's patient-related outcome measures (PROMs).[46] This progresses BI and use of cost data towards the 'value-based healthcare' model.[47] We recognise that while costing practitioners are not responsible for the outcome data, they can meaningfully add to discussions
    - link activity (and cost) to patient pathways

[45] https://www.ichom.org/
[46] https://digital.nhs.uk/data-and-information/data-tools-and-services/data-services/patient-reported-outcome-measures-proms
[47] Porter ME, Olmsted Teisberg E (2006) *Redefining health care: creating value-based competition on results*. Harvard Business Review Press.

- link to clinical metrics – such as GIRFT or Care Quality Commission reviews
- include patient experience metrics – such as patient-related experience measures (PREMs). These are often only available by service or at a high level but can be used at service level.

Functional services

52. It is important that managers of clinical and non-clinical functional services can view and understand the data for their areas, such as diagnostics, estates and facilities, HR, supplies and procurement.

53. You should engage regularly with these functional areas to show them how their information is used in PLICS, to better understand how the costs are included in the patient care cost and to identify opportunities for efficiencies.

Appendix 1: Data sources available as part of a national collection

Feed number	Feed letter	Feed name	Data source	Description	Supporting information link
1	a	Admitted patient care (APC)	Admitted Patient Care Commissioning Data Set (CDS)	This dataset details data for finished and unfinished consultant, midwife and nursing episodes. The list of the fields included in the CDS dataset can be found in the Data Dictionary (see supporting information link)	www.datadictionary.nhs.uk/web_site_content/cds_supporting_information/commissioning_data_set_version_6-2_type_list.asp?shownav=1
1	b	Admitted patient care (APC) (mental health)	Mental Health Services Data Set (MHSDS)	The MHSDS is a patient-level, output-based, secondary uses dataset that delivers robust, comprehensive, nationally consistent and comparable person-based information for children, young people and adults who are in contact with mental health services. As a secondary uses dataset it intends to reuse clinical and operational data for purposes other than direct patient care.	https://digital.nhs.uk/data-and-information/data-collections-and-data-sets/data-sets/mental-health-services-data-set
2		Urgent care (A&E/MIU)	A&E Commissioning Data Set (CDS)	The dataset details data for A&E attendances for acute providers.	http://www.datadictionary.nhs.uk/data_dictionary/messages/cds_v6-

Feed number	Feed letter	Feed name	Data source	Description	Supporting information link
				The list of the fields included in the dataset can be found in the Data Dictionary (see supporting information link). The applicable CDS type is: 010 – Accident and emergency CDS.	2/data_sets/cds_v6-2_type_010_-_accident_and_emergency_cds_fr.asp?shownav=1
3	a	Non-admitted patient care (NAPC)	Outpatient Commissioning Data Set (CDS)	This dataset details data for outpatient attendances/appointments for acute providers. The data includes activity for consultant, nurse and midwife attendances/appointments. Ward attendances for nursing care are also included in this extract.	http://www.datadictionary.nhs.uk/data_dictionary/messages/cds_v6-2/data_sets/cds_v6-2_type_020_-_outpatient_cds_fr.asp?shownav=1
3	b	Non-admitted patient care (NAPC) (mental health)	Mental Health Services Data Set (MHSDS)	The MHSDS is a patient-level, output-based, secondary uses dataset that delivers robust, comprehensive, nationally consistent and comparable person-based information for children, young people and adults who are in contact with mental health services. As a secondary uses dataset it intends to reuse clinical and operational data for purposes other than direct patient care.	https://digital.nhs.uk/data-and-information/data-collections-and-data-sets/data-sets/mental-health-services-data-set
3	c	Non-admitted patient care (NAPC)	Community Services Data Set (CSDS)	The CSDS is a patient-level, output-based, secondary uses dataset that will deliver robust, comprehensive, nationally consistent and comparable person-centred information for people who are in contact with publicly-funded community services. As a secondary uses dataset it intends to reuse clinical and operational data for	https://digital.nhs.uk/data-and-information/data-collections-and-data-sets/data-sets/community-services-data-set

