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Data Quality

Abertawe Bro Morgannwg University Health Board

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The people who delivered the work were Gareth Lewis and Paul Cunningham.

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Summary report

Summary

1. The NHS in Wales uses information as an integral part of its approach to delivering health services. Operationally, NHS bodies are highly reliant on electronic information systems to support a range of key activities including:

- patient administration, scheduling and booking;
- diagnostic processes, ordering tests, requesting and viewing results;
- joining primary and secondary care pathways, sharing potentially lifesaving critical patient information;
- effective financial management and enable management of productivity;
- providing the best patient care based on accurate clinical and demographic details; and
- identification and achievement of clinical and business outcomes.

2. Information used to support management and healthcare delivery is only reliable if the quality of the underpinning data is sound. NHS Wales Informatics Service (NWIS) identifies six core elements that affect data quality which are timeliness, completeness, validity, consistency, precision and accuracy. While it is rarely possible to ensure data is 100 per cent correct, 100 per cent of the time, it is critical that health bodies have appropriate and effective data quality arrangements in place to minimise clinical risk, support effective operational delivery and management, and to underpin performance management and Health Board assurance processes.

3. In 2008, the Corporate Health Information Programme (CHIP) undertook a review across the former NHS Trusts to assess the data quality arrangements. The report identified a range of varying practices, and made a number of recommendations to improve arrangements. The Ministerial Letter (EH/ML/007/08) issued in September 2008 included formal recommendations for all NHS Trusts and Local Health Boards. The work of the CHIP now forms part of NWIS. While NWIS have not formally followed up the original report, they continue to co-ordinate and monitor the validity of key data.

4. As part of its work to review NHS bodies' arrangements for ensuring efficient, effective and economical use of resources, the Wales Audit Office has examined data quality arrangements at Health Boards in Wales. The Wales Audit Office has designed this review with input from NWIS and we are undertaking the review at all Health Boards and NHS Trusts in Wales.

5. Whilst this review is not a direct follow-up of the 2008 Ministerial recommendations, we have sought to incorporate each of these areas into our review work. The audit has therefore examined:

- governance and accountability arrangements relating to data quality;
- data quality operational arrangements, including local responsibilities, processes, procedures and policy and approaches for internally monitoring and reporting the effectiveness of data quality processes; and
- data quality performance.

6. In carrying out the work, we have reviewed key relevant documentation and reports, and undertaken a series of interviews with a range of staff. We have also undertaken a data analysis exercise to identify the extent of duplicate patient records in and between the main Patient Administration System (PAS) and the Radiology Information Systems, RADIS and RadCentre, as an indicator of the effectiveness of data quality arrangements. This review has focussed on data quality arrangements for the Health Board's own data, and therefore does not consider data quality arrangements for primary care datasets.

7. This review set out to identify whether Abertawe Bro Morgannwg University Health Board (the Health Board) has effective data quality arrangements.

8. Our conclusion is that: the Health Board has adequate data quality arrangements; however, our data analysis indicates varying degrees of effectiveness for ensuring consistent data accuracy.

9. We reached this conclusion because:

- data quality governance and management arrangements are in place, but assurance arrangements could be strengthened further;
- the data quality policy and processes are generally appropriate; and
- our data analysis shows a mixed picture in terms of data quality accuracy.

Recommendations

10. To help the Board move forward, we have provided the following recommendations:

Data quality assurance

R1 Introduce an annual report on data quality to provide organisational level assurance to the Board, which covers the effectiveness of arrangements in place to ensure data quality, and that meets both national and local data needs.

R2 Ensure that Information Governance arrangements are efficient, effective and appropriately include data quality:

- ensure that accountability structures and the respective responsibilities of all staff for Data Quality are clearly communicated and understood by all;
- monitor and periodically review the Health Board's Data Quality Governance arrangements to ensure they are effective.

Data quality process

R3 Update the Data Quality Policy so that the policy:

- covers all aspects of the Health Board including primary care and locally defined data quality needs;
- identifies how the Informatics Strategy and Governance Board co-ordinates and provides data quality assurance to a formal committee of the Board or the Board itself; and
- defines the role and responsibility of the Data Quality Manager.

Duplicate patient demographic data

R4 Reduce inappropriate duplicate patient demographic data within key systems (such as PAS, RADIS, RadCentre and others) and promote the consistent use of NHS numbers and patient identifiers

Data quality governance and management arrangements are in place, but assurance arrangements could be strengthened further

Executive level accountabilities have been defined

11. It is important that senior managers continue to promote the improvement of data quality where information is used to support corporate performance management, clinical and management decision-making, and service delivery. Ultimate accountability for data quality rests with the Health Board, but with delegated responsibilities shared between the following executive officers:

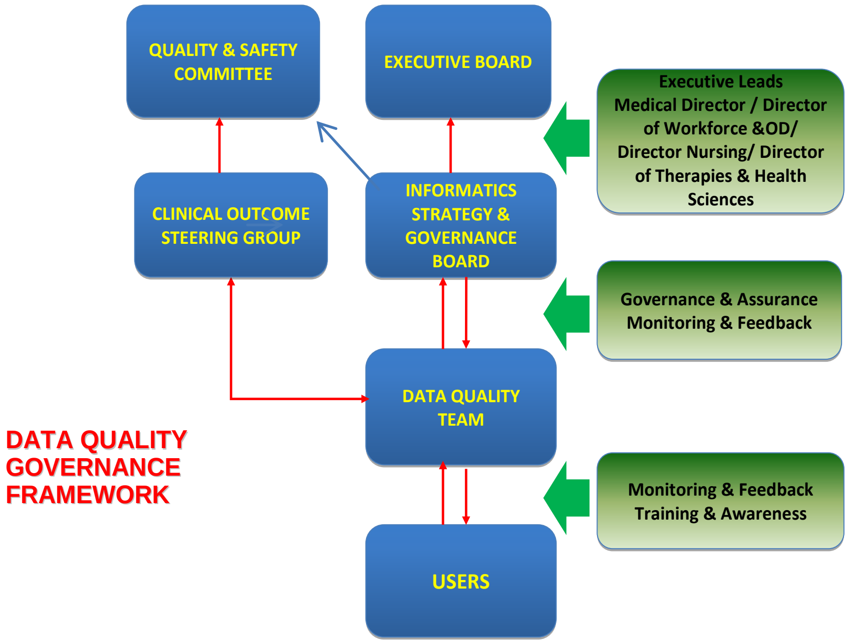
- Director of Workforce and Organisational development who is responsible for the accuracy and relevance of corporate data; and
- Medical Director, Director of Nursing and the Director of Therapies and Health Sciences, who are jointly responsible for the accuracy and relevance of data captured by clinical staff within the organisation during the course of treating patients.

