CORPORATE HEALTH INFORMATION PROGRAMME

ADMITTED PATIENT CARE ACTIVITY

DATA CONSISTENCY STANDARDS

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Document History

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1.1	04/03/2008	Updated to acknowledge and incorporate feedback from service	No
2.0	24/04/2008	Updated following comments from CHIP Assurance Group in March 2008	No

Approvals

This document requires the following approvals:

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1.   PURPOSE

The purpose of this document is to further develop the revised 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 consistency of Admitted Patient Care (APC) data is assessed by establishing a clearly defined set of data consistency standards for the APC dataset.

In addition to the data validity standards already developed for APC data, these indicators will help provide a more complete understanding of the quality of submitted data across NHS Wales, and will form a firm foundation on which to develop similar standards for other national datasets.

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.

NHS Trusts submit APC data extracts to the Patient Episode Database of Wales (PEDW), which is managed by Health Solutions Wales (HSW). This data supports the management, commissioning, costing 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.

In the document *"Admitted Patient Care National Database – Data Validity Standards"*, a fresh approach to the issue of data quality was developed. The document identified six dimensions of data quality, which can be summarised in the form of a data quality "jigsaw". A representation of this is outlined to the right.

In order to fully understand and interpret the quality of submitted data, all six dimensions must be considered.
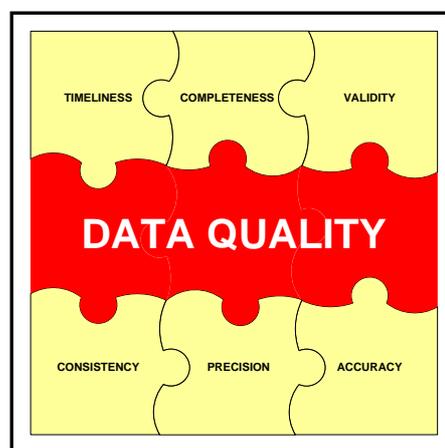
A set of data validity indicators have been developed and introduced for APC data[1]. A methodology for addressing the other dimensions is required, thus further enabling NHS Wales to effectively identify and address all data quality issues within the

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[1] WHC (2008) 007 - **Admitted Patient Care (APC) Data Validity Standards for Data Submitted to the Patient Episode Database for Wales (PEDW)**

The **validity** of data refers to whether the submitted information/data has been provided in the agreed format and, where applicable, whether it is populated with a nationally-agreed value.

The **consistency** of data refers to whether *related* data items within the same dataset are consistent with one another.

service. Whilst it is important to understand the degree of validity of submitted APC data, it is essential that further monitoring tools are made available so that the degree of consistency of submitted data can be understood.

Within both the APC dataset there are a range of data items that are related, which can be compared to one another. For such related data items, the presence of a specific value in one field can restrict the value(s) that can be recorded in another. This can be effectively demonstrated with the data items 'primary diagnosis' and 'sex' in the APC dataset. If a patient episode is submitted with a 'primary diagnosis' that indicates the patient gave birth, it is not consistent or accurate for the 'sex' of the patient to include a code that indicates the patient was male. It is these sorts of comparative checks that this document seeks to propose.

3.   THE APPROACH

An approach was developed that focussed on developing a set of data consistency standards for APC data that could be used as an additional measure of the quality of submitted data.

Research was undertaken to explore whether any similar monitoring processes were in place for data submitted to the National Databases and to determine what documentation, if any, was currently available within the service that addressed issues of data consistency. This research included a comparison with any such standards or reports utilised in NHS Scotland and NHS England, as outlined in the Information Governance Toolkit (IGT).

A series of discussions were then organised with the service, including Health Solutions Wales (who are currently contracted to provide the reporting tools that enables the service to monitor against any agreed standards), which aimed to determine whether consistency checking and reporting was possible and, if so, how such checks could be applied to submitted Trust data and what those checks should be.

A set of *Data Consistency Indicators* were then developed for APC data.

Discussions also took place with the aim of determining whether such indicators could be incorporated into Validation at Source (VASS) in order to allow NHS Trusts to identify and correct inconsistent records at the point of submission of their data.

The proposed indicators were then distributed to the service for comment, with opinions being sought from 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).