Integrated information requirements

Feed number	Feed letter	Feed name	Data source	Description	Supporting information link
				purposes other than direct patient care. It defines the data items, definitions and associated value sets to be extracted or derived from local systems. The CSDS is an update to the Children and Young People's Health Services (CYPHS) dataset standard (ref: SCCI1069) so the scope includes data for people of all ages in receipt of publicly-funded community services.	
4		Ward stay (optional for costing – see Standard IR1: Collecting information for costing; feed 4)	Local dataset, in conjunction with Admitted Patient Care Commissioning Data Set (CDS)	The applicable CDS types are: 120 – Finished birth episode 130 – Finished general 140 – Finished delivery 150 – Other birth event 160 – Other delivery event 170 – Detained and/or long-term psychiatric census 180 – Unfinished birth 190 – Unfinished general 200 – Unfinished delivery	
5		Non-admitted patient care – did not attend (DNA)	Outpatient Commissioning Data Set (CDS)	This dataset details data for outpatient attendances/appointments for acute providers. The data includes activity for consultant, nurse and midwife attendances/appointments. Ward	http://www.datadictionary.nhs.uk/data_dictionary/messages/cds_v6-2/data_sets/cds_v6-

Feed number	Feed letter	Feed name	Data source	Description	Supporting information link
		(optional for costing)		attendances for nursing care are also included in this extract. The list of the fields included in the extract can be found in the Data Dictionary (see supporting information link). This feed is provided for guidance only.	2_type_020_-_outpatient_cds_fr.asp?shownav=1
6	A	Critical care – neonatal	Neonatal Critical Care Minimum Data Set (NCCMDS)	NCCMDS details the data required to enable the assignment of healthcare resource groups (HRGs) to neonatal episodes of care. The list of the fields included in the dataset can be found in the Data Dictionary (see supporting information link). The applicable CDS types are: 130 – Finished general 190 – Unfinished general	http://www.datadictionary.nhs.uk/data_dictionary/messages/supporting_data_sets/data_sets/neonatal_critical_care_minimum_data_set_fr.asp?shownav=1
6	B	Critical care – paediatric	Paediatric Critical Care Minimum Data Set (PCCMDS)	PCCMDS is the minimum dataset that is required to allow the assignment of paediatric critical care HRGs. The list of the fields included in the dataset can be found in the Data Dictionary (see supporting information link). The applicable CDS types are: 130 – Finished general 190 – Unfinished general	http://www.datadictionary.nhs.uk/data_dictionary/messages/supporting_data_sets/data_sets/paediatric_critical_care_minimum_data_set_fr.asp?shownav=1

Integrated information requirements

Feed number	Feed letter	Feed name	Data source	Description	Supporting information link
6	C	Critical care – adult	Critical Care Minimum Data Set (CCMDS)	This dataset is required to support the assignment of critical care HRGs, excluding neonates and paediatrics. The list of the fields included in the dataset can be found from the Data Dictionary (see supporting information link). The applicable CDS types are: 120 – Finished birth 130 – Finished general 140 – Finished delivery 180 – Unfinished birth 190 – Unfinished general 200 – Unfinished delivery	http://www.datadictionary.nhs.uk/data_dictionary/messages/supporting_data_sets/data_sets/critical_care_minimum_data_set_fr.asp?shownav=1
10		Medicines dispensed	High-cost drug information collected by NHS England Specialist Services	Data collection sheets to enable the consistent exchange of patient-level information between provider and commissioner in support of the commissioning of devices and drugs excluded from the national tariff.	https://www.england.nhs.uk/publication/devices-and-drugs-taxonomy-and-monthly-dataset-specifications/
12		Diagnostic imaging	Diagnostic imaging dataset	This dataset contains information from the radiology system, such as the type of test, the source of referral and patient details. Further information about the dataset can be found on our website (see supporting information link)	www.england.nhs.uk/statistics/statistical-work-areas/diagnostic-imaging-dataset

