

CORPORATE HEALTH INFORMATION PROGRAMME

ADMITTED PATIENT CARE NATIONAL DATABASE DATA VALIDITY STANDARDS

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1. PURPOSE

The purpose of this document is to outline an approach for monitoring the quality of data submitted to the National Databases by NHS Trusts. This document aims to reappraise the means by which the quality of Admitted Patient Care (APC) data is assessed by establishing a clearly defined set of data completeness and validity indicators and seeks to establish the approach as an appropriate methodology for other centrally managed datasets.

It is proposed that these revised indicators will form the foundations for future data quality performance monitoring and will be used as a basis to highlight specific quality issues in data submitted to PEDW by Welsh NHS Trusts.

This document also examines some wider issues relating to the quality of APC data and the means by which potential problems are relayed to the suppliers and users of the corporate healthcare information stored within PEDW.

2. BACKGROUND

One of the fundamental objectives of the Corporate Health Information Programme (CHIP), as outlined within the Project Initiation Document (PID), is the need to improve confidence in information leading to it being actively used to inform service improvement. An essential component of this aim is the quality of the data that is being used to support decision making within the service.

Admitted inpatient care extracts are submitted to PEDW by NHS Trusts to Health Solutions Wales (HSW) and support the management, commissioning and planning of healthcare services, the evaluation of NHS performance trends and is a valuable source of epidemiological data at both a national and local level. High quality data is essential if it is to be relied upon to support such processes in NHS Wales.

Before proceeding, it is important to outline what is meant by the term 'data quality'.

When assessing data within any dataset, it is important to acknowledge that there are several dimensions to its quality, all of which impact on the usability of the information it represents. These can be summarised as follows¹:

1. **Timeliness**, which is concerned with whether the data has been provided within agreed timescales.
2. **Completeness**, which is concerned with the coverage of the data – i.e. has all the required information been provided?
3. **Validity**, which is concerned with whether the submitted data is valid within the context of the dataset in question – e.g. a date field should only contain a date in the agreed format.

¹ Chris Walker (2007) Data Quality Cluedo [on-line]

Available from: <http://www.finsoft.co.uk/news/media/White%20Paper%20-%20Data%20Quality%20Cluedo.doc>

4. **Accuracy.** Even though the data present in a field may be valid, it is still possible that it does not actually represent an *accurate* record of events. For example, a valid clinical code may be submitted in the primary diagnosis field, but it may be inaccurate because it has been coded incorrectly due to a documentation problem in the patient casenotes.
5. **Precision**, which is concerned with the detail of the data – e.g. is the primary diagnosis coded to the correct number of digits?
6. **Consistency**, which is concerned with whether the data items within all fields provide a consistent picture of the activity it represents. For example, a duration of elective wait may have been submitted for a patient who was admitted as an emergency. Both values are valid, but they do not represent a consistent picture of the activity of a patient. This dimension is also concerned with ensuring that different organisations are providing data and interpreting the rules and data definitions around data provision in the same way.

When addressing the issue of data quality, it is common for only one or two of these dimensions to be taken into account. However, to gain a full understanding of the quality of data, all of the above dimensions need to be considered as a whole, even if this is not always done at the same time.

The individual dimensions of data quality, and how they link, can be demonstrated in the form of a data quality “jigsaw”, whereby the various components of quality checking, whilst valid individually, rightly interlink and join up as part of a single data quality agenda.



The dimensions arguably increase in complexity and detail as one moves from examining the basic dimensions focussed on whether the data is valid and submitted on time, to whether the data actually paints an accurate and consistent picture of the activity it represents.

A programme of Data Accreditation was initiated via the Information Quality Programme in 1999^{2,3}. This comprehensively examined Trust performance across a range of issues relating to the collection, reporting and use of Admitted Patient Care and outpatient data within each organisation. One phase of this process involved the monitoring of all Welsh NHS Trusts against an agreed set of standards to assess the completeness and validity of submitted Trust data. This phase was restricted to PEDW, since it was the only nationally collected patient-based dataset at the time.

² WHC (99) 143

³ WHC (00) 83

All Welsh NHS Trusts successfully achieved the data accreditation standard during 2002 and 2003. However, since the programme was completed there have been no formal processes in place to performance manage the quality of data submitted to PEDW and to ensure any identified problems are addressed within NHS Trusts.

It can also be argued that the development of data quality standards for APC data has been undertaken in an ad-hoc fashion since the formal data accreditation process ended. New indicators have been added to the original data accreditation data quality indicators at the request of various organisations within the service rather than via any formally-agreed processes. This has resulted in a situation where it is unclear as to what data items are being monitored for quality, why they are being monitored and who is responsible for ensuring any errors are corrected.

Recently, there has been a perception that the quality of Trust data is poor and the lack of reliable information, and the limitations this presents to the service, has been cited in a number of reports over the last five years^{4,5,6,7}. This view exists despite considerable effort across numerous organisations to steadily drive up data quality to make it suitable to address the corporate need.

Whilst there is often considerable debate within the service about the impact of poor quality data, such discussions occasionally neglect to specify the precise elements of data quality, detailed above, that may prevent the use of data for evidence-based decision making and service planning. Sweeping statements about data quality that do not incorporate such detail can actually be counter-productive and/or invalid.

