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# Review of Clinical Coding

## **Powys Teaching Health Board**

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# Status of report

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# Summary report

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## Introduction

1. Clinical coding is defined by the NHS Classifications Service as ‘the translation of medical terminology, as written by the consultant, to describe a patient’s complaint, problem, diagnosis, treatment or reason for seeking medical attention into a coded format which is nationally and internationally recognised.’
2. Clinical coded data is core to the information used by NHS organisations to govern the business and ensure that resources are used efficiently and effectively. Coded data informs decision making and strategic plans. It is also fundamental in reporting quality and performance, including mortality rates.
3. In England, coded data is also used in Payment by Results, the system by which trusts are paid for services they provide. Although NHS organisations in Wales are not paid in relation to activity, all health boards have now adopted patient level costing as a way of allocating costs to activity, based on coded data. This patient level costing is becoming increasingly important in informing discussions about the transfer of monies between health boards. The linkage between coding and income has meant that many hospitals in England have invested in the clinical coding department. In Wales this has not been the case.
4. Clinical coding featured in the recent Francis Report into the failings at the Mid Staffordshire NHS Foundation Trust. Evidence presented to the second inquiry into the Mid Staffordshire care failings pointed to the fact that the Board had convinced itself that the reported high mortality rate was due to the poor quality of the coded data that underpinned it, rather than any failings in the care provided to patients. The readiness to explain away the high mortality rates as being down to coding and data quality ultimately had tragic consequences for many patients at the Trust. The report concluded that executives and independent members needed to be more aware of issues relating to coding, and their relationship to management information that is used to measure performance and outcomes.
5. The focus on clinical coding in Wales has been mainly in respect of the timing to complete the coding process. The Welsh Government had set a target that by the end of each financial year, 95 per cent of hospital episodes should have been coded within three months of the episode end date. Many health boards have struggled to meet the completeness target with significant numbers of cases waiting to be coded. The main reason for backlogs appears to be staff capacity.
6. In response to the need for accurate and timely clinical coding, the Director of Delivery and Deputy Chief Executive NHS Wales wrote to all Chief Executives in January 2013. He raised the need for a renewed and sustained commitment to coding quality and to seek assurance that required standards for timeliness and completeness would be met and maintained. The targets set by the Welsh Government were revised with immediate effect. These included:
  - a requirement for NHS bodies to meet the 95 per cent completion target on an ongoing monthly basis, and not just at the year-end; and

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- a new target that for any given 12-month period, 98 per cent of all hospital episodes should be coded within three months of the episode end date.
7. In setting these targets, the Welsh Government recognised that there was no mechanism in place to continually assess the accuracy of clinical coded data in Wales. Plans were subsequently put in place to develop a national programme of clinical coding audit and a new National Clinical Coding Audit lead was appointed in July 2013 to take forward this work from within the NHS Wales Informatics Service (NWIS).
  8. Given the concerns about the timeliness and accuracy of clinical coding across Wales, the increasing application of patient level costing, and the importance of accurate management information, the Auditor General for Wales decided to undertake a review of clinical coding across all health boards in Wales, as well as Velindre NHS Trust.
  9. The review sought to answer the question: ‘Do clinical coding arrangements support the generation of timely, accurate and robust management information?’ The work was undertaken in partnership with the NWIS Clinical Classifications Team<sup>1</sup> and is being used by NWIS to provide a baseline position on clinical coding accuracy and management arrangements across Wales. The approach included a particular focus on three main specialties which account for a significant proportion of hospital activity. These specialties were general surgery, general medicine, and trauma and orthopaedics. The approach taken to delivering the review is set out in more detail in [Appendix 1](#).

## Our main findings

10. Our review has concluded that clinical coding lacks any prominence within Powys Teaching Health Board (the Health Board) and although arrangements support the generation of timely information, a range of weaknesses in the process are impacting on the accuracy of clinical coded data. The reason for our conclusion is that:
  - Although there is potential to extend the scope of activity that is coded, the Board currently does not see the value of coding in the effective operation of its business:
    - clinical coding has no profile at Board level, and although there is some awareness of the role of clinical coding, there is a general lack of awareness of the Health Board’s own arrangements by Board members;
    - there are clear lines of operational accountability for clinical coding direct to the Board, however, engagement with the wider informatics arrangements is lacking; and
    - the clinical coding team is well resourced, which presents real opportunities to demonstrate the potential of coding, however, there is a lack of funding for training and development which would enhance the quality of coded data.

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<sup>1</sup> The Clinical Classifications Team provides support and guidance to clinical coders in NHS bodies and forms part of the NHS Wales Informatics Service.

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- Despite the general procedures by which activity is coded working well, there are some significant gaps in the overall clinical coding process particularly in relation to clinical engagement and validation checks:

policies and procedures are up to date and in line with national standards although the focus on quality within the policy could be strengthened;  
access to medical records and electronic information is good, however, there are some issues with the quality of medical records across Powys that need to be addressed;

- on average, coders are getting access to medical records within two weeks of discharge, which is positive;
- the lack of discharge summaries and identification sheets is impacting on the overall quality of medical records; and
- the level of access to relevant electronic information could be further improved by providing coders access to the endoscopy system.

allocation of workload is supportive of timely coding, however, there is limited peer support due to isolated working arrangements;

there is a stable workforce, however, there is limited career progression and the coding supervisor needs to be empowered more to undertake her role effectively;

there is no clinical engagement in the clinical coding process, which is further affected by the transient nature of the consultant body; and  
validation processes are limited and there are no routine audit arrangements in place.

- Clinical coded data is used appropriately and meets the Welsh Government standards but there are problems with the accuracy of coding, the implications of which need to be clearly identified to the Board:

clinical coded data is being used appropriately and standards of timeliness are good with no backlogs to affect the data, but there are issues with the accuracy of coding which need to be addressed;

- the Health Board achieved the national validity and consistency standards for data derived from clinical coding;
- the Health Board achieved the Welsh Government target that activity should be coded within three months with performance continuing to be achieved during the year to date; and
- the review of clinical coding accuracy identified rates of error ranging between 0 and 37 per cent, with codes assigned to secondary diagnosis the most problematic.

clinical coded data is being used appropriately throughout the Health Board although the implications of poor clinical coding on management information relating to both its own services and those of its providers need to be made more explicit to the Board.

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## Recommendations

### 11. We make the following recommendations to the Health Board.

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#### **Profile of Clinical Coding**

R1 Raise the profile and awareness of clinical coding across the Health Board. This should include:

- providing briefing material for Board members on clinical coding and the implications of poor coded data on management information;
- providing training on the role of medical staff in the clinical coding process, particularly focusing on general practitioners;
- increasing the visibility of a clinical coder at Brecon hospital;
- reporting coding performance as part of integrated performance reporting; and
- improving reporting lines for issues relating to clinical coding through to the Board.

