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Review of Clinical Coding

Cardiff and Vale University Health Board

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Summary report

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 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 themselves 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% 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 in the past with significant numbers of cases waiting to be coded. The main reason for backlogs appeared 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% completion target on an on-going monthly basis, and not just at year end; and

- a new target that for any given 12-month period, 98% 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[1] 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 whilst there has been a strong focus on clinical coding in Cardiff and Vale University Health Board (the UHB), there are a number of weaknesses in arrangements and processes, which are effecting the generation of timely, accurate and robust management information. The current level of investment provides opportunities to make the necessary improvements. The reason for our conclusion is that:

- Clinical coding has a high profile at Board level supported by a good level of investment and there are opportunities to strengthen the coding team's management structure and improve integration with medical records and the wider informatics agenda:
  - Clinical coding is a corporate priority, with a good level of understanding of coding by board members but robustness of arrangements is a concern amongst members and the focus is limited to mortality.
  - There is a clear line of accountability for clinical coding direct to the Board but the structure lacks stability and supervisory support, is not well integrated with the wider informatics agenda and the relationship between coding and medical records needs to be strengthened.

[1] The Clinical Classifications Team provides support and guidance to clinical coders in NHS bodies and forms part of the NHS Wales Informatics Service.

- The clinical coding team is well resourced which presents opportunities to develop supervisory posts within existing staff levels although greater focus needs to be given to introducing the Accredited Clinical Coding qualification which would enhance the quality of coding.

- The effectiveness and sustainability of the clinical coding process is undermined by the quality and availability of information, a lack of clinical engagement, limited validation and audit processes and an unsustainable management structure:
  - The clinical coding policy is in line with national guidance but needs to be updated to reflect changes to the management arrangements.
  - There is variation with access to information which is more problematic at UHW, and there are issues surrounding the quality of medical records:
    - the coding team at Llandough are generally able to access medical records quickly, but many records across the UHB are not tracked and access to records at UHW is problematic with between 10 and 20% of records taking longer than three months to be received by the department;
    - the quality of medical records is generally good, but the presence of loose notes, temporary folders and the lack of discharge summaries, needs to be addressed; and
    - coders have access to a range of electronic clinical systems, although this is not consistent between staff and there is no access to the internet, which makes it difficult for staff to access necessary resources.
  - The clinical coding approach is consistent across the sites, although the UHB should continually review the single allocation of specialties to codes and be flexible in its approach to ensure that coding demand is managed effectively.
  - There are some positive aspects to the workforce however mentoring for new staff is an issue and without effective succession planning and career progression, valuable experience, knowledge and enthusiasm may be lost.
  - Clinical engagement with the coding process is limited.
  - Validation arrangements are limited with no audit arrangements in place and a lack of appraisals and team meetings means that there are no formal opportunities to feedback errors to staff.

- Clinical coding data is used appropriately but despite positive progress in clearing the backlog of uncoded episodes, the UHB has failed to achieve timeliness targets, some coding is inaccurate and there are concerns that problems with coding are distracting attention away from poor performance:
  - Although clinical coded data meets the targets for consistency, the UHB is failing to achieve the timeliness targets set by the Welsh Government and there are some significant issues with the accuracy and validity of the data, particularly in relation to diagnoses:

- the UHB met the national consistency standards for data derived by clinical coding for 2013-14, but it failed to meet all of the national validity standards;
- although there has been improvement in the level of episodes coded within the Welsh Government timescales, the UHB is still not achieving the targets for episodes coded within a three-month window and over a rolling 12 month period; and
- the review of accuracy identified error rates ranging between six and 24%, with most errors relating to the coding of diagnoses.

– Clinical coded data is being used appropriately although there are some concerns that problems with clinical coding are distracting attention away from poor performance.

Recommendations

11. We make the following recommendations to the UHB.

Clinical coding resources

R1 Strengthen the management of the clinical coding team to ensure that good quality clinical coding data is produced. This should include;

- ensuring a permanent arrangement is put in place for the Clinical Coding Manager post;
- establishing the role of clinical coding supervisors within the existing structure to support the day-to-day management of the clinical coding teams across the UHB and provide opportunities for career progression;
- ensuring that there is capacity to allow band 4 coders to undertake mentoring and checking of coding of band 3 staff in line with job descriptions;
- revisiting the allocation of specialities across staff to ensure that there is sufficient flexibility within the existing capacity to cover periods of absence and succession planning is in place for staff who are due to retire in the next five to ten years;
- considering the implementation of the accredited clinical coding qualification;
- putting arrangements in place to ensure that all staff receive an annual performance appraisal and development review;
- increasing levels of engagement between the different teams within the UHB, to provide opportunities to raise issues, develop peer support arrangements and share knowledge;
- updating the clinical coding policy to reflect the current operational management arrangements;
- working with colleagues within the Informatics Directorate to look at the potential to move Medicode to a central server arrangement;
- allowing all clinical coding staff access to the appropriate clinical information systems and the internet; and

- increasing the range of validation and audit processes, including the consideration of the appointment of an accredited clinical coding auditor.

Medical Records

R2 Improve the arrangements surrounding medical records, to ensure that accurate and timely clinical coding can take place. This should include;

- reinforcing the Royal College of Physician (RCP) standards across the UHB and developing a programme of audits which monitors compliance with the RCP standards;
- improving compliance with the medical records tracker tool within the UHB Patient Administration system (PAS);
- putting steps in place to ensure that notes that require coding are clearly identified at ward level and that clinical coding staff have early access to medical records, particularly at UHW;
- improving engagement between the clinical coding department and medical records, including the establishment of a Health Records Committee with representation from the clinical coding team;
- reducing the level of temporary medical records in circulation;
- considering the roll out of the digitalisation of health records to the Teenage Cancer Unit to allow easier access to clinical information for clinical coders; and
- revisiting the availability of training on the importance of good quality medical records to all staff.

Board Engagement

R3 Build on the good level of awareness of clinical coding at Board to ensure members are fully informed of the UHB's clinical coding performance. This should include:

- ensuring that information that gets reported to the Board and through its sub-committees reports the accuracy of clinical coding;
- considering the potential to link clinical coding performance and the wider implications for data quality into the business of the Information Governance Group; and
- raising the awareness amongst Board members of the wider business uses of clinically coded data.

Clinical Engagement

R4 Strengthen engagement with medical staff to ensure that the positive role that doctors have within the clinical coding process is recognised. This should include;

- re-enforcing the importance of completing discharge summaries to aid the coding process;
- ensuring that clinical staff receive an appropriate level of on-going training with regards to the process and purposes of clinical coding, outside of initial junior inductions;
- establishing validation processes that involve clinical staff, which will act to both improve clinical engagement and act as a form of accuracy review; and
- improving the 'visibility' of coding staff, to ensure that clinical engagement operates as a two-way process.

Source: Wales Audit Office 2014

Detailed report

Clinical coding has a high profile at Board level supported by a good level of investment and there are opportunities to strengthen the coding team's management structure and improve integration with medical records and the wider informatics agenda

Clinical coding is a corporate priority, with a good level of understanding of coding by board members but robustness of arrangements is a concern amongst members and the focus is limited to mortality

12. Our observation of boards as part of our Structured Assessment[2] 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 13 of the board members in Cardiff and Vale University Health Board. The full results from our survey of board members are in Appendix 2.

14. The responses to the survey indicate that:

- all board members who responded to the survey reported that they had full or some awareness of the factors affecting the robustness of clinical coding; however
- only 7 of the 13 board members (54%) who responded to the survey said that they were completely satisfied, or satisfied that the UHB was doing enough to make sure that the clinical coding arrangements were robust; and
- only 7 of the 13 board members (54%) were satisfied or completely satisfied with the information that they received on the robustness of clinical coding arrangements within the UHB.