Recent work undertaken within the service has now identified that data held within PEDW is “fit for purpose” and will be used for various corporate reports, including QS1 statistics, HRG costing, Trust financial returns and the relevant productivity and efficiency targets⁸. With this in mind, since data quality is the responsibility of the data providers it is essential that a programme of data quality improvement is re-established and maintained within the service in line with the conclusions made in the Data Quality Accountability Framework, which was published by CHIP in August 2006⁹.

In addressing the completeness and validity of submitted data, a planned programme of work can then be initiated to look at the other, more detailed dimensions of data quality for submitted Trust data.

⁴ Derek Wanless (2002) Review of Health & Social Care in Wales. *Welsh Assembly Government*

⁵ Health & Social Care Department (2005) Designed for Life. *Welsh Assembly Government*

⁶ Resources Directorate (2005) Spending by Design. *Welsh Assembly Government*

⁷ Pam Hall (2006) Programme Initiation Document. *Corporate Health Information Programme*.

⁸ WHC (2007) 018

⁹ Pam Hall (2006) Data Quality Accountability Framework. *Corporate Health Information Programme*.

3. THE APPROACH

It is essential that data being used for corporate purposes is deemed “*fit for purpose*”. This fact is applicable to any data that is utilised by the service. However, whilst some datasets are still under development (e.g. outpatient referrals) or are undergoing appraisal to assess whether data retained centrally can be used for corporate purposes (e.g. outpatient activity), the Admitted Patient Care (APC) dataset is clearly defined, well established and has been utilised for corporate reporting for many years.

An approach was therefore developed that focussed on developing a revised list of data completeness and validity standards for APC data that could be used as a measure of the quality of submitted data for corporate uses. Such an approach will establish the principles for application of data quality performance monitoring across other datasets, and will be utilised in the assessment process when determining their suitability for corporate use.

An analysis was undertaken to compare all the data quality/accreditation reports and documentation currently available within the service to determine what data items were being monitored for completeness and validity, how they were being monitored and to whom this information was being reported. This analysis included comparison with the data quality standards utilised in NHS England, as outlined in the Information Governance Toolkit (IGT).

Once identified, a rationale was sought aiming to identify why each data item was being monitored. Where it appeared that quality indicators had been added to those monitored under the original data accreditation programme, clarification was sought as to how these changes were agreed and by whom.

The documented data accreditation standards were also compared with the checks found within Validation at Source (VAS) with a view to determining the levels of commonality between the two quality assurance processes.

A full consultation process was then undertaken, which sought the views of the service including NHS Trusts, Local Health Boards (LHB's), Health Solutions Wales (HSW), Welsh Assembly Government (WAG), Health, Statistics and Analysis Unit (HSA), Business Services Centre (BSC), Delivery & Support Unit (DSU), the Welsh Cancer Intelligence & Surveillance Unit (WCISU) and National Public Health Service (NPHS) as to the revised set of completeness and validity indicators for the Admitted Patient Care (APC) dataset against which all PEDW data would be monitored.

4. FINDINGS

4.1 SUMMARY OF SERVICE CONSULTATION

26 organisations sent comments to CHIP in response to a request for feedback on the draft proposals. A breakdown of those organisations is detailed below:

- 9 Welsh NHS Trusts
- 2 Welsh Local Health Boards
- Health Solutions Wales
- Welsh Assembly Government (DPO, CAT and NPHS)
- The National Leadership and Innovation Agency for Healthcare
- The Delivery & Support Unit
- Welsh Information Governance Standards Board
- South East Wales Regional Commissioning Support Unit
- South East Wales Regional Office
- Business Services Centres
- Welsh Cancer Intelligence and Surveillance Unit
- Informing Healthcare
- Programme Management Unit

The consultation provoked a wide range of responses, but there were some areas where organisations across the service agreed and provided consistent feedback about the proposals. These are summarised below:

- Ten organisations commented on the need to investigate all dimensions of data quality, as outlined in section 2. In particular, many highlighted problems within the service regarding inconsistencies in the way Trusts record information and interpret data definitions and the need to address this problem within any work on data quality, preferably by way of an audit comparing source documentation and processes with the reported data held on the National Database.
- Ten organisations highlighted a need for consistency across the service in relation to the completeness and validity targets that are being set.
- The issue of clinical coding was raised by ten organisations, including four NHS Trusts, all of whom referenced a Welsh Assembly Government target of 99.5% completeness and validity in respect of the annual Trust financial returns (TFR2). This target differs from current national guidelines relating to the timeliness and completeness of clinical coding, which stipulate 95% completeness within three months of the episode end date target for each patient episode. All organisations who raised this issue believed that the percentage targets for completeness and validity should mirror those set elsewhere within the service and recommended that the 3-month

deadline and percentage completeness target for clinical coding should be reviewed.

- Eleven organisations recommended tightening the target percentages for completeness and validity, particularly for key data items such as admission date, discharge date, episode start date, episode end date and NHS number. Several organisations recommended that this rationalisation of the indicators should be used to drive forward quality by raising targets in line with current performance against those targets.
- Three organisations requested that ethnic origin be included in the proposed indicators, stating its importance from both a clinical governance and epidemiology perspective.
- Several Trusts provided detail in relation to their inability to provide specific data items within their minimum datasets due to system or process limitations.
- Comments were received acknowledging the considerable amount of work already undertaken by the service in making improvements to the quality of data sent to the national databases.