#### **Clinical Coding Accuracy**

R2 Ensure processes are in place to routinely validate and review the accuracy of coding. This should include:

- introducing routine validation checks which include feedback to the team;
- engaging clinicians in the validation of coded data;
- exploring the potential to adopt the Medicode system;
- working with the national clinical coding audit lead to develop a local programme of coding audit; and
- updating the clinical coding policy to ensure that validation and audit processes are documented.

#### **Clinical Coding Resources**

R3 Review the allocation of staff resources, work programmes and improve team working. This should include:

- providing support to the Clinical Coding Supervisor to undertake the accredited clinical coder qualification as stated in the job description;
  - rebalancing the clinical coding workload across the team to allow the supervisor to undertake the required supervisory duties;
  - encouraging whole team meetings to bring together all coding staff more regularly;
  - exploring the potential to extend the range of activity that is coded, such as outpatient consultations;
  - providing the clinical coding staff with access to the endoscopy information system; and
  - clarifying the responsibility for coding mental health activity to ensure that current arrangements are in line with contract agreements with Aneurin Bevan University Health Board.
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### **Medical Records**

- R4 Improve the quality of medical records across the Health Board. This should include:
- raising the importance of good quality medical records throughout the Health Board, including all visiting medical staff;
  - putting arrangements in place to reduce the number of multiple patient records;
  - improving compliance with the medical records tracking system;
  - improving engagement between medical records and clinical coding; and
  - adopting and implementing standards for medical records across the Health Board, supported by a programme of medical record audits.

*Source: Wales Audit Office 2013*



# Detailed report

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Although there is potential to extend the scope of activity that is coded, the Board currently does not see the value of coding to the effective operation of its business

Clinical coding has no profile at Board level, and although there is some awareness of the role of clinical coding, there is a general lack of the Health Board's own arrangements by Board members

12. Our observation of boards as part of our Structured Assessment<sup>2</sup> in 2012 suggested that not all boards in Wales were aware of clinical coding issues, or the fact that poor clinical coding performance can adversely affect the robustness of information for strategic decision making and service monitoring.
13. As part of our Structured Assessment in 2013, we surveyed Board members across Wales to gauge their understanding of clinical coding within their organisations, and their level of assurance that clinical coding arrangements are robust. We received responses from 15 of the Board members in the Health Board, however, only 10 members fully completed the questions relating to clinical coding. The full results from our survey of Board members can be found in [Appendix 2](#).
14. Overall, the responses to the survey indicate that some Board members in the Health Board are aware of the factors affecting the robustness of clinical coding, but there was a general lack of awareness of the Health Board's own clinical coding arrangements with:
  - 6 out of 10 Board members reporting that they had full or some awareness of the factors affecting the robustness of clinical coding;
  - only 3 out of 10 Board members reporting that they were satisfied or completely satisfied that the Health Board was doing enough to ensure that clinical coding arrangements were robust; and
  - only 2 out of 10 Board members reporting that they were satisfied with the information they received on the robustness of clinical coding arrangements in the Health Board.
15. The profile of clinical coding at Board level is low. There have been no papers to the Board over the last two years relating to clinical coding, and the integrated performance report does not include the Health Board's own performance in relation to the Welsh Government target for coding completeness. The Health Board is, however, routinely meeting the Welsh Government target and this may be the reason for not reporting performance at the Board, however, in common with much of Wales, there is currently no mechanism for providing assurance that the resultant clinical coded data is accurate.

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<sup>2</sup> The Structured Assessment work examines the arrangements in place to secure efficiency, effectiveness and economy in the use of NHS resources.

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16. There is also no reference to the quality of clinical coding in the neighbouring NHS organisations that provide services to the population of Powys. This is particularly important for English NHS trusts as it is coded data that underpins payment by results, the mechanism by which the Health Board pays for services provided in England. Repatriation of services is a priority for the Health Board, and the quality of clinical coding is crucial to this to ensure that strategic and financial plans are robust.
  17. The quality of clinical coding in the neighbouring NHS organisations is also important as it also underpins a range of performance indicators, including the Risk Adjusted Mortality Index. These are important measures for the Health Board to ensure that the services provided to Powys residents by provider organisations is of good quality, but it needs to understand the quality of the underpinning data to be able to make that judgement.

**There are clear lines of operational accountability for clinical coding direct to the Board, however, engagement with the wider informatics arrangements is lacking**

18. Recent revisions to the management structure have strengthened accountability. Clinical coding is the operational responsibility of the Interim Director of Planning. Day to day management is through the Head of Information, the Information and Data Quality Manager and the newly appointed Clinical Coding Supervisor, who was appointed in August 2013. Clinical coding staff are based in four of the Health Board's community hospitals. The Clinical Coding Supervisor oversees the staff at all four sites. These arrangements provide a clear line of accountability for clinical coding from Board level through to operational coding staff.
19. The route for reporting clinical coding issues through to the Board is less clear. Clinical coding plays a key part in the informatics process and therefore it would be expected that it forms part of the business of forums where discussions relating to such issues as data quality are raised. Our previous review of data quality in 2012 identified that there was no data quality forum in place, although there were plans to establish a data standards group. Our recent work has identified that this is still not in place. Information Governance in the Health Board rests with the Director of Therapies and Health Science. There is an Information Governance Management group, which supports the work of the Health Board's Information Governance committee. This is supported by the Powys Information Group. A review of the minutes of these meetings indicates that clinical coding is not discussed, and consequently there are no matters relating to clinical coding raised up to the Board.
20. Although information to support the clinical coding process is often available electronically, a patient's medical record is a vital source of information to enable clinical coders to accurately record the diagnoses and procedures relating to a hospital stay. Consequently, it is recommended that clinical coders code directly from medical records. What is written in the medical records, and how it is written, therefore has an effect on the accuracy of clinical coding. The Health Board's medical records function sits within the Therapies and Health Science division. Our fieldwork identified that

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there is very little engagement between clinical coding and medical records. A records management group is in place but there is no representation from clinical coding, despite them being a key user of medical records. At the time of our review the record management strategy was under revision. The clinical coding team as well as clinicians identified a lack of engagement with the strategy.

21. The quality of medical records in the Health Board is variable. We heard mixed views as to whether there are standards in place to ensure good quality record keeping, with medical staff reporting that they were not aware of any. Although we have identified that the Health Board has developed standards for medical records, our fieldwork identified that the Health Board had not adopted the Royal College of Physicians (RCP) standards<sup>3</sup>. The clinical coding policy, however, makes reference to the requirement of clinicians to comply with the RCP standards. This highlights a lack of communication between the two functions, and a lack of awareness amongst medical staff.
22. One way of improving the quality of medical records is by embedding the importance of medical records in the training of staff. Our review identified no formal training for medical staff on record keeping, or wider staff groups such as ward clerks. Training medical staff is a challenge for the Health Board, given that a large proportion of them are not employed by the Health Board, however, raising awareness amongst all staff who use medical records within any of the community hospitals is important.