15. Over the last two years, clinical coding has received significant attention at the Board with a primary focus on the need to report a Risk Adjusted Mortality Index (RAMI). The board has received dedicated clinical coding updates, which has allowed consideration of specific clinical coding issues. This has included the coding demand, the rolling 12-month completeness rate, and the number of episodes coded per month. This focus subsequently led to Board approval to invest in external support from CHKS to clear the coding backlog relating to activity prior to 2012.

[2] The Structured Assessment work examines the arrangements in place to secure efficiency, effectiveness and economy in the use of NHS resources

16. Following internal concerns with the quality of the coding from CHKS, the Board approved a further £117,000 to appoint a bank of 20 clinical coders from September 2013 to work weekends up until March 2014 to clear backlog relating to 2012-13. Since November 2013, detailed updates to the Board have been stepped down following improved performance towards achieving the Welsh Government targets.

17. The Board however continues to routinely receive information in relation to clinical coding through performance reports. There is also consideration of coding at a committee level, with the Quality, Safety and Experience Committee, and the People, Performance and Delivery Committee both receiving information relating to coding performance. The focus of this information however is to provide assurance against the Welsh Government targets but primarily to provide assurance around the robustness of the reported RAMI information as opposed to the wider management information which is underpinned by coded data. In common with other health boards across Wales, there is no reporting at Board level on the accuracy of clinical coding.

There is a clear line of accountability for clinical coding direct to the Board but the structure lacks stability and supervisory support, is not well integrated with the wider informatics agenda and the relationship between coding and medical records needs to be strengthened

18. In the UHB, clinical coding is part of the Informatics Directorate with overall responsibility resting with the Director of Finance. This has been the case since June 2013. Prior to that, responsibility sat with the Director of Planning, and before that the former Director of Innovation and Improvement. Day to day management is by the Acting Clinical Coding Manager who reports to the Head of Information, who in turn reports to the Assistant Director of Performance and Information. Although he has no executive responsibility, the Medical Director is also a strong advocate for clinical coding at board level, alongside the nominated executive lead.

19. The Acting Clinical Coding Manager oversees the operation of the clinical coding function. There are two clinical coding teams; University Hospital Llandough (Llandough) and University Hospital Wales (UHW). The team at UHW however are split into two with the majority of staff based in Denbigh House. A small number of staff are based in B2 in the main UHW building. Unlike all other health boards across Wales, with the exception of Powys, there are no supervisor posts in place within the UHB, and therefore all 36 coding staff in post report directly to the Acting Clinical Coding Manager, which is not sustainable. This is compounded by the additional workload for the Acting Clinical Coding Manager in relation to also managing the bank of clinical coders.

20. The Acting Clinical Coding Manager is based in Denbigh House and will undertake visits to the other sites. The Llandough team felt that they were self-sufficient and needed little input from the manager. The Acting Clinical Coding Manager does however visit Llandough every two weeks, though in instances of leave, this can spread to three weeks. The Acting Clinical Coding Manager was intended to be a short-term interim arrangement following changes to the operational management arrangements. However, this arrangement has now been in place for well over a year, which has the risk of making the clinical coding team unstable and unsettling.

21. Because clinical coding forms part of the Informatics Directorate, there is the potential for direct links with the data quality agenda and the wider Information Governance arrangements. However, minutes from the Information Governance Group would indicate that there is no discussion in relation to the impact of data quality issues arising from clinical coding, and the important role that clinical coding plays.

22. Although a proportion of information needed for coding is available electronically, a patient's medical record is a vital source of information to enable clinical coders to record the diagnoses and procedures relating to a hospital stay accurately. Consequently, it is recommended that clinical coders code directly from medical records. The quality of medical records therefore has an effect on the accuracy of clinical coding.

23. The medical records department forms part of the Clinical Service Board for Clinical Diagnostics and Therapeutics. Clinical coding historically has had a positive relationship with medical records as the main team at UHW were based within the medical records department, and operational management had been through the head of medical records. However ten years ago, the coders were moved out of the medical records department when more space was needed to accommodate the new booking office, and more recently changes in the operational management arrangements has meant that medical records and clinical coding functions could benefit from a more formal relationship to ensure that they work together efficiently and effectively.

24. One way of bringing clinical coding and medical records together is through a Medical or Health Records forum. The UHB currently does not have a Health Records group, which means that there is limited opportunity for escalating issues relating to the quality of medical records, which may be consistently affecting the clinical coding process. As part of our medical staff survey, we asked the opinion of staff of the overall quality of medical records. Five out of the 22[3] respondents reported that the quality was good or very good, with a further ten reporting that the quality was average. Seven of the 22 respondents reported that the quality of medical records were below average, or poor. The main results from our medical staff survey can be found in Appendix 3.

[3] Responses to our medical staff survey were considerably low, however the findings of the survey correlate with the wider views of medical staff identified through interviews.

25. Our fieldwork identified that the UHB has adopted the Royal College of Physicians (RCP) standards[4], in an attempt to drive up the quality of the medical records. However, the medical staff survey shows limited knowledge of the existence and the implementation of these RCP standards. In addition, 18 of the 21 respondents (86%) were not sure if the UHB had adopted any internal standards.

- nine out of the 22 respondents (41%) were aware of the RCP standards; but
- only one of the nine (11%) who were aware of the RCP standards, said that the standards had been adopted by the UHB.

26. One way of improving the quality of medical records is by embedding the importance of medical records in the training of staff. Training for existing clinical staff has fallen away in the last few years, however, staff identified that standard medical record training is available to junior staff particularly on induction.

27. In the responses to the medical staff survey, 20 of the 22 respondents (91%) stated that they had not received any training to improve record keeping in the previous two years. In addition, 19 of the respondents (86%) stated that they had not been involved in any reviews relating to the context and structure of medical records.

The clinical coding team is well resourced which presents opportunities to develop supervisory posts within existing staff levels although greater focus needs to be given to introducing the Accredited Clinical Coding qualification which would enhance the quality of coding

28. 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.

29. 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 to emergency departments who are not admitted.

[4] 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

30. The clinical coding budget for the year 2013/2014 in the UHB was £942,174, an increase of 24% from the 2012/2013 budget of £717,619. This is primarily because of the cost associated with the contract for external clinical coders to respond to the backlog of episodes. In both 2010/2011 and 2012/2013 the total coding expenditure exceeded the budgets for that year, which indicates potential pressure on budgets. The level of staff in post exceeded establishment during 2012/2013 indicating that some of the appointments to coding had been done so 'at risk', which would have placed pressure on the coding budget. The increase in budget for 2013/2014 has recognised the current establishment, which is positive.

31. Staffing accounts for 92% of the budget. As at 30 September 2013, the UHB had a total funded establishment of 37.77 full-time equivalents (FTEs). Staffing levels have increased by 25% since March 2012, when the funded establishment was 30.24 FTEs.

32. The core clinical coding team (i.e. those staff whose primary role is to undertake clinical coding) is 30.3 FTEs (consisting of 15.87 at Band 4 and 14.43 at Band 3). If demand from FCEs continues in line with 2012-13, the required level of core clinical coding staff needed to meet FCE demand would be in the region of 26.17 FTE's[5]. This is based on a recognised standard workload level of 30 FCE's per day per full-time coder. This would indicate a surplus in the current staffing establishment for the core clinical coding team of 4.13 FTE's. However, an element of this surplus is used to code outpatient procedures and short-stay emergency admissions.