The service was asked to provide comment on the suitability of the indicators and of their overall use in monitoring the quality of APC data.

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4.   FINDINGS

4.1 SUMMARY OF SERVICE CONSULTATION

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

- 4 Welsh NHS Trusts
- 2 Welsh Local Health Boards
- Welsh Assembly Government
  - Service Delivery & Performance Management Directorate
  - Financial Information Strategy Development (FIS)
  - Head of Information Standards
- National Leadership and Innovation Agency for Healthcare (NLIAH)

All the feedback was supportive of the general approach being taken. The feedback received is summarised below:

- Four responses highlighted the fact that the proposals, in their current form, do not specify in detail how each consistency check will work. This would be essential in order to ensure the check is operating correctly and is abiding by appropriate data definitions.

- One Trust, Pembrokeshire & Derwen NHS Trust, stated that whilst they were supportive of the proposals as they would help raise the profile of data quality within the organisation, they did have concerns that their implementation may require additional resources to cope with the extra validation that Trusts may be required to undertaken, stating that such resources may not be locally available at the present time.

- NLIAH queried whether it would be more appropriate to carry out these checks at the point of data entry, thus neglecting the need for a comprehensive range of VASS checks.

- One Trust noted that some data quality checks have been introduced that compare the reported activity in the Referral To Treatment (RTT) returns with activity levels within PEDW.

4.2 SUMMARY OF FINDINGS

Investigations revealed little in the way of data consistency checking for data submitted to the national databases in NHS Wales. A range of documents and reporting tools have been developed over the course of the last seven years, which have predominantly focussed on the need to ensure that data submitted is in a valid format. These were predominantly developed to support the Data Accreditation programme, which took place during 2002/03 with a view to securing a long-term improvement in data quality in NSH Wales.. Those documents are:

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- 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.
- Data Accreditation for Acute Providers in Wales – Version 4.4.
- The Information Governance Toolkit (IGT) – NHS England[2].
- The eWebIndicators online data quality reports[3].
- Validation at Source (VASS)[4].
- The National Assembly Chief Executives Group (NACE) Report.

Of those reports and tools above, some checks for data consistency on APC data can be found in Validation at Source (VASS), the NACE report and eWebIndicators software. These are few in number and were developed at the request of the service following the publication of 'A Guide to Good Practice – Elective Services'[5] for the purposes of monitoring the quality of PEDW data in respect of waiting times for patients admitted electively.

Where data consistency checks on APC data could be found, there was no identifiable or related national standard. The checks were added to the data quality validation and reporting tools for the sole purposes of enabling data providers to clearly identify *potential* errors with their data. These changes were discussed and agreed 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)

5.   CONCLUSIONS

The proposal is that a set of data consistency standards should be adopted for submitted APC data. These indicators will be applied to all data loaded into the PEDW national database by Welsh NHS Trusts and Powys LHB. All the data consistency checks will be carried out on the un-standardised data submitted to PEDW and have been developed with the assistance of Health Solutions Wales

A summary of the proposed data consistency standards for APC data are shown in Annex 1.

It should be noted that the detailed logic behind each indicator is not outlined in Annex 1 and will be developed once approval has been gained for the standards in principle. This detail will be shared with appropriate groups such as the Information Leads, Secondary Care Information Steering and Clinical Coding User Groups for final approval.

A percentage target for consistency will be applied to each check. This has been based on the percentage target for data validity for the data items that make up the data consistency check. Where there was a different target percentage for validity

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[2] https://www.igt.connectingforhealth.nhs.uk/
[3] http://eproducts.wales.nhs.uk/Webindicators/
[4] http://nwdss.hsw.wales.nhs.uk/VASS/
[5] http://howis.wales.nhs.uk/sites3/Documents/484/GGP%20Elective%20Care.pdf

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for the data items that made up the check, the lowest data validity target for the associated data items was used as the target for data consistency. The targets for data validity were originally based on the Data Accreditation targets for data validity and van be viewed in full in the document '*Admitted Patient Care National Database – Data Validity Standards*'.