4.2 SUMMARY OF FINDINGS

Investigations and discussions revealed seven major documents or reports relating to data accreditation data quality standards for APC data, including a summary of the current standards for NHS England. These are as follows:

- Data Accreditation for Acute Providers in Wales – Version 4.4.
- Information Governance Toolkit (IGT) – NHS England.
- The National Assembly Chief Executives Group (NACE) Report.
- The eWebIndicators¹⁰ online data quality reports.
- WHC (2005) 102 – Core Information Requirements Specification and Standards to Support the LHB Commissioning Process.
- Data Accreditation for Acute Providers – published by the NHS Information Authority (NHSIA) in September 2000.

An analysis of the available reports and documentation was undertaken, which showed clear variation in:

- (1) The indicators being monitored for completeness and validity.
- (2) The methodology around how each data item was being monitored.
- (3) The target required to enable a NHS Trust to pass the data accreditation standard.

¹⁰ <http://eproducts.wales.nhs.uk/Webindicators/>

A summary of these findings is presented in Annex 1, which lists the currently available documentation and the data accreditation indicators listed within each document or report.

Health Solutions Wales (HSW) was able to confirm that the data quality of key data items was regularly discussed at the PEDW Supplier and PEDW Steering Group meetings. These meetings have since been discontinued, to be replaced by the Secondary Care Information Steering Group (SCISG). However, it was within these original meetings that subsequent changes to the data items being monitored, and the means by which performance against them was reported, were amended with the agreement of NHS Trusts, HSW and end-user organisations of PEDW data such as the Business Services Centre (BSC), Health Statistics & Analysis Unit (HSA) and Welsh Cancer Intelligence & Surveillance Unit (WCISU).

Closer investigation of the individual data accreditation data quality indicators found several data items were being monitored for which little justification could be found. There were two main reasons for this:

- (1) It was unclear how a particular data item would be of corporate use to the service (e.g. operation status, which was originally included to ensure alignment with NHS England).
- (2) A data item within the APC data was actually populated using locally-agreed codes for which there was no defined standard (e.g. commissioner serial number, which was also originally included to ensure consistency with NHS England).

There are ongoing discussions within the service as to the practicalities of collecting and reporting the data item "ethnic origin". However, the NHS Centre for Equality and Human Rights has advised that the content of the data item and the manner in which it should be collected will be mandated via WHC and DSCN within the next few months. It is therefore proposed that a check for completeness and validity *should* be included within the indicators, with any changes made to its structure mirrored in the validity checks once they have been agreed.

Within the various data accreditation data quality reports, there were eight indicators relating to clinical coding information. Only one of these indicators was in line with the current coding practice of ensuring all clinically coded information relating to inpatient or daycase episodes was coded within three months of the episode end date. An additional primary diagnosis clinical coding target was required as the SaFF target differed from the original target outlined within Data Accreditation. Other clinical coding targets were added at the request of the service.

Performance against the data accreditation data quality indicators was found to be reported within two principal reports:

- 1) The NACE (National Assembly for Wales Chief Executives Group) report was developed in accordance with stage 3 of the original data accreditation process, which required the assessment of the data quality of Trust data outputs. In its current form, it provides a monthly summary report detailing performance against some, but not all, of the data accreditation data quality indicators. Whilst this report is published on HOWIS, it is not formally presented at any all-Wales groups or meetings.

The NACE Group no longer exists and has been superseded by the Lead Chief Executives Meeting, which incorporates policy leads from Welsh Assembly Government.

- 2) eWebIndicators is an online portal maintained by HSW and accessible to anyone who can access the Health of Wales Information Service (HOWIS). It presents a range of information, including data quality reports that incorporate the data accreditation data quality indicators. It also presents quality analysis of a range of data items that lie outside of the current data accreditation data quality indicators list.

A further report, the Clinical Coding Data Quality Report, is reported on HOWIS and is also a regular agenda item at the all-Wales Clinical Coding User Group (CCUG) meetings. This report provides a more detailed breakdown of specific elements of clinical coding and is used to promote and support inter- and intra-organisational dialogue within the clinical coding discipline.

Validation at Source¹¹ (VAS) is an online facility that enables Trusts to validate their dataset extracts prior to their submission to the NHS Wales Data Switching Service (NWDSS). The service went live for APC data in July 2003, originally focussing on the data accreditation data quality checks. Since its implementation, it has expanded considerably both in terms of the datasets covered (outpatients and critical care are now included in its scope) and the actual VAS errors reported within it.

Investigation of VAS found it to contain a far broader scope of quality checks on submitted APC data when compared to the data accreditation data quality indicators. Whilst the extent to which NHS Trusts use VAS to correct invalid data is still under investigation, this broader scope was considered good practice, as it encouraged Trusts to correct all incorrect data items, not just those being monitored for completeness and validity at a national level.

It was found that Trusts can make a request to Health Solutions Wales (HSW) to deactivate specific VAS checks. This may be done where there is a known problem with a specific data item that may be beyond the control of the Trust. For example, a Trust administration system may not be able to document a particular data item or there may be known technical issues preventing the correct reporting of a specific data item. In these instances, the flagging of many thousands of errors for each

¹¹ <http://nwdss.hsw.wales.nhs.uk/VASS/default.aspx>

submission may discourage use of VAS as the error files returned to NHS Trusts identifying invalid records would be extremely large.

Trusts may also request new VAS checks, should they consider one to be appropriate. Such changes can be made for all Trusts, with agreement sought at an appropriate all-Wales forum, or on an individual Trust basis.