33. The backlog position as at 30 September 2013, based on the recognised standard workload, would indicate a further requirement of 2.78 FTE's however given that the UHB has contracted additional resources externally and the backlog position is reducing, it would appear that the current establishment level for the clinical coding department is set to high. However, we recognise that the UHB set the current establishment level as part of the Backlog Recovery Plan to allow flexibility within the coding capacity to improve and maintain productivity and to extend the range of activity, which is coded. Given the surplus within the core clinical coding team, there is however potential for the UHB to consider the creation of supervisor posts within its existing establishment. This would reduce the pressure on the acting Clinical Coding Manager, provide career opportunities within the team and provide opportunity to develop a programme of clinical coding audit.

34. 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 staff have attended the NWIS foundation course, however some staff have commented that other training available often has limited relevance to the work undertaken by the coding teams, particularly in relation to the more specialised specialties. We will be considering the availability of training as part of our review of clinical coding arrangements at a national level.

[5] Calculation based on FCE activity for 2012-13, divided by workload assumption of 30 FCE's per day, divided by a standard availability of 200 working days per year per full time equivalent (FTE) (excluding bank holidays, leave entitlements and commitments to training and development (including mandatory training and personal development reviews)).

35. There is currently, however, no UHB 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 qualification which is acknowledged 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 UHB to develop its own programme of clinical coding accuracy reviews.

36. With the exception of the Clinical Coding Manager post, the UHB does not require any of its clinical coding staff to be accredited at appointment, or to gain accreditation whilst in post, although there are four members of staff who are accredited. In order to progress to a Band 4 in the UHB, staff have to pass an internally set and marked exam. This exam has been approved by NWIS although some staff raised concerns that the Acting Clinical Coding Manager currently sets and marks the exam, despite not having the coding experience of many clinical specialties. The Acting Clinical Coding Manager is however, ACC accredited and has been following a process that has been in place for many years. In many other health boards, staff must achieve the accredited clinical coding qualification to fulfil a Band 4 role. Many of the staff within the UHB are already on Band 4 which means that there is little incentive for them to undertake the ACC qualification, however should they wish to move to another health board then a lack of an ACC qualification would make appointment difficult. Where staff do need to undertake training, the UHB will provide financial support and in 2012-13 spent in the region of £400 on training and development.

The effectiveness and sustainability of the clinical coding process is undermined by the quality and availability of information, a lack of clinical engagement, limited validation and audit processes and an unsustainable management structure

The clinical coding policy is in line with national guidance but needs to be updated to reflect changes to the management arrangements

37. The UHB has a comprehensive clinical coding policy. This was issued in February 2012, and is due to be reviewed in February 2015. The policy includes standard coding procedures, the validation practices within the organisation, the structure of the department, as well as local policies. It is easy to read and as such, is a useful guide for staff. However given the changes to the operational management of the clinical coding team over recent years, some of the information contained in the policy is now out of date.

38. As clinical coding staff are located across multiple sites, it is important that the policy is applied consistently across the UHB. From the fieldwork undertaken as part of this review, there were no significant discrepancies identified between the working practices across the sites. The only discrepancy identified was the coding of episodes relating to the emergency assessment units, which are coded at Llandough but not at UHW.

39. 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.

40. 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 UHB's Acting Clinical Coding Manager is represented on the national groups and plays an active role in national discussion.

41. 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. There are currently no supplementary policies in operation at Cardiff and Vale University Health Board.

There is variation of access to information which is more problematic at UHW, and there are issues surrounding the quality of medical records

The coding team at Llandough are generally able to access medical records quickly, but many records across the UHB are not tracked and access to records at UHW is problematic with between 10 and 20% of records taking longer than three months to be received by the department

42. To facilitate the achievement of the Welsh Government target that 95% 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 patient's medical records.

43. 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.

44. As part of our fieldwork, we undertook a tracking exercise, using the medical records tracking tool[6], 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. We undertook this exercise at UHW and Llandough. Of the 120 records that we reviewed at each of the sites, we were unable to track 35% at Llandough Hospital and 30% at UHW. This was due to records not being tracked on the PAS system, and in the main related to general medicine. Untracked records can make locating a patient's record very difficult and create risks to both administrative processes but more importantly to the provision of patient care should be the patient be admitted. Untracked records also create a risk that temporary records will be set up in the event that records cannot be found quickly.

45. Of those records that we were able to track, the average speed of access to records by coders was 24 days at UHW, compared to only 5 days at Llandough. In addition, all records tracked to the coding team in Llandough were received within three months, but at UHW, between 10 and 20% (across the different specialties) of records were received outside the three-month window. Given that the Welsh Government's timeliness targets for coding is three months, this reduces the ability of the coding team at UHW to meet the Welsh Government timeliness target. More detail is provided in Exhibits 1a and 1b below.

Exhibit 1a: Speed of access to medical records following discharge or transfer in University Hospital Wales

		General Medicine	General Surgery	Trauma & Orthopaedics
Speed of accessing medical records (Days)	Average	49	17	23
	Shortest	1	1	1
	Longest	113	111	117
Percentage of medical records received by the coding team	…within 4 weeks (1 month) of discharge	46.7%	82.8%	80.0%
	…within 8 weeks (2 months) of discharge	66.7%	89.7%	87.5%
	…within 12 weeks (3 months) of discharge	80.0%	89.7%	90.0%

Source: Wales Audit Office 2014

[6] 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 Cardiff and Vale University Health Board, the tracking tool forms a specific module on the PAS system.

Exhibit 1b: Speed of access to medical records following discharge or transfer in University Hospital Llandough

		General Medicine	General Surgery	Trauma & Orthopaedics
Speed of accessing medical records (Days)	Average	55	4	2
	Shortest	39	1	0
	Longest	80	82	5
Percentage of medical records received by the coding team	…within 4 weeks (1 month) of discharge	0.0%	97.1%	100.0%
	…within 8 weeks (2 months) of discharge	66.7%	97.1%	100.0%
	…within 12 weeks (3 months) of discharge	100.0%	100.0%	100.0%

Source: Wales Audit Office 2014

46. To support timely access to medical records, and to reduce the time spent by clinical coding staff tracking down medical records, 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 UHB employs 4.0 WTE runners at UHW (2 of which are temporary staff), and 0.47 WTE runners at Llandough.

47. A diary exercise undertaken for a period of two weeks indicated that just under 5% of coder's time was spent tracking records. This indicates that the presence of runners has a positive impact on the time that clinical coders have to code medical records. However, this still equates to approximately 29 hours per week.

48. Observations of a sample of ward areas, indicates that there are different approaches to filing medical records on the wards. While some areas appear to be well organised with a clear system in place to indicate to the runners, which medical records need to be coded, others were less organised. As a result, coders identified that they would routinely receive notes from the wards that they had already coded. This creates unnecessary workload for the clinical coding team, including the runners, and as such the clinical coding team need to work with wards to make sure that systems are put in place to prevent this problem occurring.

The quality of medical records is generally good, but the presence of loose notes, temporary folders and the lack of discharge summaries, needs to be addressed

49. 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.

50. As part of our fieldwork, we reviewed a sample of 180 medical records across three specialties (General Medicine, General Surgery and Trauma & Orthopaedics). The review was to determine compliance with 16 of the record keeping standards laid down by the Royal College of Physicians. Representatives from the NWIS Clinical Classifications team used the same sample to complete the review of clinical coding accuracy.