A number of possible data consistency checks were considered unnecessary following consultation with the service, as it could not be determined that the checks would be of great value and/or it was considered inappropriate to include them in the final proposals due to data definitional issues. Additionally, in development of the logic for each check, it was deemed that some were unsuitable for further development. These are outlined in **Annex 2** along with the reasons for their rejection.

VASS should be updated to incorporate the agreed standards, thus enabling data providers to clearly identify and correct inconsistent data at the earliest opportunity possible. The VASS checks for data consistency will only be undertaken on those records where the fields being queried by a specific check contain valid values (i.e. the record has passed the data validity VASS checks for the data items concerned). This will ensure the prevention of duplicate reporting of errors within VASS (i.e. a record appearing in both the VASS data validity and consistency checks for a specific data item).

It is possible that the implementation of the data consistency indicators for APC data in VASS will have a significant impact on HSW in terms of the amount of time it may take to process submitted APC data. With this in mind, a phased approach to their implementation *may* be required. The current redevelopment of VASS, which is being undertaken in response to the data validity standards for APC data, has resulted in the deletion and rationalising of a number of checks, which may mean that such a phased implementation is not required. However, there is currently insufficient evidence to be certain whether this will be the case. The need (or lack of) for this approach will be determined during development of the VASS checks for data consistency.

It is essential that Welsh NHS Trusts ensure that checks similar, if not identical, to the data validity and consistency checks in VASS are developed and maintained within their local Patient Administration System (PAS). The presence of in-built validation rules in PAS would mean that such checking can be carried out automatically at the point of data entry, thus ensuring that additional resources are not wasted in correcting data at a later date. An example of such a rule could be an error warning that notifies the user that they have entered an admission date onto a record that is before the patient's date of birth.

It is accepted that any revised set of data quality indicators (for either validity or consistency) for submitted 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 of significance are fully represented by any data quality performance

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monitoring. Such significance is not set in stone, but is continually changing and the indicators must also be flexible enough to incorporate any future changes.

The reporting of performance against the proposed indicators should be undertaken via the eWebIndicators web portal. This is in line with previous recommendations, which stress the need to report issues of data quality through a single and consistent resource. A "*Data Consistency Report*", similar to the Data Validity Performance Monitoring Report, should be developed and should be made available for appropriate senior all-Wales meetings and forums.

Whilst the data consistency checks will be applied to any data supplied to PEDW by English Trusts (via the Secondary Uses Service (SUS)), the reporting and monitoring arrangements described will focus on data from supplied from Welsh NHS Trusts and Powys LHB only.

6. RECOMMENDATIONS

In summary the following recommendations are made, and timescales around the achievement of these recommendations are included within **Annex 3**:

6.1 A set of data quality indicators for *consistency* should be adopted for submitted Admitted Patient Care (Annex 1).

The detailed logic behind each indicator will be developed once approval has been gained for the standards in principle. This detail will be shared with appropriate groups such as the Information Leads, Secondary Care Information Steering and Clinical Coding User Groups for approval.

6.2 The reporting of performance against these targets should be standardised so that the reporting of data validity and data consistency is clearly distinguishable in both the online reporting tool (eWebIndicators) and any published reports. These reports should be presented and reported in a similar format as those developed for the *Data Validity Indicators*, thus ensuring a common approach and presentation to the reporting of data quality within the service.

All the data quality reports should be accessible via a single data quality "portal", thus ensuring access to the necessary reports is made easier for interested parties.

6.3 Validation at Source (VASS) should be further enhanced to incorporate the data consistency indicators in order to allow Trusts to identify and correct any affected records. The software should allow the user to easily distinguish between data validity and data consistency errors.

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6.4   Welsh NHS Trusts and Powys LHB should ensure that validation checks for data validity and consistency are built into PAS so that errors can be identified and corrected at the point of data entry.

The Assurance Group are asked to:-

- Endorse the recommendations in Section 6.
- Approve the timescales documented in **Annex 3**.

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Annex 1

PROPOSED DATA CONSISTENCY INDICATORS FOR ADMITTED PATIENT CARE DATA

The following table outlines the data consistency indicators that are proposed. The logic outlines the general reasoning as to the use of such a check and should not be regarded as a complete description of the check itself.