Both processes are not formalised in any way and there are no formal contractual agreements between HSW and Trusts to document the addition or deactivation of individual VAS checks.

To submit APC data into the National Database it must be signed off within VAS. It is apparent that this is not necessarily undertaken by the member of staff with responsibility for data quality within NHS Trust organisations.

5. CONCLUSIONS

The proposal is that a single, standardised set of data quality indicators should be adopted for submitted APC data. These indicators will be for completeness and validity only and will be applied to all data loaded into PEDW by Welsh NHS Trusts. Since the *current* set of data accreditation data quality indicators could not be thoroughly verified, a revised list has been developed based on discussions and investigations into which data items within the APC dataset are of real corporate value to the service or are being used for performance monitoring purposes by the service (e.g. the productivity and efficiency indicators, or “core measures¹²”).

The full, revised list of data completeness and validity indicators for APC submitted data is shown in Annex 2.

A number of data items previously monitored in one or more of the various data accreditation data quality reports (e.g. NACE, eWebIndicators) should not be included within the revised list of data quality indicators. These indicators are listed within Annex 4, along with details of why it was felt that each data item should not be monitored for completeness and validity.

It is accepted that any revised set of data quality indicators for APC data may not be an exhaustive list and are subject to change. It is likely that, as a dataset develops and new healthcare initiatives are introduced, it may be necessary to add (or remove) quality checks to ensure all data items that are of corporate use to the service are fully represented by any data quality performance monitoring. The corporate need is one that is not set in stone, but continually changing. The indicators must be flexible to incorporate any future changes also.

It is also acknowledged that further investigation will be required to assess performance in relation to the other data quality dimensions in order to obtain a more complete picture of the quality of submitted APC data. It will also be necessary to apply similar detailed analyses to other national datasets once they have completeness and validity indicators associated with them. This will initially be

¹² <http://howis.wales.nhs.uk/sites3/home.cfm?orgid=407>

undertaken by CHIP with a view to establishing processes that can be followed by other organisations when monitoring the quality of data they submit to all the national databases.

Since the term 'data accreditation' is used to describe a wide range of measures used to examine Welsh Trusts' relationships with the data they collect and report, it is recommended that the term be dropped for the purpose of monitoring the quality of submitted APC data. As the data accreditation process is no longer operating nor funded in its original form, it was felt that the monitoring of completeness and validity by way of a set of '*Data Validity Performance Indicators*' is more appropriate.

When comparing the proposed data validity indicators with those currently in place in NHS England, there are a total of ten differences, either in terms of the actual data items being monitored or the methodology behind how they are monitored. These differences and the reasoning behind them are outlined in Annex 3.

It is felt that the clinical coding components to the data quality indicators should all be amended to take the national three-month deadline for completing the clinical coding record of an inpatient/daycase episode into account. NHS Trusts are still expected to continue to submit all APC activity to the National Database each month, whether it is in coded or uncoded form. This deadline solely relates to the clinical coding elements of a patient episode. The six-week data quality check should remain in place but only reported within Validation at Source (VAS). There should be no time element to the indicators that are associated with fields that are not related to clinical coding.

The reporting of performance against the recommended standards should be standardised to ensure consistency and to prevent confusion within the service as to what data items are being monitored. Reports that provide analysis on Trust performance against the data quality standards should include the agreed data validity standards only. Whilst it is acknowledged that there may be other data quality reports that are used within other forums (e.g. the Clinical Coding Data Quality report), these reports may not necessarily be used to escalate data quality problems with NHS Trusts. All such reports should be accessible via a single intranet page on HOWIS – eWebIndicators.

VAS should retain its broader scope in relation to checking the quality of submitted data. However, only the data validity indicators should be used as a measure of performance in relation to submitted APC data. A separate report highlighting the total VAS errors allowed through to the national database may be included in the regular reports, with a summary of the detail underpinning the errors.

Whilst individual Trust activation or deactivation of specific VAS checks is not considered best practice, it is recommended that this practice be allowed to continue at present, since it is accepted that large VAS error files may discourage its use as a data validation tool. However, a formalised approach of agreeing to the activation or deactivation of individual indicators should be explored, whereby Trusts can make a request to HSW to temporarily switch on/off a specific indicator, but that the rationale

behind such a decision is agreed with the Trust and any affected end-users of the data and a staged action plan to address the problem adopted by the affected Trust. The 'sign-off' process within VAS should be investigated further and processes established to ensure an appropriate member of staff signs off the monthly submitted APC extracts. This would ensure that the organisational lead for data quality is aware of all data quality issues highlighted by VAS.

The NACE report should be renamed to reflect the changing nature of both the data quality indicators being monitored and the destination of the final report. It should be instated as an agenda item at the all-Wales LHB and NHS Trust Chief Executive meetings.

Finally, in light of the feedback from the service relating to clinical coding, it is recommended that a review be undertaken to reassess the three month deadline for the completion of clinical coding for Admitted Patient Care episodes. The review should also consider the need to tighten the percentage target for completeness and validity of clinically coded episodes, as a Welsh Assembly target of 99.5% completeness is specified for the annual Trust financial returns (TFR2)¹³. It is imperative that any review is undertaken using the principles outlined in the information governance process, and is subject to the identification of an appropriate project sponsor¹⁴.