12. It is a strength that there is wide ‘ownership’ of the importance of data quality at an executive level, and particularly that this covers senior staff in clinical and business disciplines. However, this brings with it the need to mitigate any risk that issues could be missed because managers are unsure where to report or escalate issues. To overcome this, the Health Board will need to continue to ensure that accountability and responsibility are clearly communicated, and understood by all involved in data quality.

The well-defined governance framework would be strengthened by more formal Board level assurance reporting

13. The Health Board has established a well-defined governance framework for data quality (Exhibit 1).

Exhibit 1: Health Board Data Quality assurance framework



Source: Abertawe Bro Morgannwg University Health Board

14. The key roles of the main groups within this framework (as identified in the Data Quality Policy) are as follows:

- The Quality and Safety Committee provides the Health Board with advice regarding the quality and integrity, safety and security, and access and use of personal data to support high quality healthcare. The Quality and Safety Committee is also responsible for gaining assurance that information is created, collected, stored, kept safe, disseminated, shared, used and disposed of appropriately and in line with policies and legislation. These functions are requirements of the Welsh Government.
- The Informatics Strategy and Governance Board (ISGB) has responsibility for providing governance and assurance for data quality by promoting good practice in relation to data quality and monitoring performance against national and local data quality standards. This group reports to the Executive Board, supporting an executive-level focus on data quality as well as to the Quality and Safety Committee, where there is a potential for issues identified to affect patient care.

- The Clinical Outcome Steering Group (COSG) has responsibility for scrutinising key clinical outcome data on behalf of the Quality and Safety Committee. Part of this includes assessing the reliability of data.

15. The Data Quality Team is responsible for monitoring patient data quality and completeness and identifying any problems that may arise. The team is responsible for maintaining daily checks, completing and correcting data on the Health Board's Patient Administration System (PAS) and alerting managers to any urgent issues identified.

16. The committees, groups and boards within the framework have appropriate terms of reference, which cover a number of issues relevant to data quality. Our work indicates that the Informatics Strategy and Governance Board, in particular, maintains an important focus on data quality issues. As part of its agenda, the group receives regular reports on data quality validation and Clinical Coding performance information, and authorises required actions to remedy or improve arrangements. However, the Informatics Strategy and Governance Board is resource intensive, consisting of up to 40 attendees. As well as the large size of this group, our 2011 structured assessment work identified a potential risk that the distinction between strategic and operational decision-making could become blurred with current arrangements. Despite this, our recent observations of the ISGB in action have indicated an openness and willingness to work together by those staff attending which goes some way towards mitigating this risk.

17. The Data Quality Policy does not identify how the Informatics Strategy and Governance Board will co-ordinate and provide data quality assurance to a formal committee of the Board. While there is routine operational reporting of data quality to the ISGB, there is also no annual data quality assurance report. In 2008, the previous Minister for Health and Social Services recommended that Health Boards should commission a formal annual report on data quality to the Board, to ensure that there is a focus on continuous improvement. Therefore, whilst there is a well-defined overall governance framework for data quality, arrangements would be strengthened by more formalised board level assurance reporting on data quality.

Appropriate data quality roles and responsibilities are in place

18. The Health Board has established a number of roles and responsibilities covering data quality. A Corporate Information and Data Quality Manager is in post who manages the Data Quality Team. It is noted, however, that the role of the Corporate Information and Data Quality Manager is not defined within the Health Board's Data Quality Policy.

19. The Data Quality Team is adequately resourced for its purposes, consisting of the Data Quality Manager, two data quality co-ordinators, two information assistants, an information officer, and an information clerk.

20. In addition, to help ensure that standards are maintained throughout the organisation, the Health Board has introduced data quality leads in each directorate. Their roles include reviewing data quality performance reports for their own area and working with the Data Quality Team to resolve specific issues and improve data quality performance.

21. Job descriptions appropriately include data quality requirements for all staff who work with health records. Staff interviewed within the acute sector indicated a general commitment to improving data quality and were clear of their own roles and responsibilities. It is less clear, however, whether the same formality of roles and responsibilities exist and are effective for information used by the Health Board but which rests with others, such as in community and primary care environments.

The data quality policy and processes are generally appropriate

The data quality policy identifies key requirements but its scope does not clearly cover primary care information, which the Health Board increasingly relies upon

22. The purpose of a data quality policy is to define the standards that a Health Board expects to achieve, identify roles and responsibilities, ensure that a mechanism exists to identify and resolve risks, and to provide required assurance of effectiveness of arrangements. In 2010, the Informatics Strategy and Governance Board approved the Data Quality Policy; this was also ratified by the Executive Board. The policy covers most of the key themes required to manage and improve data quality, including:

- principles and definitions;
- policy scope;
- responsibilities (staff and groups);
- governance framework;
- processes (monitoring/reporting); and
- requirement to provide assurance reports,

23. Although the Data Quality Policy includes the requirement to provide assurance reports, it does not demonstrate how the Health Board will receive these. An annual report to the Board would provide this assurance, and the necessity to produce such a report should be stated within the policy.

24. The policy has been published on the Health Board intranet site and the Data Quality Team have also been in contact with Directorates and Departments to ensure all staff are aware of the policy. The data quality leads previously mentioned have the opportunity to be influential in promoting the Data Quality Policy throughout the organisation.

25. Whilst the policy applies to all staff that input patient information into secondary care or community patient based systems, as primary care informatics is largely supported by NWIS, it only acknowledges primary care data quality in minor detail.

26. As health models modernise under the framework of 'Setting the Direction', there will be increasing reliance on joined up outcome and activity performance information across primary, community and acute settings. Therefore, the Health Board needs to ensure that primary and community information is as robust as acute data. This was recognised in a recent management response to internal audit recommendations. In this the Health Board identified a range of actions to improve data quality at an acute level, but only a very limited number of the actions were focussed on primary care data quality as this remains the responsibility GPs with the support of NWIS.

The Health Board has appropriate processes and procedures to meet national data quality standards

27. It is important that the Health Board has appropriately defined processes and procedures which set the standards for ensuring good data quality. Processes are in place to help meet national validation standards. For example, the Health Board has a detailed procedure to identify errors in the records of admitted patients, take action to remedy the error, and prevent it happening again.

28. Appropriate documented processes are in place to ensure that local data quality needs are met, for patient administration data and data used by the Health Records Service. To help further improve procedures and processes, the Health Board created a Process Improvement Group in 2011. This is an informal group whose remit is to create and appropriately document data quality processes. At the time of our fieldwork, the group was establishing its terms of reference.

29. The Data Quality Team carries out a number of data validity and quality checks, in order to maintain a high level of data quality throughout the Health Board. There are effective arrangements to ensure the quality of data submissions to the Welsh Government. The informatics team:

- Uses Validation At Source (VAS) reporting to check and test data prior to submission to central government. In addition, the Health Board use CHKS electronic monthly reports to support data analysis. This helps to identify anomalies and prioritise the key areas where data quality may require addressing.
- Is developing a validation Database for A&E and PAS data, which will enable automated feedback to identify any data anomalies.
- Uses Patient Episode Database Wales (PEDW), data that supports validation, for example, of NHS numbers and Health Board names.