#	Data Item 1	Data Item 2	Logic	Core Measure[†]	Target (% Consistent)
1	Admission Date	Date of Birth	i.e. Admission Date < Birth Date is invalid.	1, 2	98%
2	Admission Method	Duration of Elective Wait	If the 'Method of Admission' is not elective, the 'Duration of Elective Wait' should be 9998. If elective, a valid 'Duration of Elective Wait' should be present in the record.	1, 2, 3, 4, 5, 6, 7, 8	98%
3	Admission Method	Intended Management	Intrinsically linked fields (e.g. the presence of emergency 'Admission Method' code means only an '8' can be present in the 'Intended Management' field.)	1, 2, 3, 4, 5, 6, 7, 8	98%
4	Admission Method	Patient Classification	Linked fields. The presence of certain 'Admission Method' codes restricts the codes allowable in 'Patient Classification' field.	1, 2, 3, 4, 5, 6, 7, 8	95%
5	Admission Method	Source of Admission	Linked fields. The presence of specific 'Admission Method' codes restricts the codes allowable in the 'Source of Admission' field.	1, 2, 3, 4, 5, 6, 7, 8	98%
6	Consultant Code	Main Specialty (consultant)	Consultant specialties that the consultant works under are submitted to HSW when Trusts register consultant codes. The submitted 'Main Specialty (consultant)' code should relate to the specialty under which the consultant is registered by the British Medical Association and should be recorded on the HSW lookup tables. The presence of inconsistent data would infer a problem with either local documentation or a failure to update the national lookup tables.		98%
7	Discharge Method	Discharge Destination	Fields are linked (e.g. if 'Discharge Method is '4 – patient died', the 'Discharge Destination' must be '79 – not applicable'.		98%
8	Discharge Method	Discharge Date / Date of Birth	If the 'Discharge Method' = 5, the 'Date of Birth' should equal the 'Discharge Date'.	7, 8	98%
9	Discharge Method	Specialty (of Treatment)	If the 'Discharge Method' = 3 then the 'Specialty (of Treatment)' must be a mental health specialty.	1, 2, 4, 5, 7	98%
10	Episode End Date	Episode Start Date	i.e. Episode End Date < Episode Start Date is invalid.	1, 2	98%
11	Episode End Date	Admission Date	i.e. Episode End Date < Admission Date is invalid.	1, 2, 5, 7, 8	98%
12	Episode End Date	Discharge Date	i.e. Episode End Date > Discharge Date is invalid.	7, 8	98%
13	Episode End Date	Date of Birth	i.e. Episode End Date < Birth Date is invalid.		98%
14	Episode Start Date	Admission Date	i.e. Episode Start Date < Admission Date is invalid.	1, 2, 3, 4, 5, 6, 7, 8	98%
15	Episode Start Date	Discharge Date	i.e. Episode Start Date > Discharge Date is invalid.	1, 2, 3, 4, 5, 6, 7, 8	98%
16	Episode Start Date	Date of Birth	i.e. Episode Start Date < Birth Date is invalid.	3, 4, 5, 6, 7, 8	98%
17	HRG Code 3 Months After Episode End Date	Sex	The HRG coding should be consistent with a person's sex. For example, a female should not have a HRG code of 'Penis Disorders' L40.	6	95%