51. Of the 180 records reviewed, we identified an overall compliance rate of 92%, which is positive. The standard of medical records was marginally better at Llandough (94%), than UHW (91%). Equally, there were variations in record quality between the different specialities with Trauma and Orthopaedics having the lowest compliance rate at 91%, and General Medicine having the highest compliance rate at 95%. More detail is provided in the following exhibit:

Exhibit 2: Overall percentage level of compliance with RCP standards by hospital site and specialty within Cardiff and Vale University Health Board

	General Medicine	General Surgery	Trauma & Orthopaedics
University Hospital Wales	93.54%	89.48%	88.75%
University Hospital Llandough	95.83%	93.33%	92.81%

Source: Wales Audit Office 2014

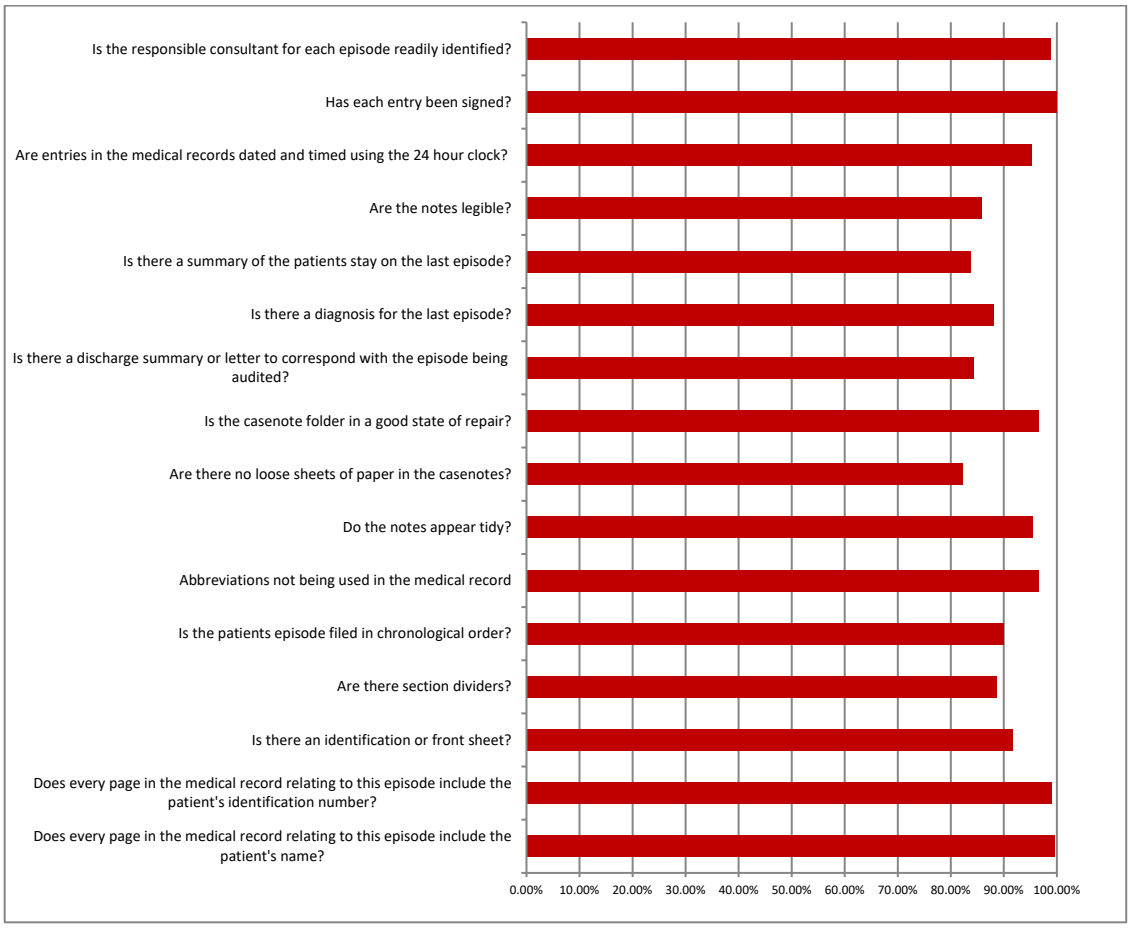
52. Within the UHB, the medical records team have responsibility for setting up the record and ensuring that it is stored appropriately. Through the collation team, the medical records are also responsible for filing information, which is unique to this UHB. The quality of the information recorded in the medical records however rests with clinical staff, and the extent to which information is made available for filing rests with clerical staff such as ward clerks and medical secretaries.

53. Our review of medical records identified that the standards that were most problematic (Exhibit 3) fall under the responsibility of clinical staff. Such standards include the completion of discharge summaries and illegible writing. The lack of completed discharge summaries can cause problems for coders as it becomes difficult for them to identify the diagnoses and procedures undertaken.

54. Loose notes within the record were also of particular concern, as this creates a risk of information becoming mislaid or not being merged into the formal record. Because the medical records team are responsible for the collation of records, when the clinical coding team receive them direct from the wards, they routinely contain loose papers and are disorganised in the way they have been put together. This can make the coding of an episode more difficult and time consuming as coders have to spend longer looking through all information to make sure that nothing is overlooked.

55. Our review of medical records also found a considerable number of temporary folders. This was supported by the findings from our medical staff survey, which identified that 59% of respondents said that temporary notes were in use often or frequently. The use of temporary records is also a risk, as medical records may not contain a patient's full medical history. As well as a clinical risk, this has implications for the quality of clinical coding as relevant previous medical history may be omitted from the coding of a patients episode of care. The issue of temporary notes appeared to have stemmed from a number of new staff in the medical records department who were incorrectly filing medical records in the library. A breakdown of the compliance rate against the RCP standards by site and specialty is included in Appendix 4.

Exhibit 3: Overall level of compliance against the RCP standards



Source: Wales Audit Office 2014

Coders have access to a range of electronic clinical systems, although this is not consistent between staff and there is no access to the internet, which makes it difficult for staff to access necessary resources

56. 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 (LIMS). 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.

57. Coding staff in the UHB have access to a number of clinical systems, but not all staff have access to all systems. For example, not all members of staff have access to the theatre information system. Providing staff with access to specialist clinical systems will allow them to check information required for the clinical coding of patient episodes, which can overcome some of the issues relating to poor quality or illegible notes.

58. As well as access to electronic clinical information, it is also important that clinical coders have access to the internet and intranet to allow staff to access the necessary training and resource available, in addition to carrying out any online research where appropriate. Unlike all other coding departments across Wales, coders in the UHB do not have access to the Internet.

59. It is important that clinical coders have access to the systems and technology that they need to ensure that coding is accurate and timely.

The clinical coding approach is consistent across the sites, although the UHB should continually review the single allocation of specialties to coders and be flexible in its approach to ensure that coding demand is managed effectively

60. Staff are located in a specific district general hospital (DGH). The majority of their workload focuses solely on the activity within the base DGH site and its respective community hospitals. The clinical coding teams however do not code mental health episodes, even though this activity does affect the completeness figures for the UHB. These are currently the responsibility of the Clinical Board for Mental Health within the UHB, which is common with a number of other health boards in Wales.

61. 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 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, e.g. on annual or sick leave.

62. Clinical coders in the UHB are assigned one specialty, with the exception of the recently appointed coders who cover all specialties. Coders do not routinely rotate specialties and therefore may remain coding a particular specialty for a considerable period. As noted above, this can allow for additional competency in complex areas but can also lead to knowledge gaps and succession issues should staff need to move around or cover each other. During our work, we observed the coders working and noted that there is limited peer support between the teams, with the exception of those staff who are based in the same office and code the same specialties. Occasionally there will be phone calls between teams to clarify certain points, but the teams do not meet as a whole department. During our work, we also identified that when staff are away from the office for long periods, such as maternity leave, the remaining coders had to cover their workload despite not having the necessary expertise. The UHB should review the allocation of specialties across the teams to consider the potential of allocating coders to a number of specialties. This will allow coders to maintain their skills on particular specialties but also give the department some flexibility to share the workload across the team in the event that they are not available.