6. RECOMMENDATIONS

In summation the following recommendations are suggested, and timescales around the achievement of these recommendations are included within Annex 5:

- 6.1 A single, standardised set of data quality indicators for completeness and validity should be adopted for submitted Admitted Patient Care data. These are detailed in Annex 2.**
- 6.2 Data validity indicators that apply to clinical coding information should be amended to reflect the national three-month deadline Trusts currently adhere to when completing the clinical coding of inpatient and daycase episodes.**

It is acknowledged that this target differs to the one outlined in the HRG Costing Guidance issued by the Welsh Assembly Government in respect of the annual Trust financial returns (TFR2)¹³. However, the 99.5% completeness target outlined within that document has not been subject to the information governance process. It is proposed that the agreed standard for clinical coding remains at 95% completeness three months after episode end date, and this will be used for any coding-related completeness and validity checks until a time when a change is formally agreed with the service.

¹³ Nigel Gaen (2006) HRG Costing Guidance 2005-06. *Welsh Assembly Government*

¹⁴ WHC (2006) 083

- 6.3** The reporting of performance against these targets should be standardised so that both the online reporting tool (eWebIndicators) and the published report (NACE or its equivalent) only report the data validity indicators. All the data quality reports, including the Clinical Coding Data Quality Report, should be accessible via the eWebIndicators suite on HOWIS, ensuring all reports relating to data quality can be easily accessed from a single resource.
- 6.4** Validation at Source (VAS) should retain its broader scope in relation to the checking of data quality of submitted Admitted Patient Care data.
- 6.5** Further work should be undertaken to formalise the deactivation and activation of specific VAS checks at the request of NHS Trusts.
- 6.6** A further piece of work should be undertaken to investigate the processes involved within Trusts relating to the signing off of monthly Admitted Patient Care data within VAS.
- 6.7** The NACE report should be renamed to reflect the changing nature of data quality performance monitoring of submitted APC data. A title of 'Data Validity Performance Monitoring Report' is suggested as a working title. It should be reinstated as an agenda item at the all-Wales LHB and NHS Trust Chief Executive meetings.
- 6.8** A formal review should be undertaken to reassess the three month deadline for the completion of clinical coding for Admitted Patient Care episodes. The review should also consider the need to tighten the percentage target for completeness and validity of clinically coded episodes. The review should be undertaken using the principles outlined in the information governance process and is subject to the identification of an appropriate project sponsor.

The Advisory Group are asked to:-

- Endorse the recommendations within Section 6.
- Approve the timescales, included within Annex 5.

Annex 1

COMPARISON BETWEEN AVAILABLE DATA ACCREDITATION / DATA QUALITY DOCUMENTATION AND REPORTS

| Data Quality Indicator (% Valid & Complete) | Proposed Data Validity Indicators for APC Data | Welsh Data Accreditation Standards | English Data Accreditation Standards | NACE Report | eWebIndicators | Date Decided To Admit Indicators | WHC (2005) 102 |
|---|--|------------------------------------|--------------------------------------|-------------|----------------|----------------------------------|----------------|
| % Administrative Category Code | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ |
| % Admission Date | ✓ | ✓ | ✓ | ✓ | ✓ | | |
| % Admission Method Code | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ |
| % Blank Date Decided to Admit | | | | | | ✓ | |
| % Blank or Invalid Date Decided to Admit | | | | | | ✓ | |
| % Code of Commissioner/Purchaser | | | | | ✓ | | ✓ |
| % Coded Greater Than the First Position | | | | | ✓ | | |
| % Coded Principal Procedure | | | | | ✓ | | |
| % Consultant Code | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ |
| % Consultant Code Active | | | | | ✓ | | |
| % Date of Birth | ✓ | ✓ | ✓ | ✓ | ✓ | | |
| % Date Decided to Admit = Admission Date | | | | | | ✓ | |
| % Date Decided to Admit = Duration of Elective Wait | | | | | | ✓ | |
| % Date Decided to Admit is Day Before Admit Date | | | | | | ✓ | |
| % Decided to Admit Date | ✓ | ✓ | ✓ | | | | ✓ |
| % Decided to Admit Date [11] | | | | ✓ | | ✓ | |
| % Decided to Admit Date [12] | | | | ✓ | | ✓ | |
| % Decided to Admit Date [13] | | | | ✓ | | ✓ | |
| % Discharge Date | ✓ | ✓ | ✓ | ✓ | ✓ | | |
| % Discharge Destination Code | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ |
| % Discharge Method Code | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ |
| % Duration of Elective Wait (DEW) | ✓ | | | | | | |
| % End Date (Augmented Care Period) | | | ✓ | | | | |
| % Episode End Date | ✓ | ✓ | ✓ | ✓ | ✓ | | |
| % Episode Start Date | ✓ | ✓ | ✓ | ✓ | ✓ | | |
| % Ethnic Group | ✓ | ✓ | ✓ | | ✓ | | ✓ |

Continued...