**The clinical coding team is well resourced, which presents real opportunities to demonstrate the potential of coding, however, there is a lack of funding for training and development which would enhance the quality of coded data**

23. The extent to which hospital activity is coded to a good quality is partly dependent on the level of resources that an organisation is prepared to invest in its clinical coding function. This is both in terms of staffing levels, but also the arrangements to ensure that staff have access to training and development opportunities which would enhance the quality of clinical coding.
24. Currently, only information relating to hospital admissions (in the form of finished consultant episodes), and more recently procedures undertaken in an outpatient setting, are required by the Welsh Government to be coded. With additional resources, clinical coding has the potential to respond to a significant gap in intelligence by extending the range of activity that is coded. This could include the coding of GP referrals, all outpatient visits or attendances at emergency departments which are not admitted, including minor injuries units.

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<sup>3</sup> In 2008, the Academy of Medical Royal Colleges approved new standards for the structure and content of medical records developed in a project led by the Royal College of Physicians Health Informatics Unit (HIU) and funded by NHS Connecting for Health.

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- 25.** The budget allocated for clinical coding in the Health Board has increased. The annual budget for 2013-14 is in the region of £71,883, an uplift of 5.5 per cent since 2010-11. Staffing accounts for the entire budget. As at 30 September 2013, the Health Board's clinical coding department had a total funded establishment of 2.81 full time equivalents (FTEs). This is the same number as in 2011 and would suggest that the increase in budget is primarily related to rises in pay costs.
  - 26.** The core clinical coding team (ie, those staff whose primary role is to undertake clinical coding) is 2.63 FTEs (consisting of 2.08 FTEs at Band 4, plus 0.55 of the clinical coding supervisor role). The clinical coding remit for the Health Board covers all finished consultant episodes, plus outpatient procedures in accordance with national guidance. In Powys, finished consultant episodes would include all episodes recorded under general practitioners who support inpatient care in the Health Board's community hospitals. A local decision has been made for the clinical coding team to also code outpatient diagnoses for dermatology.
  - 27.** The clinical coding team in the Health Board also codes mental health activity relating to the mental health wards in Powys. The responsibility of these episodes rests with Aneurin Bevan University Health Board (UHB). This activity should be undertaken by the clinical coding team within Aneurin Bevan UHB as it is not activity that is attributed to Health Board.
  - 28.** If demand from finished consultant episodes (FCEs) continues in line with 2012-13 (excluding mental health activity relating to the neighbouring health board), the required level of core clinical coding staff needed to meet FCE demand would be in the region of 0.8 FTEs<sup>4</sup>. This is based on a recognised standard workload level of 30 FCEs per day per full-time coder. This would indicate a surplus in the current staffing establishment for the core clinical coding team of 1.83 FTE. Some of this surplus would be used to complete the additional coding activity undertaken by coding staff, such as outpatient procedures, although the total level of this activity is minimal.
  - 29.** The geographical nature of Powys presents challenges in securing an efficient level of staff. Given that finished consultant episodes apply to all of the Health Board's community hospitals, it would not be feasible or practical for staffing levels to be substantially reduced to cover all of these sites unless central processes were put in place. The surplus in staff levels, however, presents opportunities. The Health Board's focus on repatriation of activity back into Powys will increase FCEs, which will in turn increase the demand on the clinical coding team. This additional activity would not require additional coding resources. Although a supervisor was appointed in 2013, seventy 75 per cent of her time is currently focused on undertaking clinical coding. There is scope to rebalance her supervisor duties alongside her coding commitments, without having a detrimental impact on the clinical coding resource.

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<sup>4</sup> Calculation based on FCE activity for 2012-13, divided by workload assumption of 30 FCEs per day, divided by a standard availability of 200 working days per year per FTE (excluding bank holidays, leave entitlements and commitments to training and development (including mandatory training and personal development reviews)).

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30. The NWIS currently provides free access to the foundation training course for clinical coders, along with refresher training and specific training on new versions of the coding classification structures. All coding staff have the opportunity to attend NWIS training courses.
  31. There is currently, however, no Health Board budget for training and development over and above the training provided centrally. This would include training to support staff to complete the nationally recognised accredited clinical coding (ACC) qualification which would enhance the quality of clinical coding, as well as the advanced modules of clinical coding auditor and clinical coding trainer which would support the Health Board to develop its own programme of clinical coding accuracy reviews. The Health Board has, however, supported two of the staff to attend specialty specific training which was funded from within the wider Health Board's training budget.
  32. The Health Board does not require its clinical coding staff to be accredited at appointment, or to gain accreditation whilst in post, with the exception of the supervisor post. All of the clinical coders are currently at Band 4, and none of them are accredited clinical coders. In other health boards, staff must achieve the accredited clinical coding qualification to fulfil a Band 4 role. The newly appointed supervisor is expected to work towards the ACC qualification whilst in post but to date there has been no financial commitment from the Health Board to support her achieving this. There are no clinical coding auditors or trainers in the Health Board.

**Despite the general procedures by which activity is coded working well, there are some significant gaps in the overall clinical coding process particularly in relation to clinical engagement and validation checks**

**Policies and procedures are up to date and in line with national standards although the focus on quality within the policy could be strengthened**

33. The Health Board has an up-to-date clinical coding policy, which is reviewed annually. The policy sets out the coding structure across the Health Board in an accessible format, is easy to follow and is a useful reference for staff, particularly new starters. However the policy makes no reference to auditing or quality checking of clinical coding.
34. Staff are located across a number of sites, so it is important that the clinical coding policy promotes consistency in coding practices. During our review we found that coding practices were consistent. When coding activity, it is vital that coders adhere to national standards so as to ensure that clinically coded data is comparable across Wales and is of the highest quality. To support guidance and clarification of national standards, the NWIS Clinical Classifications Team will provide a range of additional documentation such as communications and access to a clinical coding helpline.

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35. Implementation of national standards is routinely supported through the central mechanisms such as the NWIS Clinical Coding User Group. These groups provide opportunities to challenge the standards, raise queries and share experiences across Wales. The Clinical Coding Supervisor is actively involved in these groups, with open channels of communication between the coding team and the Clinical Classifications Team in NWIS.
  36. On occasions, it may be necessary for organisations to develop supplementary procedures to clarify the allocation of codes where local circumstances may make it difficult for coders to identify a diagnosis or procedure, for example, where there is differing or new clinical intervention than elsewhere in Wales. These procedures must conform to national standards and are generally developed in conjunction with clinicians. The Health Board currently has no supplementary procedures in place.