63. When notes are available, the runners will collect them from the wards or the medical records department and bring them to the respective coding office. These records are then stored in date order by speciality, although capacity within the office at Denbigh House to store notes can be problematic. Coders then code their speciality, according to the order in which the notes come into the department, with the exception of:

- 2013-14 cases which have fallen outside the three-month window, which are currently assigned to the recently appointed Band 3 coders; and
- long-standing backlog cases which are currently assigned to a bank of contract coders that have been appointed to clear the backlogs relating to 2012-13.

64. The UHB committed a workload level of 12,500 FCE's to the contract coders. During our fieldwork, we were told that at times there is capacity within the permanent staff to code some of the 2012-13 backlog cases but because of the need to ensure the contract coders deliver the agreed level of FCE's, there has been a risk that permanent staff have felt that their time has been used ineffectively.

65. The clinical coding teams will also prioritise deceased patients in order to allow timely mortality reviews. Prioritisation of deceased patients can however distort the RAMI data if there are problems with backlogs. In effect it can decrease the denominator used for the RAMI data (i.e. the total number of patients) by excluding live patients by the nature that they are not yet coded. Caution needs to be taken prioritising deceased patients if there are backlogs of workload building up.

66. 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 completion of the coding process. Due to issues with the completion of tracking, we were only able to assess 162 records. Of those records, our review at UHW and Llandough Hospital identified that once medical records were received in the department, cases were coded relatively quickly:

- 57% of records coded within three days.
- 76% of records coded within a week.
- 89% of records coded within a fortnight. Medical records for general medicine generally took longer to code, due to the complexity of the case mix within that specialty, with 78% of general medicine notes coded within a fortnight.

67. However, there were discrepancies again between the different DGH sites across the UHB, with UHW coding 86% of episodes within two weeks of receipt of the notes, compared to 92% at Llandough Hospital.

68. Clinical coding across the UHB is currently carried out using an electronic encoder system called Medicode. There are a number of issues with the system as it stands. Medicode is held on individual machines within the UHB and therefore when an update is required it is therefore necessary to update each machine individually. This update can be time consuming and resource intensive compared to hosting Medicode on a central server, which would require only a single update. The clinical coding team needs to work with colleagues in the Informatics Directorate to address this problem.

69. The B2 coding office at UHW deals with the coding of episodes for the Teenage Cancer Unit. Due to the on-going treatment plans for many of these patients, the Teenage Cancer Unit is reluctant to release patient records and therefore the coders have to access the notes on the ward. Access to electronic systems however is problematic for these coders on the ward and consequently, they have to manually code the notes on a paper basis and then transfer the information to the Medicode system when they return to the office. The size of the unit also means that the coders feel under pressure to code the notes quickly so they do not get in the way of clinical staff, which could have a detrimental impact on the accuracy of coding. The UHB are currently going through a process of digitalising patient records. This process will provide the coding team with electronic access to a scanned copy of the patients' paper based medical records, which will alleviate the problem that the coders are currently experiencing with coding the Teenage Cancer Unit episodes.

There has some positive aspects to the workforce however mentoring for new staff is an issue and without effective succession planning and career progression, valuable experience, knowledge and enthusiasm may be lost

70. Staff turnover has been high within the clinical coding team. In the last two years, 5.42 FTE have left and 14 FTE have been recruited, with a further two appointed on a two year fixed term contract. At the time of our fieldwork, there were vacancies for 2.91 FTE. These posts had been vacant for between one and three months, and recruitment is restricted to internal appointments only. Sickness levels have been high within the department over the last couple of years, with 8.2% in 2011-12 and 9.4% in 2012-13. However, sickness levels have improved over the last year with the sickness rate to September 2013 running at around 2.5%. The team do however continue to experience workload pressures because of staff on maternity leave.

71. There is a good level of clinical coding experience in the department, with 53% of the team having five or more years' experience. However, seven members of the department are aged 56 or over and therefore likely to retire within the next five years, with a further member of staff over 50. Given the single allocation of specialties to many of the coding staff, it is important that the UHB puts appropriate succession plans in place for the specialties for which these staff code so as not to lose their knowledge and experience when they retire.

72. To support succession planning, the UHB has looked to increase the number of trainees in the team with a higher number of Band 3 staff in post than was previously the case. All new staff to the department are appointed at Band 3. These new staff are not supernumerary and are therefore given their own allocation of work. According to job descriptions, Band 4 staff mentor the trainees. However, there is no formal mentoring programme for new starters within the team, and a review of the diary exercise identified that only 1% of time was spent on mentoring, or checking the work of other coders. Mentoring and review of work by more senior staff is an important tool, not only in ensuring the initial accuracy of the coding, but also in terms of the longer term development of the new band 3 coding staff, and resources should be put in place to ensure that there is capacity to allow this mentoring function to occur.

73. There are currently no supervisor posts within the clinical coding structure. This means that staff have no opportunity for career progression with the exception of the Clinical Coding Manager post should it become vacant. As mentioned in paragraph 33 there is however the potential to create supervisory posts within the current establishment which would provide that opportunity. The department has seen a number of new recruits to the department who have demonstrated a strong willingness to learn and progress, however if a clear career progression is not available, then there is a risk that these staff will leave the department. The development of supervisory roles within the team would provide an opportunity to build on that enthusiasm that already exists amongst the team.

Clinical engagement with the coding process is limited

74. 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.

75. Within the UHB, clinical engagement is extremely limited. The results of the medical staff survey indicated that less than half of the respondents (ten out of 21) were either satisfied or completely satisfied that they had a clear understanding of the purpose of clinical coding. However, only one of the 21 respondents (5%) had been involved with clinical coding staff within the UHB. Our diary exercise confirmed that engagement with clinicians is limited with less than 1% of the coders time over the two week period spent liaising with clinicians

76. Where a clinical coding team is based within a hospital can be an important factor for clinical engagement. All teams are based on the main DGH site, although both the Llandough office and the Denbigh House office are well away from the main clinical areas. Eighteen of the 22 respondents (81%) to the medical staff survey stated that they had no idea where clinical coders were based.

77. Engagement with clinicians however plays both ways, with responsibility also resting with the clinical coding staff to seek clarification from medical staff on episodes of care or patients, where necessary and to be visible with the clinical areas. To this extent, nearly all respondents to the medical staff survey stated that they felt that either coders were rarely, or not at all visible within the organisation. Six out of 21 respondents (29%) did however report that coding staff had sought clarification on episodes of care for patients that they had been responsible for.

78. Clinical coding training is included within the induction process for Junior Doctors, forming part of the discharge training. There is also provision for clinical coding training at the induction of consultants, although this is delivered in the form of a coding “stand” that clinicians can visit as opposed to a traditional presentation. There has been more interest generated in coding training, because of consultants attending from England. However, whilst the structure for delivering coding training may be in place, it is apparent that it not necessarily working in practice. When asked if clinical coding training formed part of their induction, all of the respondents to the medical staff survey stated either “No”, or that they could not remember. Equally, all of the respondents stated that they had not received any training relating to clinical coding in the last two years, although nine said that they would like to receive training.

Validation arrangements are limited with no audit arrangements in place and a lack of appraisals and team meetings means that there are no formal opportunities to feedback errors to staff

79. 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.