Integrated information requirements

Feed number	Feed letter	Feed name	Data source	Description	Supporting information link
14		Clinical multidisciplinary team (MDT) meetings	National Cancer Waiting Times Monitoring Data Set	This is a patient-level clinical and administrative dataset used for various access targets.	http://www.datadictionary.nhs.uk/data_dictionary/messages/clinical_data_sets/data_sets/national_cancer_waiting_times_monitoring_data_set_fr.asp?shownav=1
14		Clinical multidisciplinary team (MDT) meetings	Cancer Outcomes and Services Data Set (COSD)	You can register to obtain details of your COSD submission for cancer MDTs.	https://nww.cancerstats.nhs.uk
14		Clinical multidisciplinary team (MDT) meetings	Somerset Cancer Registry (SCR)	SCR is a software application designed to collect relevant data throughout the patient's cancer journey.	http://www.somersetscr.nhs.uk/
15		Prostheses and other high-cost devices	National Joint Registry	Orthopaedic prostheses used in elective patients.	http://www.njrcentre.org.uk/njrcentre/default.aspx
16		Improving Access to Psychological Therapies (IAPT)	Improving Access to Psychological Therapies Data Set	The IAPT dataset was developed to collect national data on IAPT services, to support service delivery, inform clinical decision-making and encourage improved access to talking therapies for people with common mental health problems such as depression and anxiety disorders. Started in April 2012, this dataset is submitted by providers of NHS-funded IAPT care via the NHS Digital Bureau Service Portal.	https://digital.nhs.uk/data-and-information/data-collections-and-data-sets/data-sets/improving-access-to-psychological-therapies-data-set

Integrated information requirements

Feed number	Feed letter	Feed name	Data source	Description	Supporting information link
18		Dentistry	Dentistry dataset	NHS community dentistry is commissioned by CCGs from community NHS and private dental practices and NHS community provider organisations. The community dental activity is recorded and sent to NHS Digital for inclusion in the NHS Dental Statistics. Dental hospitals and outpatients as part of an acute provider are recorded using the Commissioning Data Set (CDS) and are not included in this feed or the NHS Dental Statistics.	https://digital.nhs.uk/data-and-information/publications/statistical/nhs-dental-statistics
19	a	Wheelchair contacts	National Wheelchair Data Collection	This dataset is collected quarterly at aggregate level. There should be an underlying local dataset to fulfil this return.	https://www.england.nhs.uk/publication/wheelchair-services-national-wheelchair-data-collection-guidance/
19	b	Wheelchair equipment	National Wheelchair Data Collection	This dataset is collected quarterly at aggregate level. There should be an underlying local dataset to o support this return	https://www.england.nhs.uk/publication/wheelchair-services-national-wheelchair-data-collection-guidance/
19	a and b	Wheelchair currencies	National Wheelchair Data Collection	The data items required to create the currency information will be available in the underlying local dataset	https://www.england.nhs.uk/publication/wheelchair-services-national-wheelchair-data-collection-guidance/