| Data Quality Indicator (% Valid & Complete) | Proposed Data Validity Indicators for APC Data | Welsh Data Accreditation Standards | English Data Accreditation Standards | NACE Report | eWebIndicators | Date Decided To Admit Indicators | WHC (2005) 102 |
|--|--|------------------------------------|--------------------------------------|-------------|----------------|----------------------------------|----------------|
| % Healthcare Resource Group (HRG) Code | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ |
| % Intended Management | ✓ | ✓ | ✓ | ✓ | ✓ | | |
| % Last Episode in Spell Indicator | ✓ | ✓ | ✓ | ✓ | ✓ | | |
| % Legal Status | ✓ | | | | ✓ | | ✓ |
| % Local Health Board/Area of Residence | ✓ | | | ✓ | ✓ | | ✓ |
| % NHS Number | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ |
| % NHS Number Status Indicator | ✓ | ✓ | ✓ | | ✓ | | |
| % Valid NHS No. and Traced | ✓ | | | ✓ | | | |
| % of Blank Duration of Elective Wait | | | | | | ✓ | |
| % of Duration of Elective Wait = 0 | | | | | | ✓ | |
| % of Duration of Elective Wait = 1 | | | | | | ✓ | |
| % of Duration of Elective Wait > 1 | | | | | | ✓ | |
| % of Duration of Elective Wait = 9998 | | | | | | ✓ | |
| % Operation Status | | ✓ | ✓ | ✓ | ✓ | | |
| % Patient Classification Code | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ |
| % [Valid] Primary Diagnosis | | ✓ | ✓ | | ✓ | | |
| % Primary Diagnosis 6weeks after Episode End Date | | | | | ✓ | | |
| % Primary Diagnosis 3months after Episode End Date | ✓ | | | ✓ | ✓ | | ✓ |
| % Postcode | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ |
| % [Valid] Principal Procedure*** | ✓ | ✓ | | ✓ | ✓ | | |
| % Principal Procedure Date*** | ✓ | ✓ | ✓ | | ✓* | | |
| % Procedure Date** | | | | ✓ | | | |
| % Procedure Dates (non-primary) | | ✓ | | | | | |
| % Procedures (non-primary) | | ✓ | | | | | |
| % Provider Unit Code | ✓ | | ✓ | | | | |
| % Referrer Code | ✓ | ✓ | | | | | |
| % Registered GP Code | | ✓ | | ✓ | ✓ | | ✓ |
| % Registered GP Practice Code | ✓ | | ✓ | | | | |
| % Secondary Diagnosis | | ✓ | | | | | |

Continued...

| Data Quality Indicator (% Valid & Complete) | Proposed Data Validity Indicators for APC Data | Welsh Data Accreditation Standards | English Data Accreditation Standards | NACE Report | eWebIndicators | Date Decided To Admit Indicators | WHC (2005) 102 |
|---|--|------------------------------------|--------------------------------------|-------------|----------------|----------------------------------|----------------|
| % Serial Code | | | | | ✓ | | |
| % Sex | ✓ | ✓ | ✓ | ✓ | ✓ | | |
| % Site Code | ✓ | | | | | | |
| % Source of Admission Code | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ |
| % Specialty Function Code**** | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ |
| % Start Date (Augmented Care Period) | | | ✓ | | | | |

Key

- * Indicator is not specified in eWebIndicators data accreditation data definitions but is reported within the data accreditation data quality reports.
- ** Report doesn't specify whether this indicator relates to primary procedure only or all procedure codes.
- *** The proposed data quality performance indicator incorporates the three-month deadline for clinical coding of inpatient episodes.
- **** Proposed data quality performance indicators will include both the specialty code of treatment and the main specialty of the consultant.

Annex 2

PROPOSED DATA VALIDITY INDICATORS FOR APC DATA

| Data Item / Validity Indicator | Why monitor this data item for quality? | Core Measure* | Target** (% Valid & Complete) |
|--|---|-------------------------|----------------------------------|
| Administrative Category | Enables corporate analysis of activity by patient type – NHS patient, private patient etc. | | 98% |
| Admission Date | Important for spell length of stay and admission rate analysis. Important for resource and service planning (e.g. emergency pressures). | 7, 8 | 98% |
| Admission Method | Important for resource, service and workforce planning. Used as a gauge to monitor seasonal activity and emergency pressures. Essential for Trusts when reporting SITREPS. This data item forms part of the criteria used by HRG Grouper Version 4 to derive a HRG code for a clinically coded inpatient episode. | 1, 2, 3, 4, 5, 7, 8, 14 | 98% |
| Consultant Code | Used for consultant specific analysis from PEDW. Impacts on national monitoring of consultant performance against the consultant contract. | | 98% |
| Date of Birth | Essential for calculating age-based indicators. Used in epidemiology studies looking at incidence of diseases within various age groups. Also used in the tracing and validation of the NHS number. | | 98% |
| Decision to Admit Date | Used for the calculation of waiting times. Of significant political importance. | | 98% |
| Discharge Date | Important for spell length of stay and discharge rate analysis. Also used in delayed discharges analysis. | 7, 8 | 98% |
| Discharge Destination | Needed for service and healthcare planning and is also used for investigation impact of inpatient/daycase activity on tertiary services. This data item forms part of the criteria used by HRG Grouper Version 4 to derive a HRG code for a clinically coded inpatient episode. | | 98% |
| Discharge Method | Provides an indication of the outcome of care and is used for epidemiology | | 98% |
| Duration of Elective Wait | Important tool when undertaking analysis of waiting times for elective admissions. | | 98% |
| Episode End Date | Used to determine length of episode. | 1, 2 | 98% |
| Episode Start Date | Used to determine length of episode. | 1, 2 | 98% |
| Ethnic Group | Important for clinicians epidemiology studies. Enables service and healthcare planning within ethnic groups. | | 98% |
| HRG Code 3 Months After Episode End Date | Used for costing analysis of inpatient and daycase activity. Fundamental component of Trust end-of-year financial (TFR2) returns, which are now derived from PEDW. | 14 | 95% |
| Intended Management | Central component to service planning. Indicates planned treatment intent for admitted patient. Data item is compared with patient classification to determine whether the intended management was carried through (elective patients only). | 1, 2, 3, 4, 5, 6, 7, 8 | 98% |
| Last Episode in Spell Indicator | Important for calculation and analysis of readmission rates. | | 98% |
| Legal Status | Enables analysis and research into activity undertaken on patients within the mental health environment. | | 98% |
| Local Health Board of Residence | Enables LHB-based epidemiology and activity analysis. Essential for service planning and commissioning. | 1, 2, 3, 4, 5, 6, 7, 8 | 95% |