30. A Clinical Coding Audit Programme is in place and monitored at coding supervisor meetings. These Clinical Coding audits are carried out for individual coders for all coders across the Health Board sites prior to Personal Development Review (PDR) meetings.

31. An audit undertaken by the coding service (late 2011) on 100 episodes coded in Singleton and Morriston hospitals highlighted that 73 of the records had an accurate primary diagnosis. A high percentage of the errors related to the lack of a discharge summary at the time of coding. The Health Board has acted appropriately by introducing a backlog team to the Morriston site as well as establishing methods to raise data quality awareness across the coding service, as outlined in a paper presented to the Quality and Safety Committee on 23 February 2012. Subsequently, there has been reported improvement in coding completeness and the Health Board is undertaking work to improve the timeliness and quality of discharge summaries, as reported to the Quality and Safety Committee in August 2012.

The Health Board runs an appropriate range of data quality training, education and awareness activities

32. The Health Board has a range of different approaches to train and support staff to help improve its data quality. These approaches are varied in coverage and scope based on staff need, although the main focus is on the information from the acute sector.

33. The Health Board delivers training to staff to help them undertake operational processes and procedures using the PAS. The Health Board expect staff to continue to have refresher training thereafter as needs arise.

34. As data quality is business critical, it is right that it forms part of induction for key staff, so they are aware of its importance and follow standards of data quality throughout their everyday work. The Health Board includes data quality in induction sessions for relevant informatics staff. However, some staff felt that more could be done to educate primary care staff on the importance of data quality.

35. The Data Quality Team has also developed and delivered presentation sessions for ward receptionist staff, pathway management staff and Morriston Accident & Emergency staff. The team has delivered eight sessions, which were well attended and received by staff.

36. The NWIS run clinical coding specialist training courses for Health Board staff. The NWIS provides Clinical Coding refresher training every three years. If there are any changes within the NHS, or new data standards, then the Health Board hold ‘clinics’ to give updates to staff. Clinical Coding staff are also encouraged to apply for the Accredited Clinical Coding qualification.

37. Some of the ways that the Coding Service has tried to promote and raise awareness of the service and the impact on accuracy of coding within the Health Board include:

- Providing an overview of the coding function as part of the Administrative and Clerical staff induction and the ward receptionist programme, to improve the quality of clinical episode data.
- Publishing news articles on the Health Board Intranet site.
- Highlighting to medical staff any significant issues experienced by the coders, which includes illegible handwriting, poor record keeping and the absence of discharge summaries in the case notes. These issues ultimately affect timing and accuracy of Clinical Coding data quality.

The Health Board responded appropriately to a data quality Internal Audit review

38. Internal Audit carried out a review on data quality, publishing a report in January 2011. An Adequate rating was given. Control objectives reviewed during this audit were drawn from the Ministerial letter EH/ML/007/08. The audit covered a full review of the quality of demographic and clinical data pertaining to four key patient datasets:

- Admitted Patient Care;
- Outpatient Activity;
- Outpatient Referrals; and
- Emergency Department.

39. As a result of the Internal Audit review, the Health Board developed an action plan which has responded suitably to the recommendations, and has reported progress to the relevant committee. As we have identified previously, this response focuses significantly more on the acute activity than on primary and community. As part of this response, the Health Board has now reviewed its data quality validation processes and data quality performance indicators and is in the process of implementing the new arrangements. Internal Audit will be undertaking further reviews relating to data quality in 2012, including referral to treatment times (RTT) data and ward metrics.

Our data analysis shows a mixed picture in terms of data quality accuracy

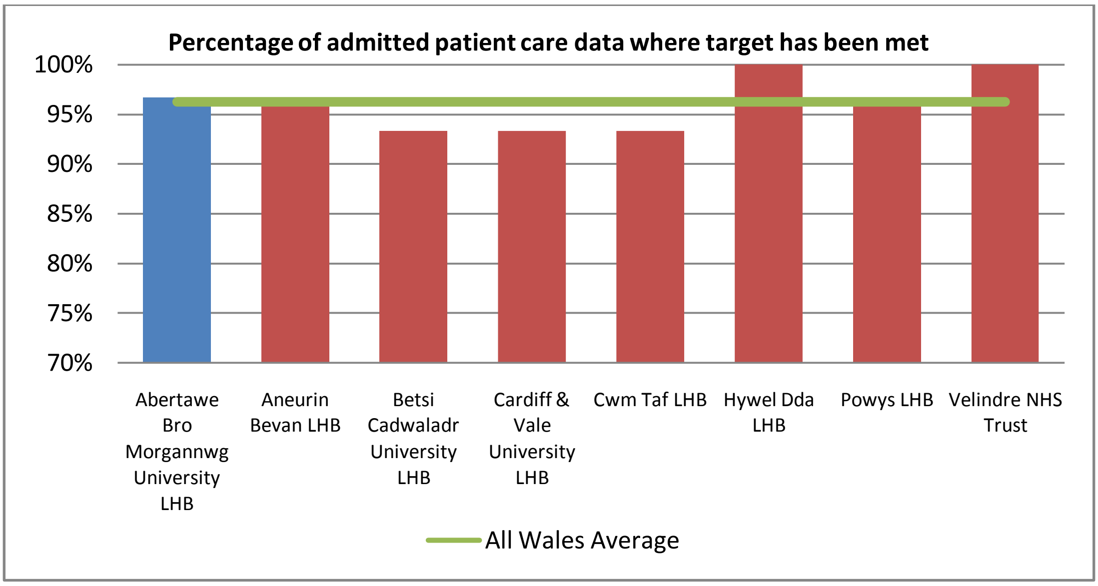
40. Our audit included a review of the Health Board's performance against national data validation targets set by the Welsh Government. We also undertook Computer Assisted Audit Technique (CAAT) analysis of patient demographic data to assess the extent of duplicate entries and entries with no patient identifier. The analysis was performed on the Health Board's PAS (8.5 million records) and RaDIS (5.2 million records) systems.

41. Across Wales, Health Boards submit data to the NWIS who then undertake validity checks. The NWIS communicate the results back to the Health Boards at regular intervals; usually monthly or bi-monthly.

42. We have reviewed the four data validity reports covering the 1 April to 30 November 2011 period. These reports covers admitted patient care, outpatient referrals, outpatient activity and emergency department data. The NWIS reports identify percentage of data items have met the national standards. The information presented in the Exhibits 2 to 5 provides a summary of the NWIS reports and indicates the percentage of the basket of data fields in a set that meet the national target for that indicator.