**Access to medical records and electronic information is good, however, there are some issues with the quality of medical records across Powys that need to be addressed**

**On average, coders are getting access to medical records within two weeks of discharge which is positive**

37. To facilitate the achievement of the Welsh Government target that 95 per cent of coding activity should be completed within three months of the end of the hospital episode, it is important that clinical coders get timely access to patients' medical records.
38. Once a patient is discharged or transferred, the majority of medical records can be released directly to the clinical coding teams. However, some medical records can find their way to many different departments before reaching the clinical coding department, for example, to medical secretaries for correspondence to be filed or to bereavement officers to complete the necessary paperwork to register a death. As part of our fieldwork, we undertook a tracking exercise, using the medical records tracking tool<sup>5</sup>, to track medical records from the ward through to the clinical coding department to see how quickly clinical coders are able to access medical records.
39. Based on a sample of 120 records across the three specialities reviewed, we identified that it took an average of just over two and a half weeks for patients' medical records to reach the clinical coders from the point of discharge or transfer. We also identified that all records were received by the clinical coders within three months. More detail is provided in the following exhibit.

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<sup>5</sup> To be able to locate medical records at any given time, NHS bodies use a tracking tool. These can take the form of an electronic module on the patient administration system (PAS) or a paper format. In Powys Teaching Health Board, the tracking tool forms a specific module on the Myrddin PAS system.

Exhibit 1: Speed of access to medical records following discharge or transfer in Powys

		General Medicine	General Surgery	Trauma and Orthopaedics
Speed of accessing medical records (weeks)	Average	2.2	2.6	4.6
	Shortest	0	0.3	1.0
	Longest	10.3	9.3	9.4
Percentage of medical records received by the coding team.....	...within four weeks (one month) of discharge	81%	74%	56%
	...within eight weeks (two months) of discharge	94%	94%	89%
	...within 12 weeks (three months) of discharge	100%	100%	100%

Source: Wales Audit Office 2013

40. Our tracking exercise also identified, however, that a total of 45 records were not tracked on the system: 69 per cent of these related to trauma and orthopaedics. When patients are brought into hospital, clinical staff need to have access to their records quickly. Tracking helps ensure that records can easily be located and minimises the risk of records being lost.
41. To support timely access to medical records, and to reduce the time spent by clinical coding staff tracking them down, many clinical coding departments across Wales have appointed support staff who specifically collate, source and locate medical records. These staff are often referred to as 'runners'. The Health Board does not have any runners. Ward staff place completed case notes in collection boxes which are regularly collected by coding staff or porters. This can divert resources away from undertaking clinical coding, however, a diary exercise undertaken for a period of two weeks<sup>6</sup> indicated that the coders within the Health Board spent less than four per cent of their time locating medical records.

<sup>6</sup> A diary exercise was completed for two weeks for all clinical coding staff.

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The lack of discharge summaries and identification sheets is impacting on the overall quality of medical records

42. The quality of medical records can have a direct impact on the quality of coding. Clinical coders rely on the inclusion of key information within the medical record to enable them to effectively capture all that has happened to the patient. Medical records therefore need to be of a high quality, in terms of the way the medical record is ordered and the completeness of the information that it contains.
43. As part of our fieldwork, we reviewed a sample of 90 medical records across the three specialties reviewed within the Health Board. The review was based on 16 of the RCP standards. Of the 90 medical records in the sample, we were unable to review one, as it contained no record relating to the specific episode of care we were reviewing. Of the remaining medical records, we found that there was an overall compliance rate of 78 per cent. More detail is provided in the following exhibit.

Exhibit 2: Overall percentage level of compliance with RCP standards by specialty

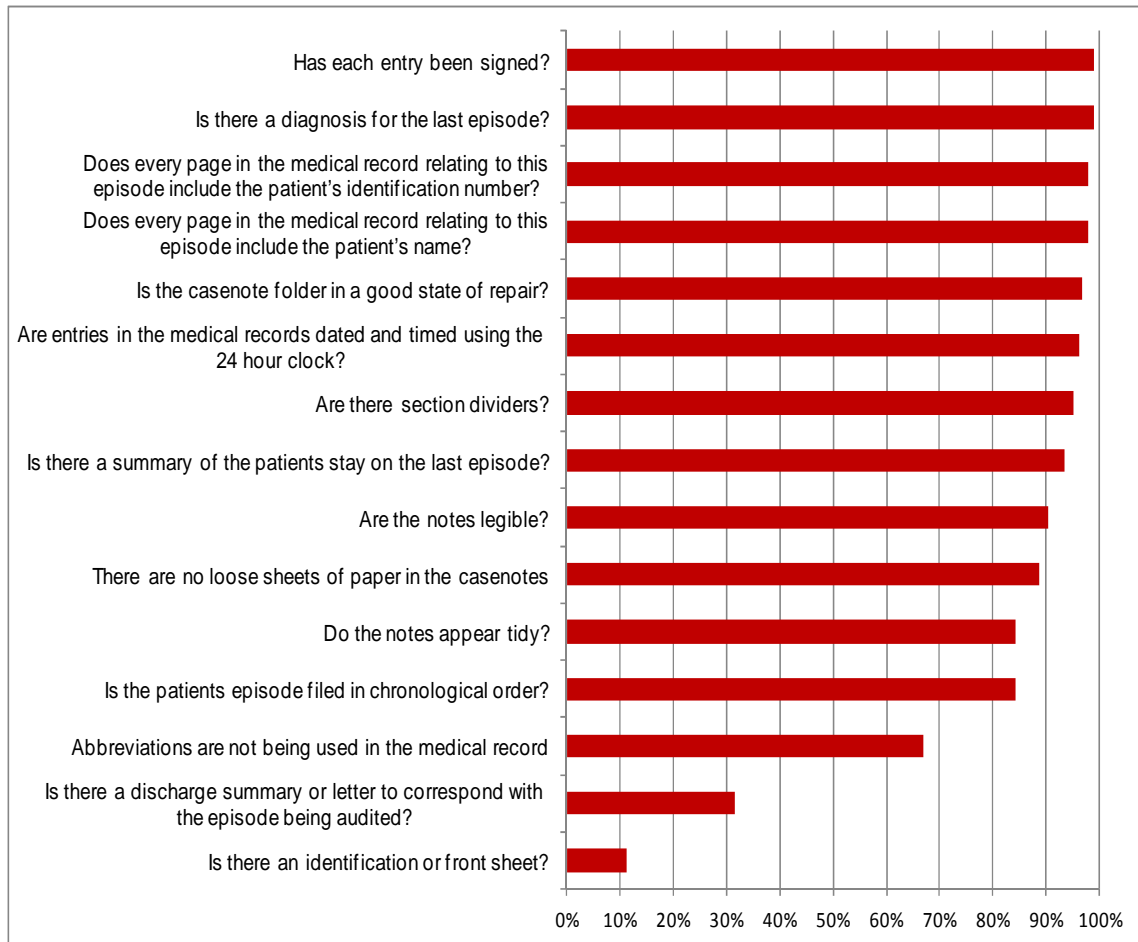
	General Medicine	General Surgery	Trauma and Orthopaedics
Powys Teaching Health Board	79%	79%	72%

Source: Wales Audit Office 2013

44. The medical records team have responsibility for setting up the record and ensuring that it is stored appropriately. However the responsibility for filing information and the quality of the information recorded in the medical records rests with other staff, particularly ward clerks, secretaries and clinical staff. Particular standards that were identified as being problematic ([Exhibit 3](#)) in the review of medical records fall under the responsibility of these staff. These include ensuring medical records contain a discharge summary and that front sheets are in place with up to date details. A breakdown of the compliance rate against the RCP standards by specialty is included in [Appendix 3](#).