Continued...

| Data Item / Validity Indicator | Why monitor this data item for quality? | Core Measure* | Target** (% Valid & Complete) |
|--|---|------------------------|----------------------------------|
| Main Specialty (consultant) | Affects clinical audit data and assignment of the patient to a healthcare agreement. Important for service, healthcare and workforce planning and is central to the commissioning process. This data item forms part of the criteria used by HRG Grouper Version 4 to derive a HRG code for a clinically coded inpatient episode. | All | 98% |
| NHS Number | If incorrect, activity may be assigned to the wrong health record. Central to the information healthcare (IHC) and Individual Health Record (IHR) projects. | | 95% |
| NHS Number Status Indicator | Important field for ensuring the validity of the NHS number is maintained and validated. | | 95% |
| NHS Number Valid & Traced | Provides a check on the validity and accuracy of the patient's NHS number. | | 95% |
| Patient Classification | Important for identifying types of admission. Used in conjunction other fields for high-level corporate activity analysis. | 1, 2, 3, 4, 5, 6, 7, 8 | 95% |
| Postcode | Essential for epidemiology studies and resource allocation investigation. Provides detailed information as to the geographical incidence of disease. | | 98% |
| Principal Diagnosis 3 Months After Episode End Date | Essential information for clinicians and epidemiology. Essential for most healthcare analysis of secondary care activity. | 14 | 95% |
| Principal Operation Code 3 Months After Episode End Date | See 'Principal Diagnosis'. | 5, 6, 3 | 95% |
| Principal Operation Date | Important for a complete clinical record. | 5, 6 | 95% |
| Provider Code | Enables activity analysis by the organisation responsible for providing the patient care. Important for service and workforce planning and the commissioning process. | | 98% |
| Referrer Code | Important for service and healthcare analysis and planning. Used to identify referral rates for within admitted patient care. | | 98% |
| Registered GP Practice Code | Ensures that communication is sent to the correct GP. Also enables corporate analysis of admitted patient activity at GP practice level. Important for epidemiology and cross-border commissioning. | | 98% |
| Sex | Used for epidemiology studies and also used in the tracing and verification of the NHS number. | | 98% |
| Site Code (of Treatment) | Enables activity analysis by the site actually providing the patient care. Important for service and workforce planning and the commissioning process. | All | 98% |
| Source of Admission | Needed for service and healthcare planning. Essential for the monitoring of inter/intra-Trust transfers and births. This data item forms part of the criteria used by HRG Grouper Version 4 to derive a HRG code for a clinically coded inpatient episode. | | 98% |
| Specialty of Treatment Code | Affects clinical audit data and assignment of the patient to a healthcare agreement. Important for service, healthcare and workforce planning and is central to the commissioning process. This data item forms part of the criteria used by HRG Grouper Version 4 to derive a HRG code for a clinically coded inpatient episode. | All | 98% |

* Indicates the productivity and efficiency core measure whose calculation the data item is involved in.

** The targets have been derived using the current NACE and eWebIndicators reports. There has been no tightening of the target percentages required to successfully pass the quality standard for each data item.

Annex 3

DIFFERENCES BETWEEN THE PROPOSED DATA VALIDITY INDICATORS FOR NHS WALES AND THOSE MONITORED IN NHS ENGLAND

| Indicator | Included within proposed NHS Wales Data Validity Indicators? | Included within NHS England Data Quality Indicators? | Reason for Difference |
|--|--|--|--|
| Local Health Board of Residence (Area of Residence) | Yes | No | Not monitored within NHS England data accreditation data quality indicators. Commissioning is based on registered GP practice, not postcode. |
| Episode End Date (Augmented Care Period) | No | No | NHS Wales do not record augmented care periods. |
| Episode Start Date (Augmented Care Period) | No | Yes | NHS Wales do not record augmented care periods. |
| Legal Status | Yes | No | Not monitored within NHS England data accreditation data quality indicators. |
| [Valid] Primary Diagnosis | No | Yes | All clinical coding indicators are recommended to incorporate 3-month coding deadline within NHS Wales. |
| Primary Diagnosis 3 Months after Episode End Date | Yes | No | All clinical coding indicators are recommended to incorporate 3-month coding deadline within NHS Wales. |
| Principal Operation Code 3 Months After Episode End Date | Yes | No | All clinical coding indicators are recommended to incorporate 3-month coding deadline within NHS Wales. |
| Referrer Code | Yes | No | Not monitored within NHS England data accreditation data quality indicators. |
| Site Code (of Treatment) | Yes | No | Not monitored within NHS England data accreditation data quality indicators, yet it is felt this provides important extra information to the service in NHS Wales. |