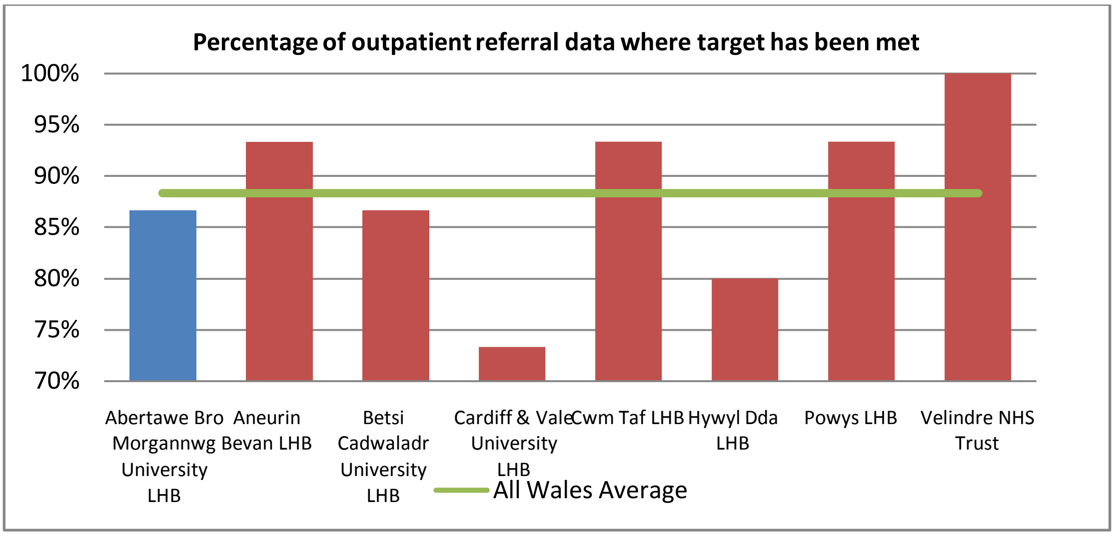
43. Overall, the exhibits indicate that the Health Board is meeting the majority of validity standards and is performing at or above the Wales average. For example, Exhibit 2 indicates that the Health Board meets the national validity targets for 97 per cent of the data items checked within that dataset of admitted patient care. Exhibit 3 shows the Health Board is meeting most (87 per cent) outpatient data set validity standards but performs slightly below the Welsh average. While the Health Board's performance exceeds the Welsh average in three of the four areas, there is room for further improvement.

Exhibit 2: Admitted patient care – dataset validity



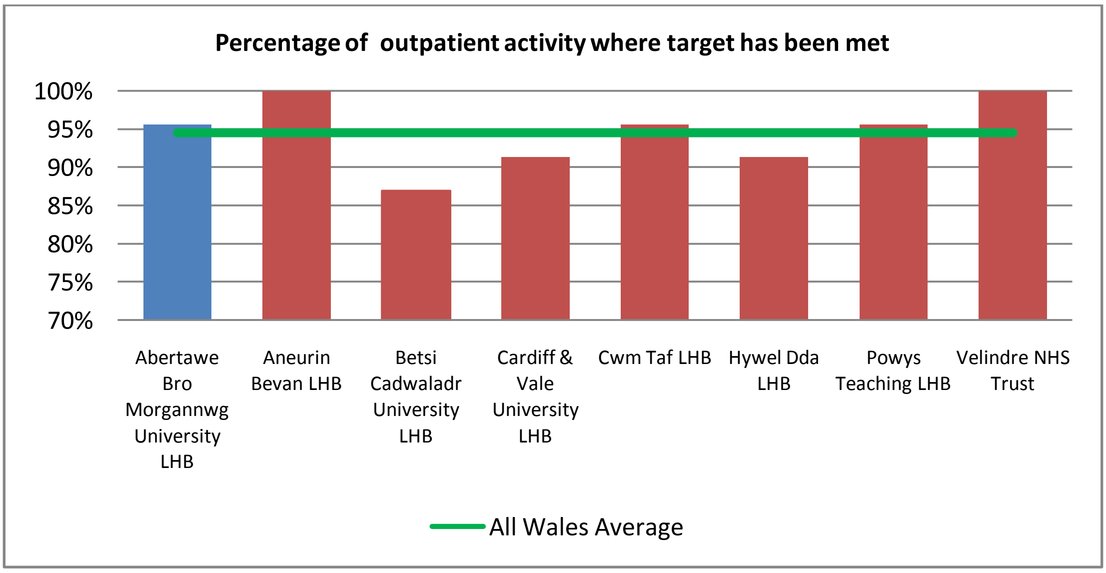
Source: NWIS data validity reports (1 April to 30 November 2011)

Exhibit 3: Outpatient referral – dataset validity



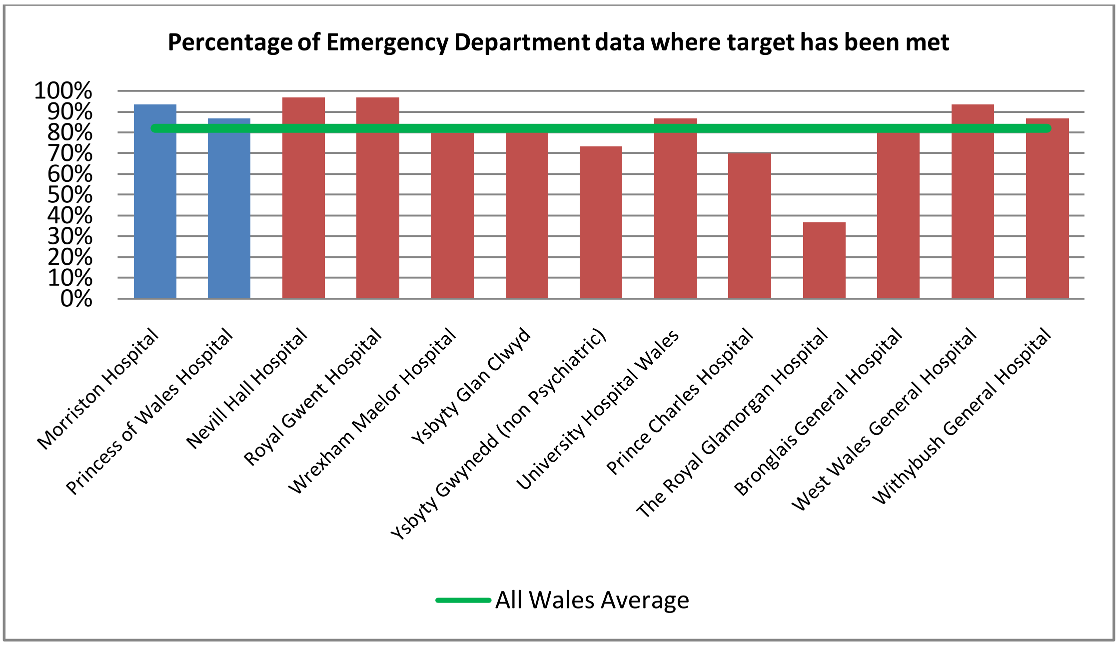
Source: NWIS data validity reports (1 April to 30 November 2011)

Exhibit 4: Outpatient activity – dataset validity



Source: NWIS data validity reports (1 April to 30 November 2011)

Exhibit 5: Emergency Department – dataset validity



Source: NWIS data validity reports (1 April to 30 November 2011)

Our analysis of PAS and RADIS system demographic data indicates that the Health Board needs to take action to address duplicate entries and records where there is no patient identifier

44. A key building block of good quality data in the NHS is patient demographic information, for example name, address and date of birth. Separate patient information systems are often in use across different hospitals and departments such as Radiology. This means that a patient who has received care in a number of different settings can have numerous records and identifiers. In such a scenario, it is unlikely that the Health Board holds all the clinical information about that patient in one place. This creates potential clinical safety risks and makes it more difficult to locate the right records for the right patient. The development and implementation of the EMPI solution should help staff to manage and reduce duplicate records.