80. The UHB's clinical coding policy re-enforces the importance of the validation process, and states that monthly reviews, by specialty rotation, should be carried out by internal Accredited Clinical Coders. However, our fieldwork identified that this validation is rarely happening. The encoder system Medicode provides some automated validation of coding as it is input onto the system, and the Acting Clinical Coding Manager will also run a validation report to identify any basic errors.

81. During our fieldwork, we were told that there is currently no formal process for feeding back any errors to the clinical coding staff to ensure that the same errors are not made again in the future. The clinical coding staff do not meet as a whole team, nor do they have routine meetings at a site level. We were also told that many staff had not received an annual performance appraisal and development review, with some not receiving an appraisal since 2008. Both of these mechanisms would provide opportunities to feed back issues with the validity of clinical coding to staff.

82. 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. Our fieldwork identified that to date there is limited clinical involvement in validation, and where it has existed, it has been centred around mortality reviews:

- Only three out of 21 respondents (14%) reported that they had been engaged in validation of clinical coding over the last two years.
- Only two out of 21 respondents (10%) reported that a representative from clinical coding attended a meeting that they had been present at to provide input into the discussions. A further seven (33%) said that they were unsure.

83. Clinical coders had previously been routinely involved in mortality reviews, which had provided an opportunity to identify issues with the validity of clinical coding and opportunities to strengthen clinical engagement. However this involvement has since stopped.

84. As well as routine validation, one way of providing assurance of the quality of clinical coding is to undertake detailed audit reviews. There has been no local programme of clinical coding audit in the UHB, nor has there been any audit reviews undertaken in the last two years. A lack of a qualified clinical coding auditor within the UHB means that a local programme of clinical coding audit cannot be put in place. In light of the previous lack of a national programme of clinical coding audit, other health boards have commissioned external bodies who have the necessary skills to audit clinical coding. The last detailed audit review undertaken by an external body was in 2008.

Clinical coding data is used appropriately but despite the positive progress in clearing the backlog of uncoded episodes, the UHB has failed to achieve timeliness targets, some coding is inaccurate and there are concerns that problems with coding are distracting attention aware from poor performance

Although clinical coded data meets the targets for consistency, the UHB is failing to achieve the timeliness targets set by the Welsh Government and there are some significant issues with the accuracy and validity of the data, particularly in relation to diagnoses

The UHB met the national consistency standards for data derived by clinical coding for 2013-14, but it failed to meet all of the national validity standards

85. 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[7]. 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 2013-14, the UHB met the data validity standard for the Principle Procedure Code, but fell short of the Principle Diagnosis validity standard (95%), with a score of only 91.7%.

[7] Admitted patient care is the dataset submitted to the Patient Episode Database for Wales which contains the data relating to finished consultant episodes.

86. 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 e.g. 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 2013-14, the UHB met all of the data consistency standards which relate specifically to clinical coded data.

Although there has been improvement in the level of episodes coded within the Welsh Government timescales, the UHB is still not achieving the targets for episodes coded within a three-month window and over a rolling 12 month period

87. To ensure that data is coded in a timely fashion, Welsh NHS bodies are required to meet timeliness and completeness targets 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. In the UHB, compliance with the Welsh Government targets routinely forms part of the Integrated Performance Report.

88. In the UHB, there has been a positive focus on coding timeliness, demonstrated by the additional investment in external contractor staff. The UHB had failed to meet the three-month target for completion applied in 2012-13. Although performance has improved since 2012-13, performance data from NWIS up to May 2014 would indicate that the UHB was not on course to achieve the targets for 2013-14, with performance consistently below the Welsh Government targets on a month-by-month basis (Exhibit 4).

Exhibit 4: Month-by-month coding completeness up to May 2014

	Coded within three months	Coded within three months within a rolling twelve month period
Target	**95%**	**98%**
April 2013	80.4%	91.3%
May 2013	94.1%	91.5%
June 2013	94.3%	92.1%
July 2013	94.3%	92.6%
August 2013	93.3%	92.9%
September 2013	93.8%	93.0%
October 2013	93.8%	93.3%
November 2013	91.5%	92.9%
December 2013	89.0%	92.4%
January 2014	84.4%	91.5%

Source: NWIS June 2014

89. The performance report to the Board in March 2014 confirms this position, with performance reported as:

- 90% of activity coded within the three-month window, compared to the target of 95%; and
- 96% of activity coded within the three-month window within a rolling 12-month period, compared to the 98% target as set by the Welsh Government.

90. As part of our fieldwork, we requested the backlog position as at 30 September 2013. The UHB reported a backlog position of 16,700 FCE's, all of which related to 2012-13 activity, which represented 11% of total activity for that year. Whilst this is higher than comparable figures in some other health boards, this represented a positive decrease since the position at 30 June 2013, when backlog activity was in the region of 21,748 FCE's. This position has further improved with the specific focus on clearing the 2012-13 backlogs using the contract coders at the weekend.

91. Staff within the UHB are routinely monitored on their productivity, with an expectation that the clinical coding team as a whole will code in the region of 600 FCE's per day. The Acting Clinical Coding Manager will run regular reports on individual productivity and will challenge low levels of productivity where they exist. Some staff did express concerns that they felt that there is an over emphasis on the quantity of coding, with a sense of a lack of trust from the Acting Clinical Coding Manager. They also felt that issues they may be facing with individual cases or the quality of coding were not being considered.

The review of accuracy identified error rates ranging between six and 24%, with most errors relating to the coding of diagnoses

92. All health boards in Wales, with the exception of Powys, submit data to the benchmarking organisation CHKS. A number of indicators reported by CHKS provide a high-level indication of the accuracy of clinical coding. Performance against these indicators would suggest that there are issues with the accuracy of clinical coding, particularly in relation to diagnosis (Exhibit 5).

Exhibit 5: Comparison with the CHKS indicators for the period April to September 2013

	UHB (%)	Peer (%)
Use of an invalid primary diagnosis code	0.00	0.00
Unacceptable primary diagnosis	0.03	0.03
Diagnosis code of 'non-specific' provided	16.54	12.87
Sign and symptom provided as primary diagnosis	9.21	8.52
Use of an invalid procedure code	0.00	0.00

Source: Cardiff and Vale University Health Board January 2014

93. 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 UHB. The review was based on a sample of 188 episodes across the two main sites. One episode was considered by NWIS as being unsafe to audit. This refers to medical records which do not contain information relating to the episode being audited.

94. 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%. This relates specifically to four coding groups: primary diagnosis, secondary diagnosis, primary procedure and secondary procedure.

95. The review indicated mixed rates of inaccuracy across both sites, particularly in relation to the primary and secondary diagnoses. The high-level results of the review are set out in the following exhibit, with further detail set out in the separate reports issued directly to the UHB from the NWIS Clinical Classifications Team.

Exhibit 6: Results of the review of the accuracy of clinical coding undertaken by the NWIS Clinical Classifications Team

	Percentage of codes recorded correctly at University Hospital Wales	Percentage of codes recorded correctly at Llandough Hospital
Primary Diagnosis	84.44%	78.57%
Secondary Diagnosis	78.98%	76.08%
Primary Procedure	86.30%	90.63%
Secondary Procedure	87.04%	93.94%

Source: NWIS Clinical Classification Team 2014

Clinical coded data is being used appropriately although there are some concerns that problems with clinical coding are distracting attention away from poor performance

96. 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 outcomes 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.