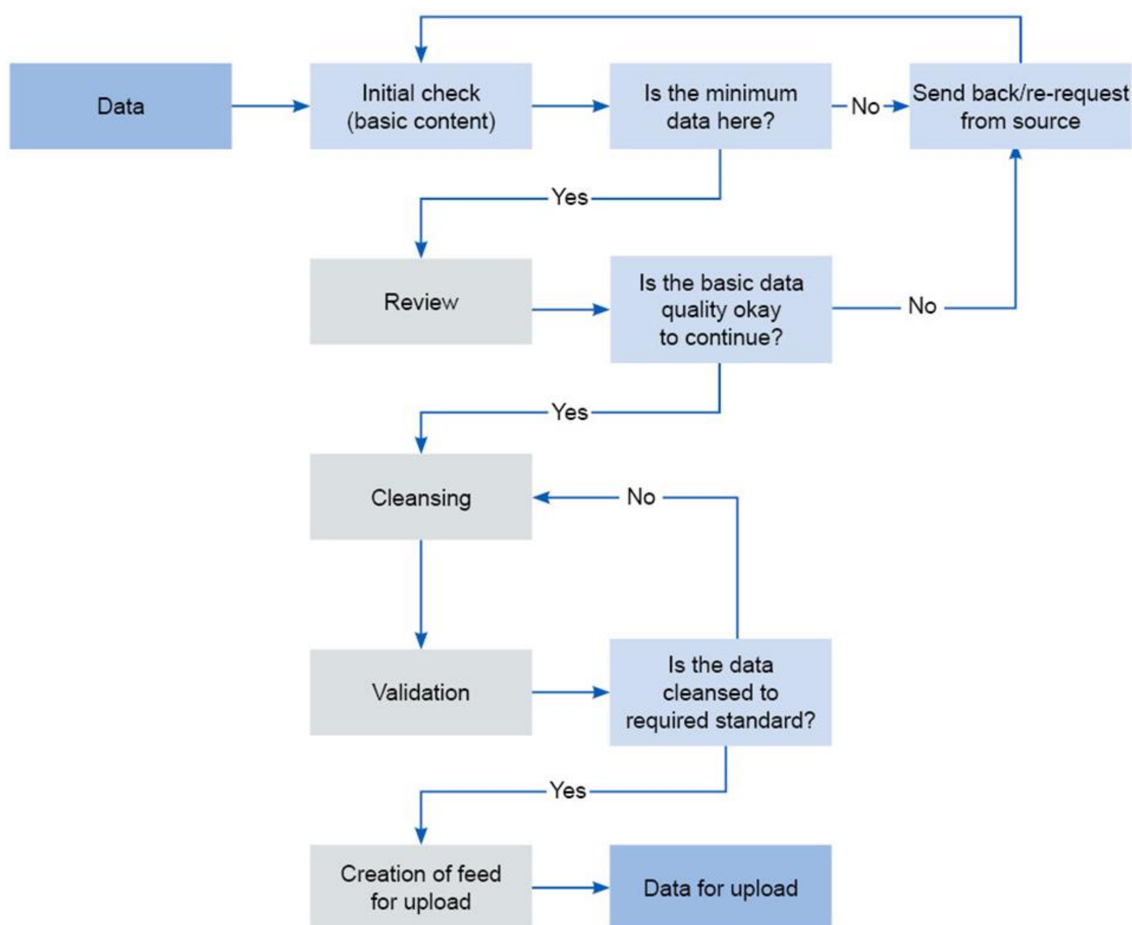
Integrated information requirements

Feed number	Feed letter	Feed name	Data source	Description	Supporting information link
Other			Chlamydia Testing Activity Dataset (CTAD)	CTAD is used to provide detailed reports at a national and local level on screening coverage, the proportion of chlamydia tests that are positive and the chlamydia detection rate in England.	https://www.gov.uk/guidance/chlamydia-testing-activity-dataset-ctad
Other			Sexual and Reproductive Health Activity Data Set (SRHAD)	SRHAD came into effect on 1 April 2010. It consists of anonymised patient-level data submitted on an annual basis. SRHAD replaces the annual, aggregate KT31 return and provides a much richer source of contraceptive and sexual health data for a range of uses from commissioning to national reporting.	http://content.digital.nhs.uk/datacollections/srhad
Other			Genitourinary Medicine Clinic Activity Data Set (GUMCADv2)	GUMCADv2 is a mandatory reporting system providing data on sexual health services and STI diagnoses from all commissioned Level 3 and Level 2 sexual health services in England. It is an electronic, pseudo-anonymised, patient-level dataset reported by over 600 services.	https://www.gov.uk/guidance/genitourinary-medicine-clinic-activity-dataset-gumcadv2
Other			HIV and AIDS Reporting System (HARS)	HARS is the dataset underpinning national HIV surveillance. It is used to: inform the public health response and policy formulation for HIV in England.	http://content.digital.nhs.uk/media/22774/1570202015guidance/pdf/1570202015guidance.pdf
other			Maternity Services Data Set (MSDS)	MSDS Information Standards Notice (ISN) that mandates the national collection of the MSDS is available via the former ISB web pages. A corrigendum that makes some minor corrections to the original ISN is also available on the	https://digital.nhs.uk/data-and-information/data-collections-and-data-sets/data-