45. We analysed the core demographic patient data held on both Patient Administration System (PAS) and Radiology Information System (RADIS), to assess the extent of duplicate entries, or cases where patient identifiers are missing. In the Health Board, our review of PAS data included the Myrddin system in use at Morriston and Singleton hospitals (referred to as 'Swansea') and the PIMs system at Princess of Wales and Neath Port Talbot hospitals (referred to as 'Bridgend').

46. The key findings from this work are that:

- The patient demographic data held on the PAS systems has 245,753 (11.4 per cent) total duplicate NHS numbers. This indicates that some improvement is needed in terms of cleansing to help minimise error, risk and inefficiency. Ideally, there should be no duplicates.
- 317,542 (28 per cent) patient registrations on PAS in Bridgend have no NHS number and 143,427 in Swansea (13 per cent). Overall this equates to 460,919 (21 per cent) across both PAS systems. This compares poorly with other Health Boards in Wales. Taking into account legacy and overseas patient records there should still only be limited number of new patients without NHS numbers. This performance suggests there is a potential clinical risk in identifying the correct patient record for those patients with no NHS number. Furthermore, the lack of an NHS Number can have a financial impact in that organisations cannot then recover treatment costs associated with patients referred from another Locak Health Board (LHB) in Wales, or from England.
- The patient demographic data held on RadCentre in Swansea has 16,454 duplicates (3.25 per cent) whereas that held in RADIS in Bridgend has 0 per cent. Comparatively, this is both the worst performing and best performing in Wales, respectively. More concerning is the number of patients without NHS numbers on the system, which stand at 17.2 per cent in Swansea and 10.7 per cent in Bridgend. This may be because of primary or community care based diagnostic requests, which have no NHS identifier, but it may make tracking and linking the full Radiology Diagnostic Activity for some patients to their PAS record more difficult.

47. Our data analysis indicates that there may be some risk to the Board, both clinical risk and business inefficiency arising from patients with no NHS number and multiple registrations, as mentioned above. The Health Board should incorporate areas for improvement into existing master patient index plans and cleansing processes. Further details on our data testing results are provided in Appendix 1.

Appendix 1

Patient demographic data analysis results

This appendix provides further information from our analysis of patient demographic data on PAS, RaDIS and RadCentre.

The table below provides a summary of the overall findings. It is followed by a set of charts, which compare the findings in the Health Board to those in other NHS bodies in Wales.

Indicator	ABMU	Wales
Total number of electronic patient records (patient administration system) in the Health Board:	2,199,976	8.5 million (total)
• Records in Bridgend (PIMMS)	1,135,816	
• Records in Swansea (Myrddin)	1,064,160	
Total number of records with no NHS number recorded:	460,919 (21 per cent)	1,150,090 (total) 16 per cent (average)
• Records in Bridgend	317,542 (28 per cent)	
• Records in Swansea	143,427 (13 per cent)	
Total number of multiple PAS registrations in Abertawe Bro Morgannwg Health Board between Health Board sites only	166,291 (7.5 per cent)	
Total number of multiple registrations within each single PAS system:	245,753 (11.4 per cent)	6.2 per cent (average)
• Records in Bridgend	51,511 (4.5 per cent)	
• Records in Swansea	194,242 (18.3 per cent)	
Total Number of Radiology records in Abertawe Bro Morgannwg Health Board:	995,612	5.2 M (total)
• Records in Bridgend (RADIS)	449,349	
• Records in Swansea (RADCentre)	506,263	
Records in PAS with more than one corresponding Radiology record by NHS Number	3,819 (2 records) 54 (3 or more records)	5,821 (2) 237 (3 or more) Average
Records in Radiology with more than one corresponding PAS record	19,755 (2 records) 306 (3 or more records)	20,900 (2) 758 (3 or more) Average

Our analysis of the data indicates that the demographic data held within the PAS and Radiology systems at the Health Board is not particularly consistent. The indicators we evaluated, generally compare unfavourably with the rest of Wales. There is a higher than expected number of PAS records which do not have NHS numbers and an above average incidence of Radiology records which lack both NHS numbers and hospital identifiers.

Whilst this is not the full story in terms of overall data quality, well controlled and clean demographic information is a pre-requisite for a good level of overall data quality and there is scope for further work to be done to bring numbers of multiple registrations and missing NHS numbers to a more acceptable levels across the LHB.

In examining multiple registrations in the across multiple PAS systems, we found around 7.5 per cent (166,291) registrations are shared between the two PAS systems currently in use in the Health Board. This level of multiple registrations is to be expected as it reflects the flow of patients receiving treatment at more than one site during their lifetime. However, there is a risk that physical records at each site for a given patient may only contain a partial medical history.

When examining each individual PAS system, we found quite a difference between the two individual systems. Bridgend has around 4.5 per cent multiple registrations, a little below the Wales average of 6.2 per cent but Swansea is significantly higher at 18 per cent. The introduction of the EMPI should go a long way to mitigate this situation.

A further complication is the number of records held without an NHS number, which in the Health Board is 460,919 (21 per cent). The split here is again uneven, with over twice the number appearing in Bridgend than Swansea.