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#	Data Item 1	Data Item 2	Logic	Core Measure[†]	Target (% Consistent)
18	Last Episode in Spell	Episode End Date = Discharge Date	If 'Last Episode in Spell Indicator' = 1, then 'Episode End Date' should be the same as the 'Discharge Date'.		98%
19	Legal Status	Specialty (of Treatment)	Where 'Specialty (of Treatment)' is mental health then 'Legal Status' should <> '98'.	1, 2, 4, 5, 7	98%
20	Patient Classification	Discharge Date – Admission Date (i.e. LOS)	These are records that are daycases but have length of stay greater than one day. Records will be flagged as invalid where the 'Patient Classification' is 2 and the derived hospital spell length of stay is greater than 0.	1, 2, 3, 4, 5, 6, 7, 8	95%
21	Postcode	Local Health Board of Residence	Check to ensure that the submitted 'Postcode' lies within the boundaries of the submitted 'Local Health Board of Residence'.		95%
22	Principal Operation Date	Episode Start Date and Episode End Date	Operation Date should lie between the 'Episode Start Date' and 'Episode End Date'.	5, 6	95%
23	Primary Diagnosis Code 3 Months After Episode End Date	Source of Histological Diagnosis	If ICD-10 cancer code is present on a record then the 'Source of Histological Diagnosis' should be 1, 2 or 9.	6	95%
24	Primary Diagnosis Code 3 Months After Episode End Date	ADM Date – Birth Date (Age)	When principal diagnosis = Z38% (i.e. a birth episode) then the derived age should be less than 1. Additionally, other ICD-10 codes may be specific to certain age groups.	6	95%
25	Primary Diagnosis Code 3 Months After Episode End Date	Histological Diagnosis	If ICD=10 cancer code is present then a 'Histological Diagnosis' code should also be present. Furthermore, certain ICD-10 codes can only be associated with a specific range of morphology codes. This check will also search for such inconsistencies here as well.	6	95%
26	Primary Diagnosis Code 3 Months After Episode End Date	Sex	Vital data item for epidemiology studies. Consistency check checks for invalid diagnoses being recorded in the National Database (e.g. male patients diagnosed with cervical cancer). A complete list of incompatible codes will be drawn up with the assistance of the Clinical Coding Tutor for Wales.	6	95%
27	Primary Procedure Code 3 Months After Episode End Date	Sex	Vital data for epidemiology studies. Consistency check prevents invalid procedures being recorded in the National Database (e.g. male patients undergoing a hysterectomy).	3, 5, 6	95%
28	Referrer Code	Referring Org Code	A check to ensure that the 'Referrer Code' is registered to the submitted 'Referring Organisation Code'.		98%
29	Specialty (of Treatment)	Sex	Ensures activity is not recorded under the incorrect 'Specialty (of Treatment)' code (e.g. male episodes in the specialty of obstetrics).	1, 2, 4, 5, 7	98%

A data consistency indicator will check whether related data items within the same dataset are consistent with one another.

* Indicates that expert advice will be required to determine what codes can be built into a specific check – e.g. advice from the Clinical Coding Tutor for Wales with regards to which diagnosis codes cannot be recorded against patients of a certain gender.

[†] Indicates which core measure[6] one (or more) of the data items in the associated data consistency check are linked to. The core measures (or Productivity & Efficiency indicators) are a range of indicators that outline the performance of NHS Trusts against a series of performance measures and are calculated using specific elements of the APC data held on PEDW. These measures are set determined by the Welsh Assembly Government and are reviewed on an annual basis. Current performance can be referenced via eWebIndicators.