97. Performance report to the Board and its sub-committees have clearly referred to the impact that incomplete clinical coded data can have on mortality data. However, no reports to date have included the implications of inaccurate clinical coding. 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, the extent to which a death is expected or unexpected can differ. The accuracy review undertaken by the NWIS Clinical Classifications Team identified that of the 188 episodes reviewed, a total of 89 secondary diagnosis codes were missing. Conversely, 20 secondary diagnosis codes had been assigned to patients that were considered irrelevant to the episode of care being reviewed.

98. Our survey of Board members identified that six of the 13 board members (46%) 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.

99. It is important, however, that the provision of a statement that sets out the condition of clinical coded data does not distract the focus of the reader or user away from the purpose in 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 there are mixed views as to whether under performance is too readily attributed to problems with clinical coding in the UHB, with 9 out of 13 board members (69%) reporting that they were not concerned compared with 4 (31%) reporting that they were concerned.

100. 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. As part of our medical staff survey, we asked if they would routinely use clinical coded data when communicating with patients. The results of the medical staff survey would suggest that there is potentially a problem here, as eight of the 21 respondents (33%) stated that they would use clinically coded information to communicate with patients. Our review of medical records however did not find any evidence that this was taking place.

Appendix 1

Methodology

Our review of clinical coding took place across Wales between July 2013 and March 2014. Cwm Taf Health Board acted as a pilot site to enable the Wales Audit Office test, and where necessary, refine the audit methodology. Details of the audit approach are set out below.

Document review

In advance of our fieldwork, we requested and analysed a range of UHB 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 13 of the board members in Cardiff and Vale University 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 GP's 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 22 medical staff in Cardiff and Vale University Health Board.

Interviews and focus groups

Our review team carried out detailed interviews and focus groups in the UHB during the weeks commencing 17 February 2014 at both University Hospital Wales, and Llandough Hospital.

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. Focus groups were held with clinical coding staff at both sites.

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 on 10 January 2014.

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 3 March 2014.

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 Royal College of Physicians standards for medical records. The sample period reviewed for the UHB was 1 May 2013 to 31 August 2013 inclusive.

Medical records tracker

Random samples of 30 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 sample period reviewed for the UHB were episodes completed between 1 May 2013 and 31 August 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 16 of the board members in Cardiff and Vale University 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?	
	This Health Board	**All Wales**	**This Health Board**	**All Wales**
Completely satisfied	1	6	2	12
Satisfied	6	43	5	45
Neither satisfied nor dissatisfied	3	36	3	30
Dissatisfied	3	9	3	7
Completely dissatisfied	0	-	0	-
Total	13	94	13	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?	
	This Health Board	**All Wales**
Full awareness	8	36
Some awareness	5	45
Limited awareness	0	12
No awareness	0	1
Total	13	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?	
	This Health Board	**All Wales**	**This Health Board**	**All Wales**
Yes	4	15	6	74
No	9	75	7	23
Total	13	90	13	97

Exhibit A2d: Additional comments provided by respondents from Cardiff and Vale University Health Board

- Clinical coding is an issue in the organisation. That issue is well understood but for too long it was not addressed. I am now satisfied that the issue is being addressed but I am still concerned about the timescales. I am satisfied with the information received on clinical coding but I have not been satisfied until recently on the robustness of the arrangements. I do feel that we are now however starting to get to grips with it.
- The executive directors have been clear about the shortcomings of our clinical coding arrangements but also make it clear that it is important to consider other indicators such as the weekly mortality reviews. However, it is frustrating that clinical coding is not always up to date and as informative as it needs to be.
- In my opinion, there is an element of this being a national issue and a solution which takes fuller account of this may be appropriate.
- The issue with clinical coding was identified some 3 years ago and despite repeated promises not addressed. The risk was identified and work around developed in critical areas. In my view, this was a major management failure and those responsible are no longer with us!
- WE have had issues with coding backlog that the Board is aware of and we have been addressing, the issue has taken a long time to resolve due to HR processes

Appendix 3

Results of the medical staff survey

Responses were received from 22 of the medical staff for General Medicine, General Surgery and Trauma and Orthopaedics in Cardiff and Vale University Health Board. The breakdown of responses is set out below.

Exhibit A3a: Views of clinical coding

	Please choose the response which best describes your views of clinical coding?	
	This Health Board	**All Wales**
I have never heard of it	1	3
I am aware of it but it does not have direct relevance to me	2	10
I think it is important but it does not involve me	7	32
I think it is important and I am occasionally involved	11	64
I think it is important and I am regularly involved	1	21
Total	22	130

Exhibit A3b: Rate of satisfaction with aspects of coding

	How satisfied are you that you have a clear understanding of the purpose of clinical coding?	
	This Health Board	**All Wales**
Completely satisfied	2	15
Satisfied	8	60
Neither satisfied nor dissatisfied	7	33
Dissatisfied	3	16
Completely dissatisfied	1	4
Don't know	-	-
Total	21	128

Exhibit A3c: A brief description of the areas that medical staff identified that they would like training to cover

- How it is actually done and how coders can involve and educate medical staff to improve accuracy
- I would like to know how we can ensure that things get coded correctly from our records and what we can do to increase the accuracy of coding.
- What I need to do in clinical practice.
- Diagnostic categories
- Coding for complexity within medical admissions; improving coding of dementia and delirium
- Needs a comprehensive list of codes to use to make process comparable across trusts and health boards

Exhibit A3d: Involvement with clinical coding staff

	Do you have any involvement with clinical coding staff within this organisation?	
	This Health Board	**All Wales**
None	20	97
Occasional meetings	1	28
Monthly meetings	-	2
Weekly meetings	-	1
Total	21	128

Exhibit A3e: Engagement with validation and clarification of issues

	Have you been engaged in any clinical coding validation within the past 2 years, for example, checking that clinical coders have interpreted information in medical records correctly?		Have clinical coding staff sought clarification from you on episodes of care or patients you have been responsible for?	
	This Health Board	**All Wales**	**This Health Board**	**All Wales**
Yes	3	25	6	48
No	18	103	15	79
Total	21	128	21	127

Exhibit A3f: Availability of medical records

	Do medical records frequently go missing within this organisation?		Are temporary medical records used within this specialty?	
	This Health Board	All Wales	This Health Board	All Wales
Never	-	6	-	5
Rarely	6	29	1	15
Sometimes	7	44	8	38
Often	4	21	6	27
Frequently	5	31	7	45
Total	22	131	22	130

Exhibit A3g: Quality of medical records

	Overall, what is your opinion of the quality of medical records in this organisation?	
	This Health Board	All Wales
Very good	1	9
Good	4	24
Average	10	50
Below average	3	23
Poor	4	24
Total	22	130