Chart 1 – PAS: Patients with several different identifiers

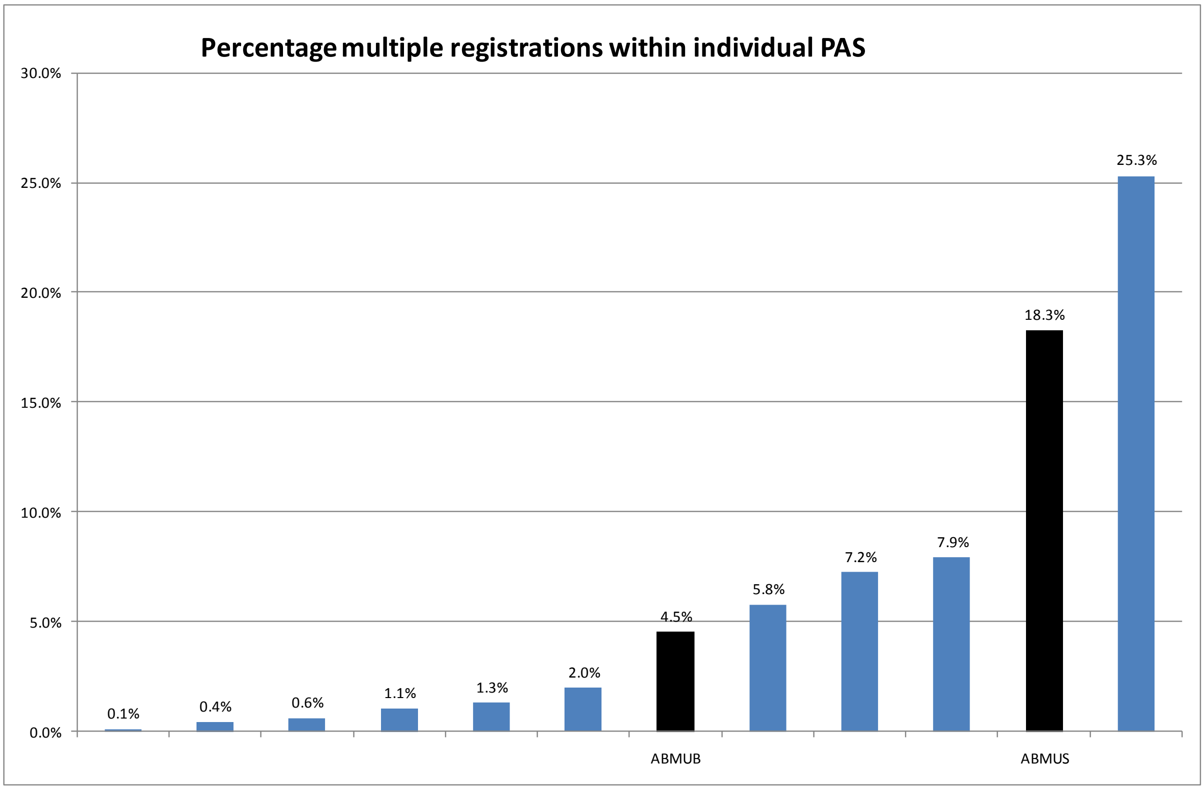


Chart 1 identifies the multiple registrations, but with different identifiers within each single PAS system in Wales. This means that there are instances of individual patients with more than one electronic record at a single site. This may present a clinical risk if the patient also has duplicate written case notes. Other LHBs in Wales are anonymously included. The chart indicates that the Health Board has 4.5 per cent multiple registrations in Bridgend, which is comparable with the middle range within Wales, but has a far higher incidence in Swansea.

Chart 2 – PAS: Patients with no recorded NHS numbers

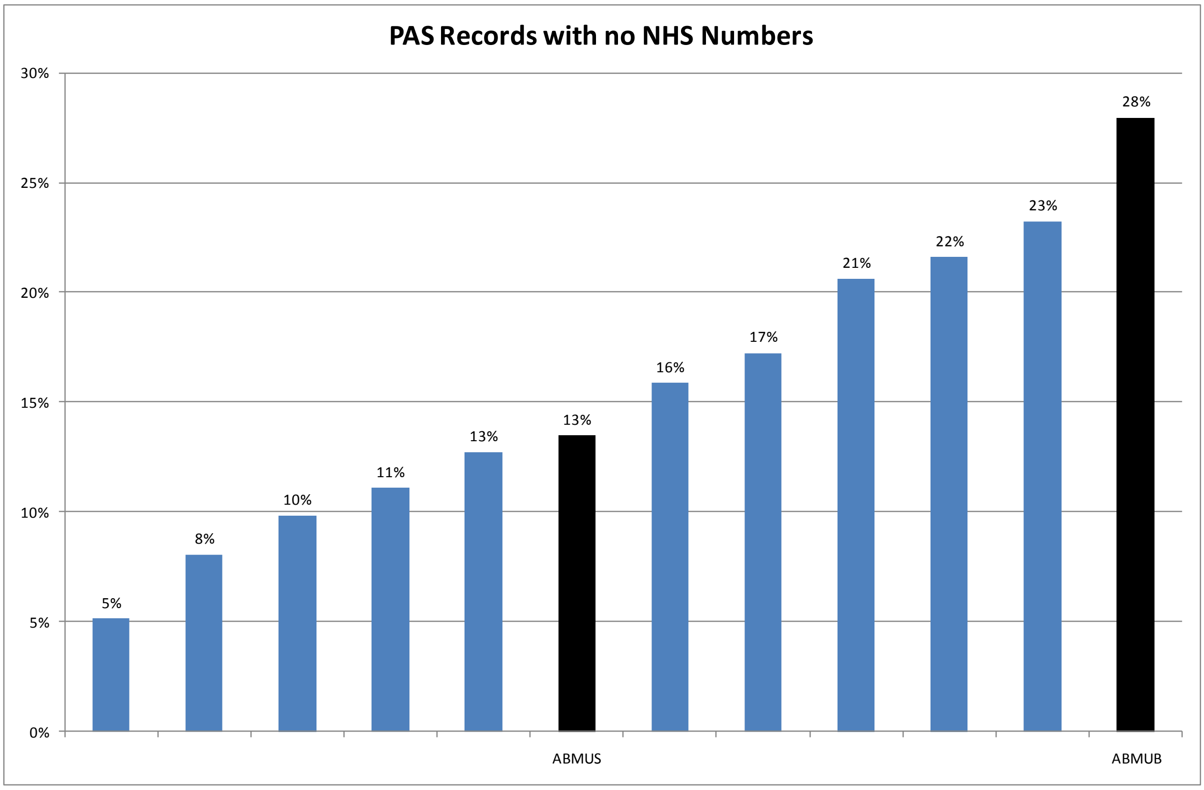


Chart 2 identifies the incidence of records with no NHS number between different PAS systems across Wales. Whilst it is still possible to identify patients by their personal details, or using existing hospital numbers, these methods are less precise than using NHS numbers. Furthermore, the lack of an NHS number can have a financial impact in that LHBs cannot recover treatment costs associated with patients from other LHBs in Wales or in the rest of the UK without quoting the NHS number. On average, the Health Board's incidence of records with no NHS number recorded is towards the higher end of the spread in Wales; the Swansea PAS has far fewer than the Bridgend PAS, which shows the highest proportion of these records in Wales.