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Annex 2

DATA CONSISTENCY INDICATORS CONSIDERED INAPPROPRIATE

Data Item 1	Data Item 2	Logic	Reason for exclusion from proposed indicators
Admission Method	Primary Diagnosis Code 3 Months After Episode End Date	Specific diagnostic codes should be limited to a particular 'Admission Method' – e.g. maternity admissions.	It was felt that the linkage between primary diagnosis and 'Admission Method' was not strong enough to justify the inclusion of this check.
Birth Date (mother)	Date of Birth	For all delivery episodes, the 'maternity trail' should be fully documented within the APC extract. These two fields should equal each other.	Maternity tail of PEDW poorly populated. Was felt that the value of this check could not be justified. Potential for development of a maternity data set being explored within WAG.
Consultant Code	Specialty (of Treatment)	Consultant specialties that the consultant works under are submitted to HSW when Trusts register consultant codes. The submitted 'Specialty (of Treatment)' code should reflect the actual specialty under which the patient care is being delivered and should be recorded on the HSW lookup tables. If this not recorded on the HSW lookup tables, this infers a problem with either local documentation or a failure to update the national lookup tables.	Only the 'Main Specialty (consultant)' is linked to a specific consultant. Activity under 'Specialty (of Treatment)' can be submitted against a consultant. Therefore, this check is not possible.
Date Decided To Admit Status	Admission Method	The percentage of records where the 'Date Decided to Admit Status' is consistent with the 'Admission Method'	Check not considered to be of genuine value to end-users of PEDW data.
Discharge Date	Discharge Destination	If the 'Discharge Date' was blank, the 'Discharge Destination' should equal '98'.	These checks assume that discharge information should not be populated on episodes that are not the discharge episode. Current data dictionary guidance is not explicit with regards to how such data should be recorded and so CHIP felt such an indicator would not be possible at this time.
Discharge Date	Discharge Method	If the 'Discharge Date' was blank, then the 'Discharge Method' should equal '8'.	
GP Practice	Match Derived GP Registered LHB	GP practice LHB area should be the same as derived registered GP LHB.	'Derived GP Registered LHB' is a derived field. It is the opinion of CHIP that the data consistency checks should be focus on submitted Trust data only.
Primary Diagnosis Code 3 Months After Episode End Date (Dagger & Asterisk Check)		Within ICD-10, there are certain asterisk codes that should never be used alone and must be associated with a corresponding dagger code.	Dagger and asterisk codes can appear in both the primary and secondary coding positions. Only primary diagnosis is monitored for data validity, therefore it was felt inappropriate to implement this check. Furthermore, it would be extremely difficult to develop the check from a technical perspective due to the potential number of dagger & asterisk/coding position combinations.
Record Type (33)	Date of Birth / Admission Date	If 'Record Type' = 33 (i.e. newborn baby), the 'Date of Birth' should equal the 'Admission Date'.	Unnecessary check – a consistency check for newborn babies will be picked up via check #25.
Admission Date - DTAD	Duration of Elective Wait	The difference between the 'Admission Date' and the 'Date Decided to Admit' should equal the 'Duration of Elective Wait' for all elective episodes of care. Discrepancies indicate a data entry or reporting issue.	There are ongoing data definitional concerns around the population of Duration of Elective Wait and a lack of agreement across Wales in terms of what is the most appropriate data item to compare it with – i.e. Date Decided to Admit or Waiting List Date. It has therefore been decided not to carry forward this check at the present time.

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<div align="right">**Annex 3**</div>

PROPOSED IMPLEMENTATION PLAN

Recommendation	Finding	Recommendation	Timescales
6.1	There are little in the way of data consistency checks for APC data submitted to PEDW. Some checks for data consistency on APC data can be found in Validation at Source (VASS), the NACE report and eWebIndicators software.	A set of data quality indicators for *consistency* should be adopted for submitted Admitted Patient Care (see Annex 1).	11th December 2008 (CHIP AG) 1st April 2009 (Mandated)
6.2	Some checks for data consistency on APC data can be found in Validation at Source (VASS), the NACE report and eWebIndicators software. There are presently no formalised mechanisms for monitoring and reporting data consistency.	The reporting of performance against these targets should be standardised so that the reporting of data validity and data consistency is clearly distinguishable in both the online reporting tool (eWebIndicators) and any published reports. These reports should be presented and reported in a similar format as those developed for the *Data Validity Indicators*, thus ensuring a common approach and presentation to the reporting of data quality within the service. All the data quality reports should be accessible via a single data quality "portal", thus ensuring access to the necessary reports is made easier for interested parties.	Jan / Feb 2009* [NACE Report] Jan / Feb 2009* [eWebIndicators]
6.3	Validation at Source (VASS) contains a small number of data consistency checks, as agreed via the PEDW Supplier and PEDW Steering Group meetings, now replaced by the Secondary Care Information Steering Group (SCISG).	Validation at Source (VASS) should be further enhanced to incorporate the data consistency indicators in order to allow Trusts to identify and correct any affected records at the time of submission. The software should allow the user to easily distinguish between data validity and data consistency errors.	Jan / Feb 2009
6.4	Validation checks for data validity and consistency should be built into PAS to enable the validation of errors at point of data entry.	Welsh NHS Trusts and Powys LHB should ensure that validation checks for data validity and consistency are built into PAS so that errors can be identified and corrected at the point of data entry.	-

* The timescales stated are subject to change depending on agreement being reached between Welsh Assembly Government and Health Solutions Wales as to the authorisation and prioritisation of the development work required to support the introduction of the APC data consistency indicators and their associated reporting and monitoring tools (e.g. VASS).

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