Annex 4**DATA ITEMS THAT WILL NOT BE MONITORED FOR VALIDITY**

The following table lists those data quality indicators that were included in previous data quality monitoring reports or documentation but are not in the proposed list of new data quality performance indicators:

| Indicator | Reason for exclusion from data quality monitoring |
|--|---|
| Date Decided to Admit (11, 12 and 13) | It was felt unnecessary to separate out this field by the three valid elective method of admission codes. A single indicator – 'Date Decided to Admit' – within the data validity indicators is recommended. |
| Healthcare Resource Group (HRG) Code | All coding indicators should be time-related (i.e. 3 months after episode end date). |
| Operation Status | It is unclear as to how this indicator can be of corporate use to the service and it is evident that this field is auto-populated on most Trust patient administration systems when procedure codes are entered into the clinical coding record of an inpatient episode. |
| Principal Diagnosis | All coding indicators should be time-related (i.e. 3 months after episode end date). |
| Principal Diagnosis 6 Weeks After Episode End Date | All coding indicators should be time-related (i.e. 3 months after episode end date). |
| Principal Operation Code | All coding indicators should be time-related (i.e. 3 months after episode end date). |
| Registered GP Code | This field is being replaced by 'GP Practice Code' imminently, therefore validity monitoring of this data item will not be possible under the revised APC dataset, as defined within the data dictionary. |
| [Commissioner] Serial Number | This is a locally-agreed data item, which is agreed between commissioners (e.g. Local Health Boards) and providers (e.g. NHS Trusts). Since no defined standard exists for its structure, it is not considered a suitable data item for quality monitoring. Feedback from NHS Trusts indicated that it is of little use locally in terms of reporting and analysis. |

Annex 5

PROPOSED IMPLEMENTATION PLAN

| Recommendation Number | Finding | Recommendation | Timescales |
|-----------------------|---|--|----------------|
| 6.1 | Multiple reports and documents relating to data accreditation/data quality for Admitted Patient Care information, all of which differ in terms of the indicators they report and the way they monitor them. | A single, standardised set of data quality indicators for completeness and validity should be adopted as a measure of data quality for submitted Admitted Patient Care data. | September 2007 |
| 6.2 | Clinical coding data accreditation quality indicators that measure completeness and validity as at submission date and at six weeks after episode end date. Current coding guidelines give Trusts three months to complete the clinical coding record for an inpatient/daycase episode. | <p>Data validity indicators that apply to clinical coding information should be amended to reflect the national three-month deadline for 95% completeness Trusts currently adhere to when completing the clinical coding of inpatient and daycase episodes.</p> <p>It is acknowledged that this target differs to the one outlined in the HRG Costing Guidance issued by the Welsh Assembly Government in respect of the annual Trust financial returns (TFR2)¹³. However, the 99.5% completeness target outlined within that document has not been subject to the information governance process. It is proposed that the agreed standard for clinical coding remains at 95% completeness three months after episode end date, and this will be used for any coding-related completeness and validity checks until a time when a change is formally agreed with the service.</p> | September 2007 |

| Recommendation Number | Finding | Recommendation | Timescales |
|-----------------------|--|--|----------------|
| 6.3 | Several different data accreditation/data quality reports are produced, which present differing information. Reports found in several different places. | The reporting of performance against these targets should be standardised so that both the online reporting tool (eWebIndicators) and the published report (NACE or its equivalent) only report the data quality indicators. All the data quality reports, including the Clinical Coding Data Quality Report, should be accessible via the eWebIndicators suite on HOWIS, ensuring all reports relating to data quality can be easily accessed from a single resource. | December 2007 |
| 6.4 | Validation at Source (VAS) provides broader scope in terms of the data quality checks it reports. | Validation at Source (VAS) should retain its broader scope in relation to the checking of data quality of submitted Admitted Patient Care data. | n/a |
| 6.5 | Ad-hoc, informal approach to the activation or deactivation of VAS checks by Trust. | Further work should be undertaken to formalise the deactivation and/or activation of specific VAS checks at the request of NHS Trusts. | December 2007 |
| 6.6 | It is unclear as to who should be signing off submitted Admitted Patient Care information. | A further piece of work should be undertaken to investigate the processes involved within Trusts relating to the signing off of monthly Admitted Patient Care data within VAS. | December 2007 |
| 6.7 | The NACE Group (National Assembly for Wales Chief Executives Group) report provides a monthly summary report detailing performance against some, but not all, of the data accreditation indicators. Whilst this report is published on HOWIS, it is not formally presented to any all-Wales groups or meetings. The NACE Group no longer exists. | The NACE report should be renamed to reflect the changing nature of data quality performance monitoring of submitted APC data. A title of 'Data Quality Performance Monitoring Report' is suggested as a working title. It should be reinstated as an agenda item at the all-Wales LHB and NHS Trust Chief Executive meetings. | September 2007 |

| Recommendation Number | Finding | Recommendation | Timescales |
|-----------------------|---|---|--------------|
| 6.8 | Feedback was received from the service stating that there is a discrepancy between the current national completeness target and deadline for clinical coding when compared to the demands placed on the service by the Welsh Assembly Government for the annual Trust financial returns (TFR2), which require 99.5% completeness within three months of year end. All recommended that the current standards should be tightened or reviewed. | A formal review should be undertaken to reassess the three month deadline for the completion of clinical coding for Admitted Patient Care episodes. The review should also consider the need to tighten the percentage target for completeness and validity of clinically coded episodes. The review should be undertaken using the principles outlined in the information governance process and is subject to the identification of an appropriate project sponsor. | To be agreed |