Chart 3 – Radiology: Patients with several different identifiers

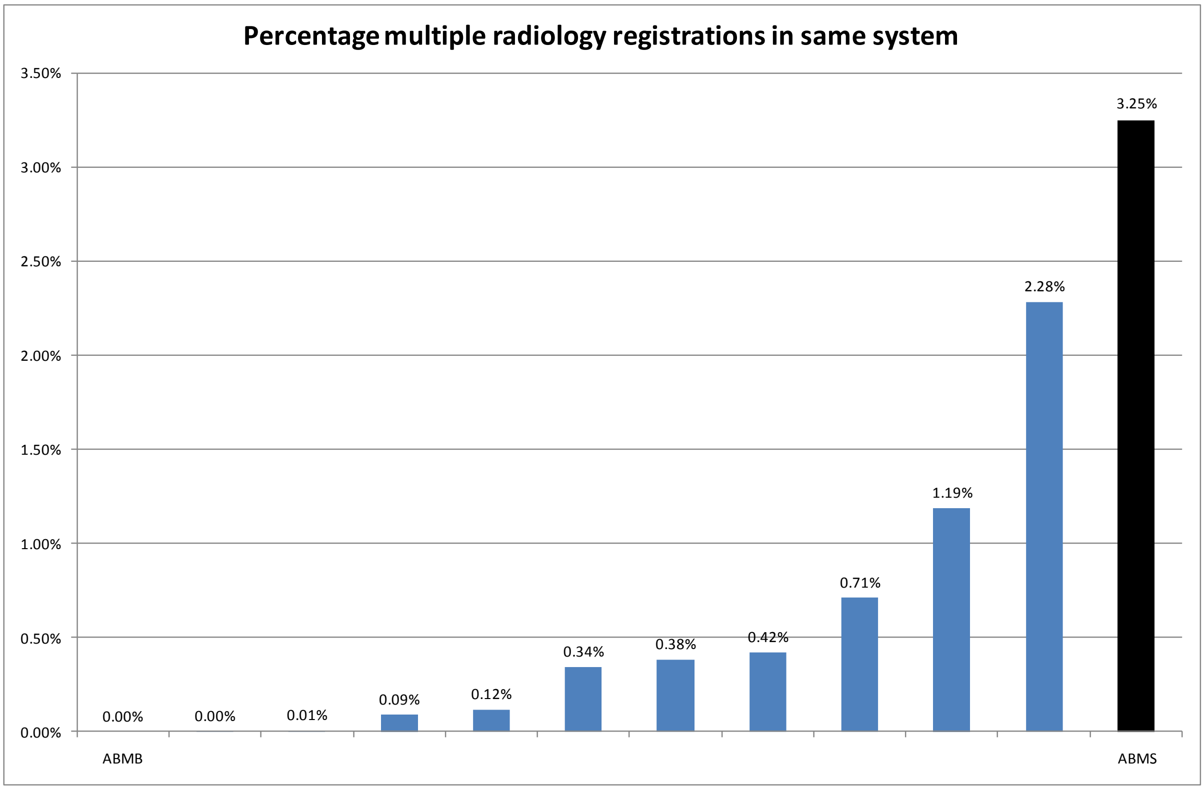
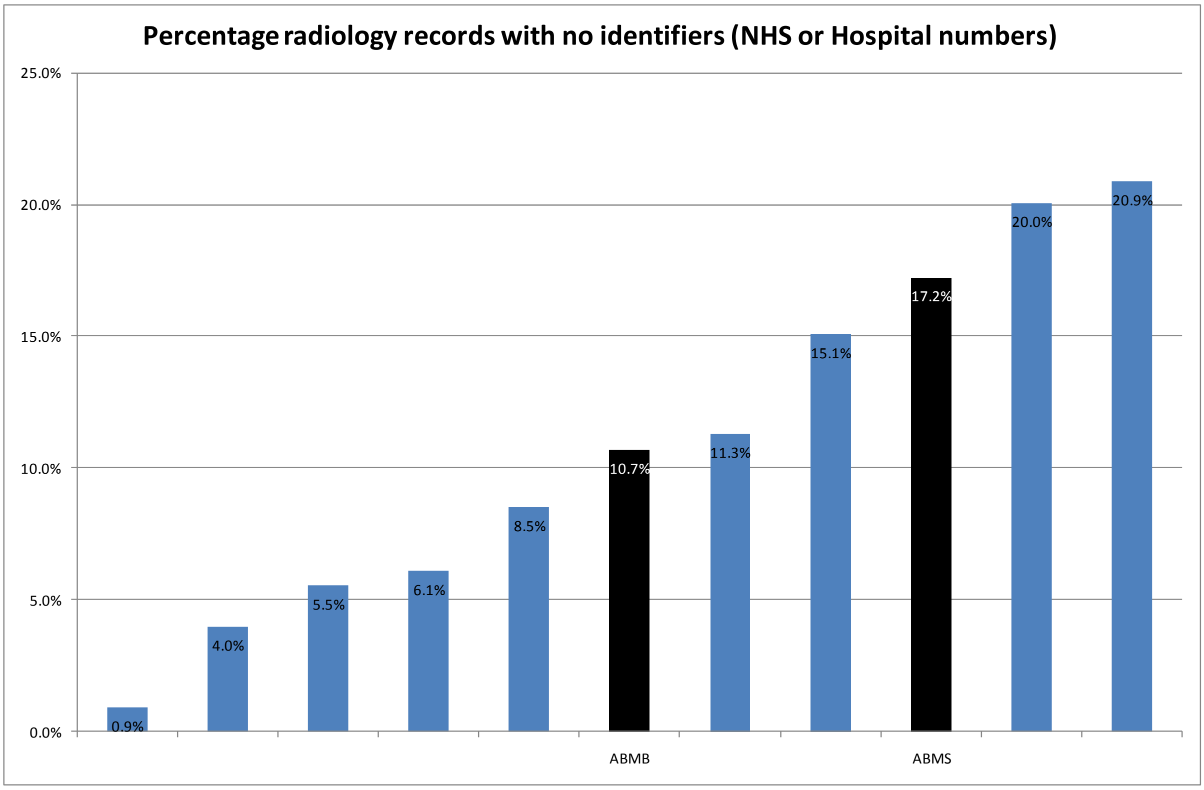


Chart 3 identifies the multiple registrations, but with different identifiers within each single radiology system within Wales. This means that there are instances of individual patients with more than one electronic record at a single site. This may present a clinical risk and may result in an incomplete diagnostic record if results are recorded only on one of the patient’s electronic records.