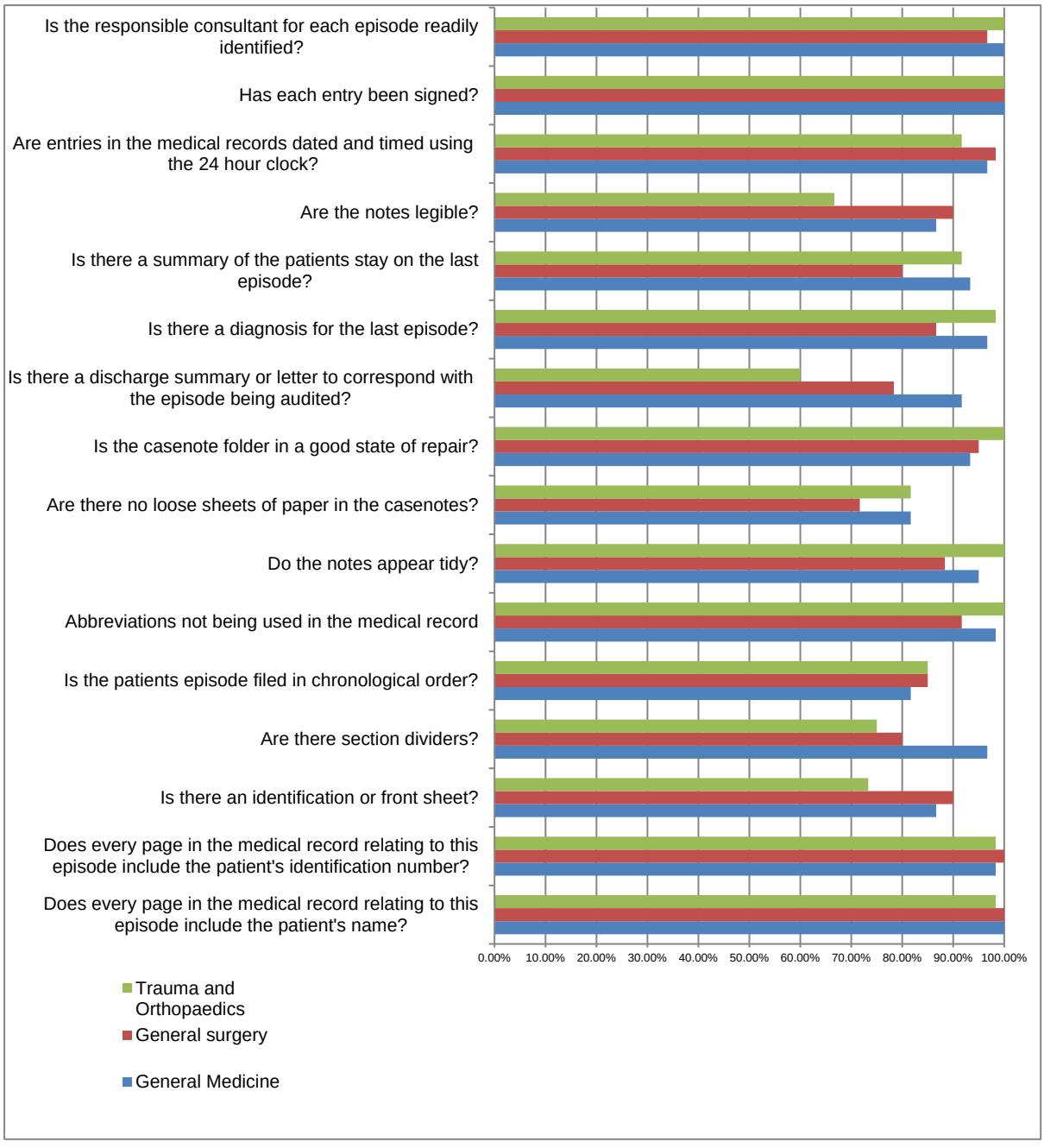
Exhibit A3h: Additional comments provided by respondents from Cardiff and Vale University Health Board

- Because there is no tariff system in the Welsh NHS, there is no incentive for health boards to get coding correct. It does not matter if we do 10 cases or 1000 cases, the board cannot increase its income- so there is no incentive for them to invest in coding. In England, poor coding will result in loss of income, so they invest in coders and training.
- There has been an increase recently in patients attending for outpatients or inpatient treatment without full notes present, and we are told that they are unavailable despite the fact that they contain essential information required for patient care.
- It is time to have paperless medical records with identifiable codes (general practice has done it for years!!!)

Appendix 4

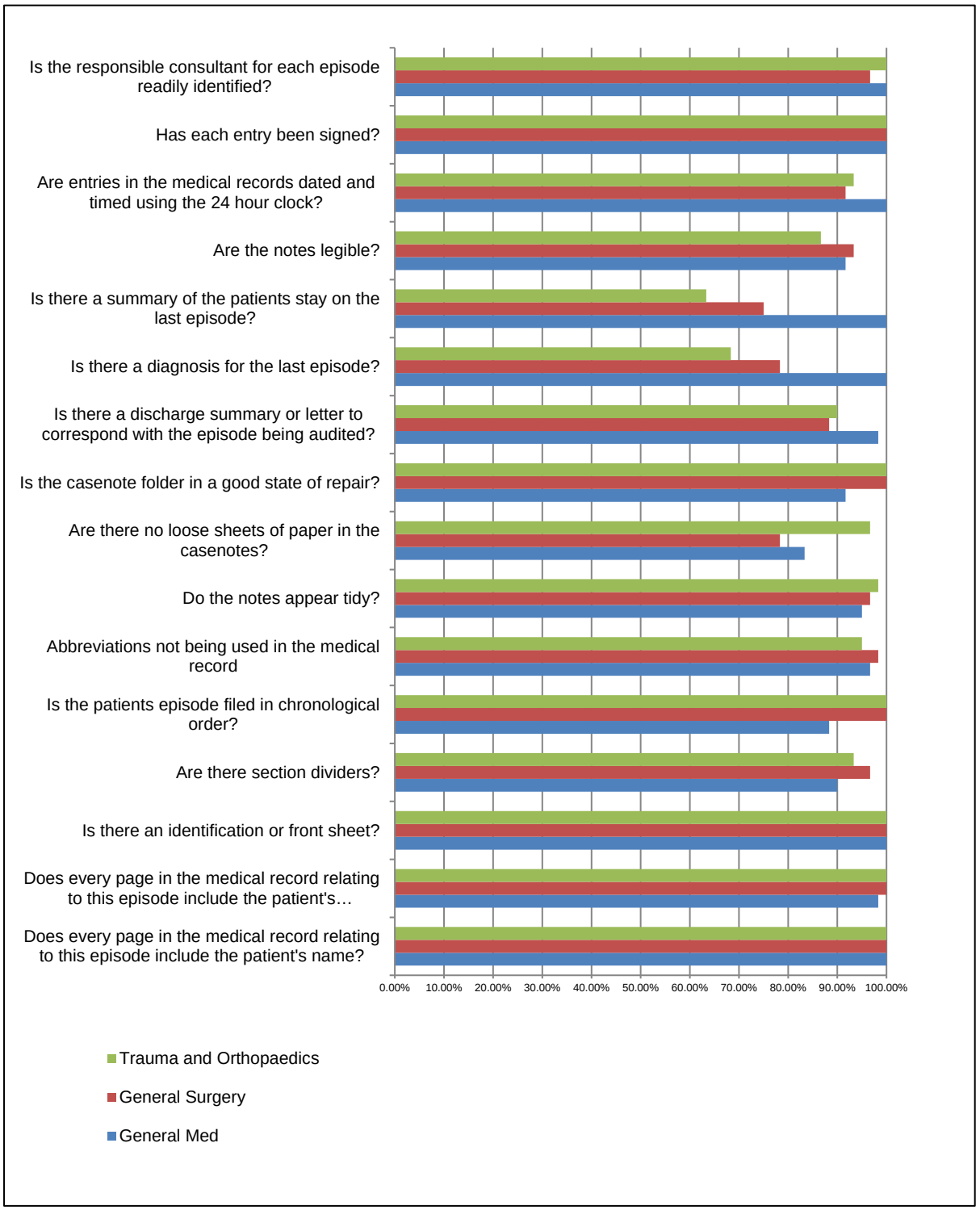
Compliance with Royal College of Physicians Standards for Medical Records by site and specialty

Exhibit A4a: Level of compliance with RCP standards by specialty at UHW Hospital



Source: Wales Audit Office

Exhibit A4b: Level of compliance with RCP standards by specialty at Llandough Hospital



Source: Wales Audit Office

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