### Exhibit 3: Overall level of compliance against the RCP standards



Source: Wales Audit Office 2013

45. While the quality of records is generally good, multiple records are an issue for the Health Board. Separate medical records are created for each community hospital that a patient may be treated in within Powys. For the majority of patients, local hospital care will be provided in one hospital, however, there will be a proportion of patients where multiple records may apply. These records are not amalgamated which may impact on the quality of coding, as relevant previous medical history may be omitted if it is contained in a separate medical record. Implementation of the single patient number in Powys has helped to link multiple records but until records are amalgamated into a single patient record which covers the whole of Powys, multiple records will continue to be problematic.

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The level of access to relevant electronic information could be further improved by providing coders access to the endoscopy system

46. Given the increasing move towards electronic reporting, some information that coders require for clinical coding is available through clinical information systems, such as the Radiology Information System (RadIs2) and the pathology system (Telepath). In some instances, it can also be deemed appropriate that coders code using only the information contained on the electronic system, for example, attendances to a diagnostic unit such as endoscopy, thereby reducing the need for them to access patient records. It is therefore important that coding departments have appropriate levels of access to all relevant clinical information systems that are in operation.
47. All clinical coding staff across the Health Board have access to a range of clinical information systems, although they do not have access to diagnostic systems such as RadIs2, Telepath and Endoscribe. It is currently not practical for staff to have access to RadIs and Telepath as both radiology and pathology services are provided by neighbouring health boards, however, the Health Board does provide endoscopy services. Providing coders with access to the endoscopy system would reduce the need for the coders to access paper records for patients who have endoscopic treatment, as sufficient information should be available on the clinical system to enable them to code appropriately.
48. It is also important that clinical coders have access to the internet and intranet to allow the staff to access the necessary training and resources available online through the NWIS Clinical Classifications Team and the NHS Classifications Service in England. Clinical Coding Communications from NWIS are issued by email so having access to an NHS email account is of equal importance. All of the clinical coding staff in the Health Board have full access to the internet, intranet and email. This is identified as good practice.

Allocation of workload is supportive of timely coding, however, there is limited peer support due to isolated working arrangements

49. Clinical coding workload can be managed in two ways, either by adopting a general approach so that staff code all specialties, or by allocating coders to specific specialties. Both approaches have benefits:
  - A general allocation of work supports an even workload across the staff, as well as a balanced approach to meeting the demand across all of the specialties. However, this approach requires staff to have a full understanding of the coding relating to all specialties, some of which may have particular procedures or diagnoses that are complex to code. This approach can dilute skills and experience and therefore it is important that there is opportunity from within the team for peer support to share experience.
  - A specialty allocation of work supports the development of skills and experience in a number of specialties, which in turn can enhance the quality of coding. However some specialties can be more complex to code than others due to the

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case mix of patients, and consequently can take longer to process. If these are all processed by only one or two members of staff, backlogs can quickly build in these specialties, particularly if staff are also away from the office for a period of time, eg, on annual or sick leave.

50. The Health Board has adopted a mixed approach. Staff are individually based in Bronllys, Llandrindod Wells, Llanidloes and Ystradgynlais hospitals, and are each responsible for coding all of the activity which takes places in their respective hospital, plus surrounding hospitals. To maintain their skills in relation to surgical activity, however, the coding of day case activity in Brecon and Llandrindod Wells Hospitals is shared across the team. Staff, however, generally work in isolation. Unlike many other teams across Wales, they do not have the benefits of ongoing peer support that comes with being based centrally as one team. During our fieldwork, we did identify that staff will contact each other for peer support, however our diary exercise identified that this was minimal. We also identified that the staff rarely meet as a team as a whole. As activity is increasingly repatriated back into the county, it is very likely that coders will need to code procedures they are not familiar with. It is important that formal mechanisms are in place to ensure that the staff support each other as they take on this new work.
51. Once coders receive the medical records from the wards they are filed in chronological order in the department to await processing. As part of our review to understand the speed in which coders have access to medical records, we also reviewed the length of time between medical records becoming available to the department and the coding process being completed. Of our sample of 120 records, we identified that on average records were coded within three days, with:
- 95 per cent of records coded within a week;
  - 97 per cent of records coded within a fortnight; and
  - 100 per cent of records coded within three weeks.

**There is a stable workforce, however, there is limited career progression and the coding supervisor needs to be empowered more to undertake her role effectively**

52. Staffing levels within the Health Board have remained constant over the last three years, with the creation of a supervisor post in 2013, which provided a promotion opportunity to a member of staff. There are currently no vacancies, with no staff leaving the department in the last two years, which indicates a stable workforce.
53. The level of clinical coding experience within the department is also good with all staff having more than five years' experience and one staff member having above 10 years. No staff are due to retire in the next five years, which also demonstrates a stable workforce.
54. As discussed in paragraph 32, coding staff within the Health Board are currently employed on a Band 4 regardless of their level of experience. This poses a risk to the team as there is currently no clear career progression with the exception of promotion

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to supervisor. If the Health Board is to improve the quality of its clinical coding, it needs to consider introducing the ACC qualification, and requiring staff at Band 4 level to be working towards the qualification.

55. The new supervisor currently only spends a quarter of her time undertaking supervisor duties, with the remainder of her time spent coding activity. Given the capacity that we have identified in paragraph 32 there are real opportunities within the coding team to rebalance the workload across the Band 4 staff, to enable the new clinical coding supervisor to develop and undertake her role more effectively.