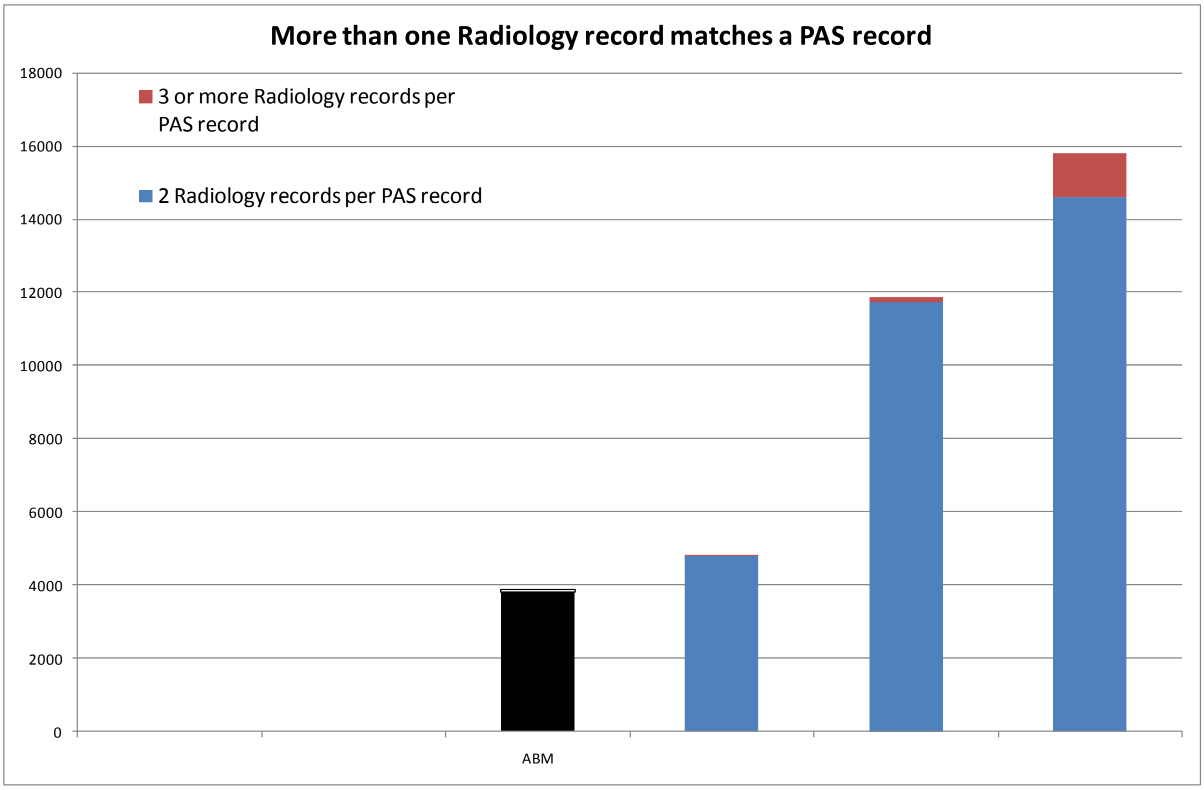
Chart 4 - Radiology: Patients with no recorded identifiers



This chart compares radiology records with no identifier at all (NHS number or hospital number) within each radiology system in use in Wales. These records are difficult to match to a corresponding PAS record.

This means that a single patient may have one or more radiology record that cannot then be easily matched to the rest of their medical records. This may present a clinical risk because a search for a patient's information via the PAS may result in only a partial representation of their full electronic record. In terms of efficiency, this may result in patients having more radiology investigations than necessary. Other Welsh LHBs are anonymously included, but the Health Board compares less favourably to these, being towards the higher end.

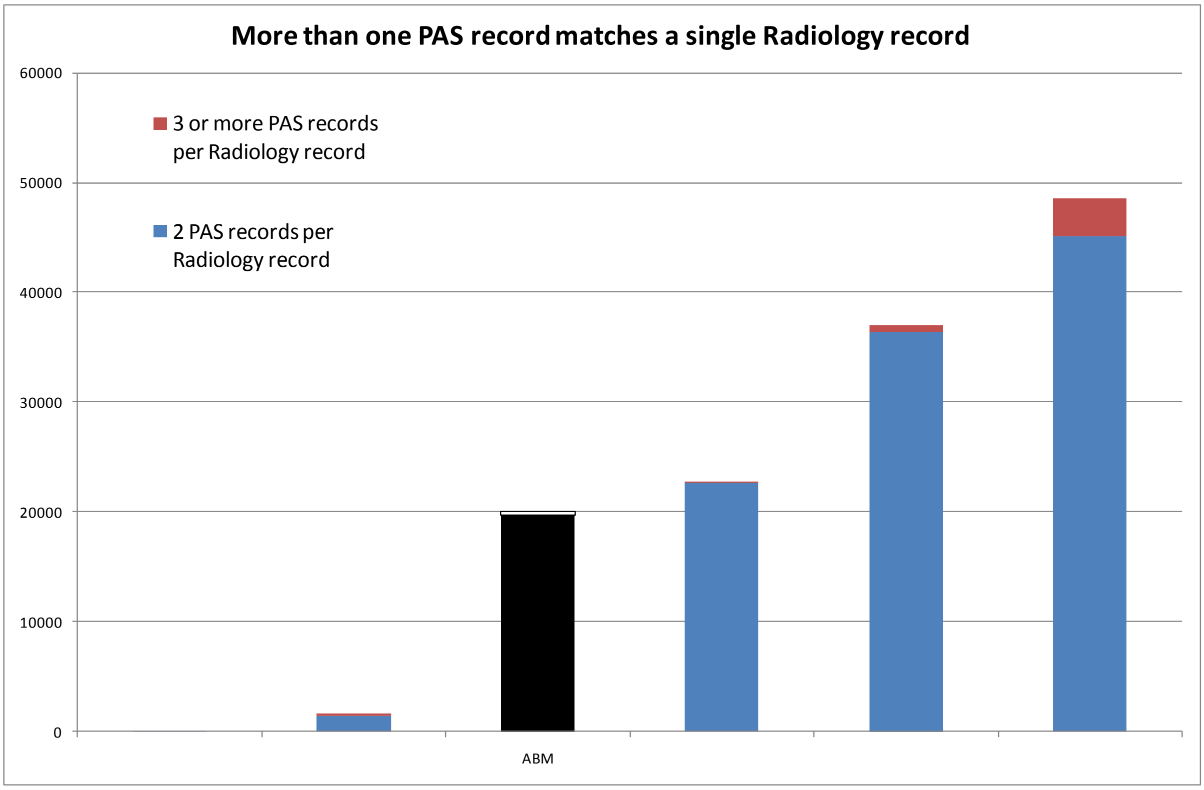
Chart 5 – More than one Radiology record matches to a PAS record



This chart compares the number of cases where a patient with at least one record in the PAS has two or more associated records within the radiology system. In this case, we have considered all the PAS and all the Radiology systems within each health board together.

This means a single patient has more than one Radiology record. In the Health Board, we found around 3819 patients with two separate Radiology records and 54 with three or more. The risks here are that an incomplete picture may be available to clinicians at the time of treatment, or that patients may have undergone more radiology investigations than necessary.

Chart 6 – More than one PAS record matches a single Radiology record



This chart shows cases where a patient has at least one Radiology record associated with more than one PAS record. The pattern for Wales is very similar to that in Chart 5, although the numbers involved are considerably larger. This is likely to be because multiple registrations in PAS are much more common than in Radiology systems. The same clinical risks apply, in that this situation makes it difficult to guarantee that all radiology information is visible when searching for individual patients.

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