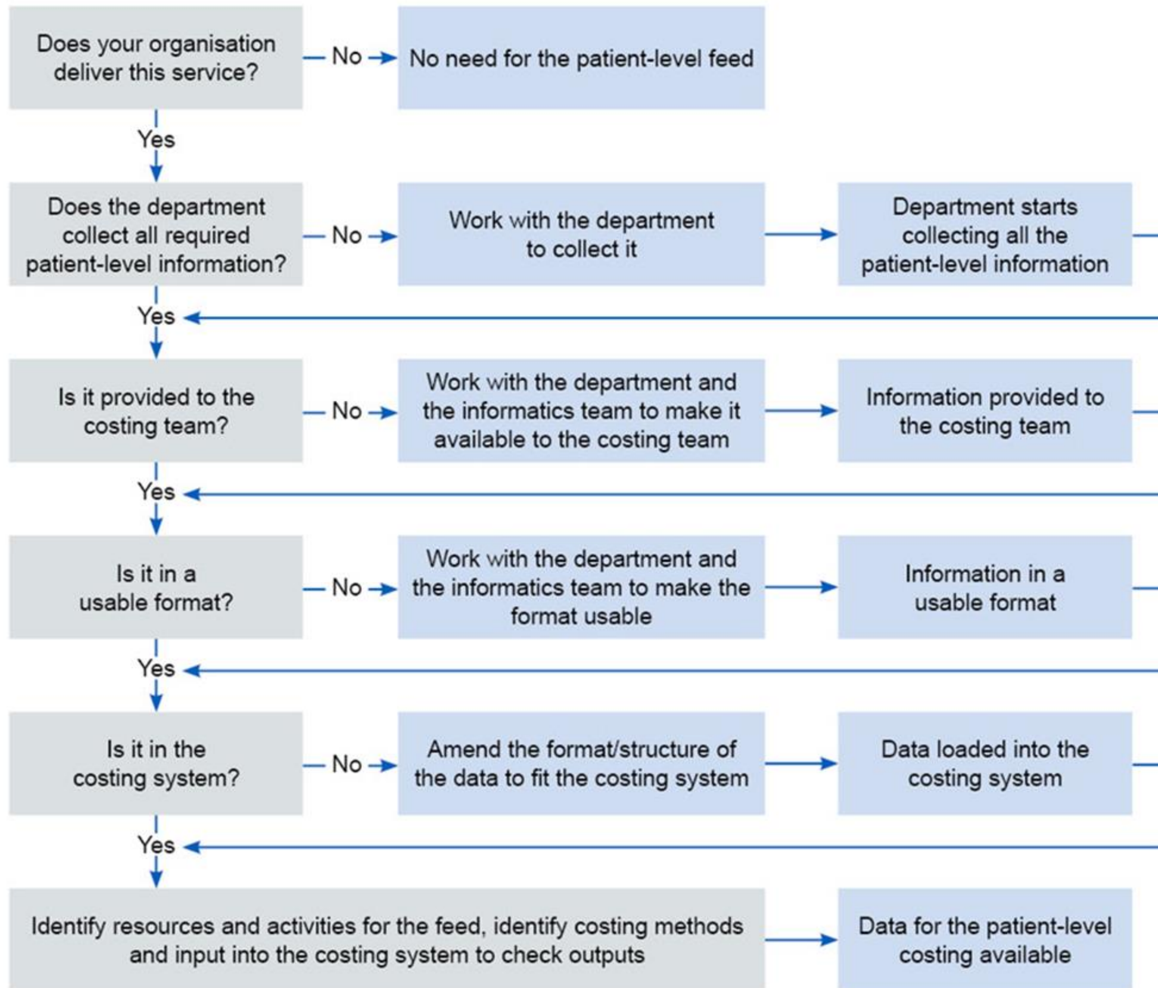
Integrated information requirements

Feed number	Feed letter	Feed name	Data source	Description	Supporting information link
				Standardisation Committee for Care Information (SCCI) web pages. The ISN required that maternity information systems must be fully conformant with the standard by 1 November 2014. Maternity service providers must collect data locally from 1 November 2014, and central submissions started from 1 June 2015 (for April 2015 data).	sets/maternity-services-data-set#how-do-i-submit-the-data-

Appendix 2: Establishing data quality improvement measures



Appendix 3: Making data available for costing



Contact us:

costing@improvement.nhs.uk

NHS England and NHS Improvement
Wellington House
133-155 Waterloo Road
London
SE1 8UG

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