### There is no clinical engagement in the clinical coding process which is further affected by the transient nature of the consultant body

56. Clinical engagement has been described as the single most valuable resource to a coding department. The main source of information for clinical coders is that derived from the medical record, and it is clinicians that act as the local resource in helping coders understand the clinical information relating to diagnoses and treatment. It is therefore important that clinicians and coders engage to improve record keeping, confirm codes and provide clinical leadership in identifying and coding co-morbidities.
57. Within the Health Board there is no clinical engagement with clinical coding. This was confirmed in our diary exercise which identified that no time was recorded for liaison with clinicians by coding staff during the period reviewed. Clinical engagement is particularly challenging for the coders in the Health Board as the majority of clinicians who provide care in the community hospitals are either not employed by the Health Board, or are general practitioners (GPs). All of which are in the community hospitals for very short periods of time, making access to medical staff very difficult.
58. As part of our review, we surveyed medical staff in three specialities to gauge their understanding of clinical coding and the extent to which they are involved in the process. We received little response to this survey from medical staff who work in the Health Board, which demonstrates some of the challenges of engaging clinicians. As new procedures are introduced in the Health Board through repatriation, it will become increasingly important for coders to engage with clinicians to be able to understand this new activity.
59. Where a clinical coding team is based within a hospital can be an important factor for clinical engagement. Coders are located in different parts of their respective community hospitals, but in the main they are not visible to clinicians. Breconshire War Memorial Hospital has the greatest level of activity across the Health Board, due in the main to the surgical activity that is undertaken at this site, however there is no coder based in Brecon. Increasing the visibility of the clinical coding team within Breconshire War Memorial Hospital may help to improve engagement with medical staff.
60. As is the case for medical records, clinical coding does not formally feature in induction training for medical staff when they first work in the Health Board. There is also little work being done to raise awareness of coding. The Health Board should be able to take assurance that visiting consultants from within Wales receive training on clinical coding within their host organisation, although early findings from our work would

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indicate that this is not the case. Visiting consultants from English NHS Trusts, however, are more familiar with clinical coding due to the application of payment by results in England.

61. GPs will not be familiar with clinical coding as it does not form part of their routine work. Given that the level of inpatient care under the management of a GP is the second highest in Wales after Betsi Cadwaladr University Health Board, it is important that the Health Board ensures that local GPs, however, are fully sighted of the role that they play in ensuring robust clinical coding.

### Validation processes are limited and there are no routine audit arrangements in place

62. To ensure that the clinical coded data submitted centrally is of good quality, it is important that health boards have appropriate mechanisms in place to verify and validate the data as it is processed.
63. Regular validation of coding is limited. Clinical coding across the Health Board is currently carried out using Myrddin, which is the Health Board's patient administration system. The Health Board, unlike all other health boards in Wales does not have an electronic encoder system in place eg, Medicode. This means that it cannot benefit from the inbuilt validation that the encoder system provides as well as the inbuilt guidance on coding classification rules, which prompts users to comply with national coding standards such as external cause codes and morphology codes.
64. Myrddin is also unable to generate the equivalent validation reports to those generated by Medicode to identify issues with the source data. The Health Board does use reports generated from the Health of Wales Information Service (HOWIS) to ensure quality, but these only provide limited checks.
65. The clinical coding staff have informal mechanisms to feed back issues with the validity of coding to each other through phone contact and individual meetings with the supervisor. All staff are reported to have received an annual performance appraisal and development review, which provides a more formal mechanism to feed back validity issues although the team would benefit from regular team meetings to discuss issues that may affect them all.
66. One of the identified models of good practice is to engage clinicians in the validation process. This provides an opportunity for clinicians to support the clinical coding process, but also allows them to be reassured about the validity of the clinical coding data which is often used to inform their own appraisals. This process can involve individual clinicians but can also be facilitated through attendance at specialty meetings such as grand rounds or specialty audit sessions where individual cases may be discussed. There is no engagement of clinicians in the validation process, and coders do not attend speciality meetings, including mortality reviews, which may identify issues with the underlying coded data.
67. As well as routine validation, one way of providing assurance of the quality of clinical coding is to undertake detailed audit reviews. There is currently no local programme of clinical coding audit in the Health Board, nor has there been any audit reviews

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undertaken in the last two years. A lack of a qualified clinical coding auditor within the Health Board means that a local programme of clinical coding audit cannot be put in place; however, the clinical coding supervisor is keen to introduce regular checks on coding to ensure consistency going forward. In light of the previous lack of a national programme of clinical coding audit, other health boards have commissioned external bodies which have the necessary skills to audit clinical coding. No external reviews have been commissioned by the Health Board.

**Clinical coded data is used appropriately and meets the Welsh Government standards but there are problems with the accuracy of coding, the implications of which need to be clearly identified to the Board**

**Clinical coded data is being used appropriately and standards of timeliness are good with no backlogs to affect the data, but there are issues with the accuracy of coding which need to be addressed**

**The Health Board achieved the national validity and consistency standards for data derived from clinical coding**

- 68.** In 2008, the Welsh Government set out the need for NHS bodies in Wales to adhere to 32 data validity standards relating to admitted patient care<sup>7</sup>. The validity of all admitted patient care data submitted to the Patient Episode Database for Wales (PEDW) is now routinely monitored against these standards on a monthly and annual basis. These data validity standards were the first phase of a series of updated monitoring mechanisms aimed at improving the quality of data in NHS Wales. A number of the data validity standards relate to data derived through the clinical coding process. For the financial year 2012-13, the Health Board met all of the data validity standards which relate specifically to clinical coded data.
- 69.** Further data quality indicators relating to data consistency have also since been introduced. Data consistency refers to whether related data items within the same dataset are consistent with one another eg, a record that indicates a male patient has given birth would be considered inconsistent. There are 27 data consistency indicators which are applied to admitted patient care, a number of which similarly relate to data derived through the clinical coding process. For the financial year 2012-13, the Health Board met all of the data consistency standards which relate specifically to clinical coded data.

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<sup>7</sup> Admitted patient care is the dataset submitted to the Patient Episode Database for Wales which contains the data relating to finished consultant episodes.

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The Health Board achieved the Welsh Government target that activity should be coded within three months with performance continuing to be achieved during the year to date

- 70.** To ensure that data is coded in a timely fashion Welsh NHS bodies are required to meet the timeliness and completeness targets as set by the Welsh Government. These targets form part of the Annual Quality Framework and are routinely reported within the performance management frameworks across NHS Wales. As discussed in paragraph 15, performance against these targets is not reported in the Health Board's Integrated Performance Report.
- 71.** For 2012-13, the Health Board met the targets for completion with all activity coded within the three month window following the episode end date. In July 2013, performance had slightly dipped to 99.8 per cent of activity coded within the three month window over a rolling 12-month period. This, however, is still above the Welsh Government target of 98 per cent.
- 72.** As part of our fieldwork, we requested the backlog position as at 30 September 2013. The Health Board reported no backlog. This is a positive position and indicates that there is scope within the team to extend the remit of its work without requiring additional capacity.

The review of clinical coding accuracy identified rates of error ranging between 0 and 37 per cent, with codes assigned to secondary diagnosis the most problematic

- 73.** As part of our review, we worked alongside the NWIS Clinical Classifications Team to undertake a review of the accuracy of clinical coding across the Health Board. The review was based on a sample of 90 episodes.
- 74.** The methodology used to undertake the review was based on audit methodology used in NHS England. The nationally recognised standard used to measure the accuracy of coding is set at 90 per cent. This relates specifically to four coding groups: primary diagnosis, secondary diagnosis, primary procedure, and secondary procedure.
- 75.** The review indicated the potential to improve accuracy in relation to primary and secondary diagnoses. Of the specialities reviewed, Trauma and Orthopaedics had the lowest results across all the standards indicating the need for further work in this area. A large proportion of the secondary diagnosis errors were due to conditions being recorded in the case notes but not being recorded by the coder. The high level results of the review are set out in the following exhibit, with further detail set out in the separate report issued directly to the Health Board from the NWIS Clinical Classifications Team.

Exhibit 4: Results of the review of the accuracy of clinical coding undertaken by the NWIS Clinical Classifications Team

	Percentage of codes recorded correctly in Powys Teaching Health Board	Percentage of codes recorded correctly in General Surgery	Percentage of codes recorded correctly in General Medicine	Percentage of codes recorded correctly in Trauma and Orthopaedics
Primary Diagnosis	85.6%	100%	93.3%	63.3%
Secondary Diagnosis	67.3%	66.7%	68.1%	66.7%
Primary Procedure	94.2%	100%	92.9%	89.3%
Secondary Procedure	94.9%	98%	95.9%	92.1%

Source: NWIS Clinical Classifications Team

Clinical coded data is being used appropriately throughout the Health Board although the implications of poor clinical coding on management information relating to both its own services and those of its providers need to be made more explicit to the Board

76. Clinical coded data should typically be used for statistical purposes only and to underpin a number of management processes within the NHS such as health needs assessment and performance management. With key patient outcome measures such as the Risk Adjusted Mortality Index (RAMI) coming increasingly into the public domain, it is important that the status of the clinical coded data that underpins these measures is visible to the reader or user.
77. Performance reports to the Board and sub-committees contain no information on the condition of the clinical coding data. Although we recognise that the Health Board is performing well against timeliness and completeness targets, the accuracy of its clinical coding data will have an impact on some of its management information, for example, patient outcomes, consultant activity and planning information to inform repatriation.
78. As a commissioning Health Board, the condition of clinical coding data within its provider NHS organisations is also vitally important. The Health Board does not participate in the benchmarking organisation CHKS, and consequently does not report RAMI; however, the RAMI for its provider organisations will be impacted by poor clinical coding data. The RAMI, for example, takes into account co-morbidities which should be recorded through the use of secondary diagnoses codes. If these codes are inaccurate, or co-morbidities are not picked up through the coding process,



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the extent to which a death is expected or unexpected can differ. The review of accuracy of clinical coding in the Health Board undertaken by the NWIS Clinical Classifications Team identified that a significant number (25.96 per cent) of co-morbidities recorded in the medical records were not assigned codes. This would have an adverse impact on a RAMI score should the Health Board participate in this mortality measurement going forward. There appears to be no specific reason for this other than a lack of care when analysing the medical information.

- 79.** Our survey of Board members identified that 13 out of 14 Board members who responded to our survey would find it helpful to have more information on clinical coding and the extent to which it affects the quality of key performance information.
- 80.** It is important, however, that the provision of a statement which sets out the condition of clinical coded data does not distract the focus of the reader or user away from the purpose for which the data is being used, for example, backlogs can be used as a reason for under performance against a key performance target. This was the case in Mid Staffordshire Hospital when high mortality rates were too readily attributed to problems with the clinical coding of the data that underpinned the figures. The findings of our survey of Board members would suggest that this is not the case in the Health Board, with 8 out of 10 Board members reporting that they were not concerned that the Health Board too readily attributes under performance against key indicators to problems with clinical coding.
- 81.** Clinical coded data has many purposes but it is not intended to support the clinical management of an individual patient as the coding classification structure can be misleading to a patient. As such, clinical coded data should not be used for that purpose. Our review of medical records did not find any evidence that clinical coded data was being used inappropriately.

# Appendix 1

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## Methodology

Our review of clinical coding took place in October 2013. Details of the audit approach are set out below.

### Document review

In advance of our fieldwork, we requested and analysed a range of Health Board documents. These documents included clinical coding policies and procedures, organisational structures, internal and external clinical coding audits, papers to senior management forums, workforce plans, minutes of meetings and training material.

### Board member survey

A survey of Board members was included in our Structured Assessment work for 2013 across Wales. The survey included a number of questions specifically focused on clinical coding, and was issued in August 2013 for a period of one month. Responses were received from 15 of the Board members in Powys Teaching Health Board.

### Medical staff survey

A survey covering a broad range of issues relating to clinical coding and medical records was issued to all medical staff in the specialties of general medicine, general surgery, and trauma and orthopaedics across Wales. In Powys Teaching Health Board, this included all visiting consultants for general surgery, and trauma and orthopaedics, and GPs with responsibility for community inpatient beds which are recorded as general medicine for the purposes of PEDW. In Velindre NHS Trust, the survey was issued to all medical staff in the specialty of oncology. The survey was issued electronically in November 2013 for a period of three weeks. Responses were received from only two medical staff in Powys Teaching Health Board. Given the low response rate, the results of the survey have not been included in this report.

### Interviews and focus groups

Our review team carried out detailed interviews and focus groups in the Health Board during the weeks commencing 21 October 2013.

Interviewees included executive and operational leads for clinical coding, head of information, medical records manager, clinicians for general surgery, general medicine, and trauma and orthopaedics, ward clerks, and the clinical coding manager and supervisor. A focus group was held with clinical coding staff.

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## Health board survey

We asked health boards to complete a survey providing details of their clinical coding arrangements. This included data relating to budgets and expenditure, staffing levels, the IT infrastructure supporting the clinical coding teams, as well as supplementary information relating to medical records. The completed health board survey was submitted in November 2013.

## Clinical coding diary

Clinical coding staff were required to complete a diary for a period of two weeks. The diaries were completed during the weeks commencing 4 November 2013.

## Case note review

Random samples of 30 coded episodes (per speciality and per coding team) were identified from PEDW for the three month period ending four months (allowing for the three month window to complete coding) immediately prior to the date of on-site fieldwork.

These samples were then reviewed, using medical records, by the NWIS Clinical Classification Team for accuracy of coding, and by our review team for compliance with the RCP standards for medical records. The period audited covered consultant episodes with an end date of 1 October 2012 to 31 March 2013 inclusive. The sample was limited to patients with a length of stay of 0 to 10 days.

## Medical records tracker

Random samples of 40 coded and uncoded episodes (per speciality and per coding team) were identified from PEDW for the three month period ending four months (allowing for the three month window to complete coding) immediately prior to the date of on-site fieldwork. These samples were then reviewed using the Health Board's medical records tracking tool. The period audited covered consultant episodes with an end date of 1<sup>st</sup> October 2012 to 31<sup>st</sup> March 2013 inclusive.

## Centrally collected data

Data relating to compliance with the data validity and data consistency standards were provided by the Information Standards Manager in NWIS. Data relating to compliance with Welsh Government targets for completeness and timeliness of clinical coding, along with backlog positions were also provided by the NHS Clinical Classifications Team.

## Appendix 2

### Results of the Board member survey

Responses were received from 15 of the Board members in Powys Teaching Health Board. The breakdown of responses is set out below.

#### Exhibit A2a: Rate of satisfaction with aspects of coding

	How satisfied are you with the information you receive on the robustness of clinical coding arrangements in your organisation?		How satisfied are you that your organisation is doing enough to make sure that clinical coding arrangements are robust?	
	Powys Teaching Health Board	All Wales	Powys Teaching Health Board	All Wales
Completely satisfied	1	6	1	12
Satisfied	1	43	2	45
Neither satisfied nor dissatisfied	7	36	6	30
Dissatisfied	1	9	1	7
Completely dissatisfied	–	–	–	–
Total	10	94	10	94

#### Exhibit A2b: Rate of awareness of factors affecting the robustness of clinical coding

	How aware are you of the factors which can affect the robustness of clinical coding arrangements in your organisation?	
	Powys Teaching Health Board	All Wales
Full awareness	1	36
Some awareness	5	45
Limited awareness	4	12
No awareness	–	1
Total	10	94

### Exhibit A2c: Level of concern and helpfulness of training

	Are you concerned that your organisation too readily attributes under performance against key indicators to problems with clinical coding?		Would you find it helpful to have more information on clinical coding and the extent to which it affects the quality of key performance information?	
	Powys Teaching Health Board	All Wales	Powys Teaching Health Board	All Wales
Yes	2	15	13	74
No	8	75	1	23
Total	10	90	14	97

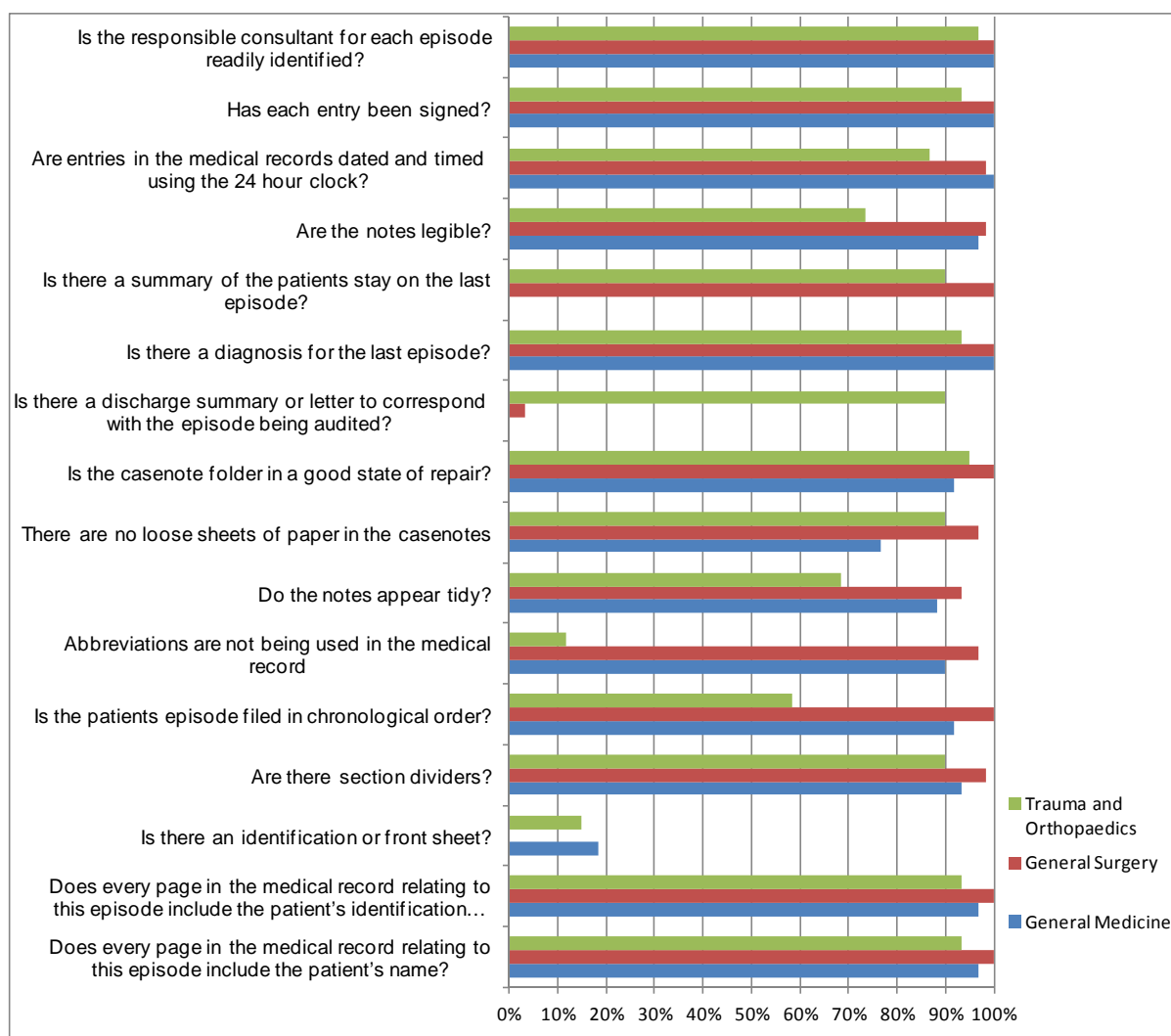
### Exhibit A2d: Additional comments provided by respondents from Powys Teaching Health Board

- I need to understand more about clinical coding.
- Little information on the nature, accuracy , or difficulty of clinical coding is ever discussed at the Board.
- I have very limited knowledge or experience of clinical coding which these questions have made me realise is a lack that I should try to correct.
- I haven't answered questions because I am unaware of our clinical coding arrangements or any issues linked with them.
- I am not familiar with the term 'clinical coding'.
- Powys performs well on clinical coding, but it is not a large part of our business given most of our clinical services are commissioned. For Powys the Board has received little information on the clinical coding issues that other organisations, including outside of Wales, may be facing.
- Clinical coding has not been a priority as we do not provide 'acute' services.
- Powys relies on external providers clinical coding. Generally better from English providers (timeliness and accuracy).

# Appendix 3

## Compliance with the Royal College of Physicians' Standards for Medical Records by specialty

Exhibit A4a: Level of compliance with RCP standards by specialty across Powys Teaching Health Board



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