Archwilydd Cyffredinol Cymru
Auditor General for Wales

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Review of Clinical Coding

Abertawe Bro Morgannwg University Health Board

Issued: October 2014

Document reference: 469A2014

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Abertawe Bro Morgannwg University Health Board recognises the importance of clinical coding and some of the associated processes are robust, but more needs to be done to address the wider factors affecting accuracy and timeliness.

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 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 year-end; and
- 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 has 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.

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

Our main findings

10. Our review has concluded that the Abertawe Bro Morgannwg University Health Board recognises the importance of clinical coding and some of the associated processes are robust, but more needs to be done to address the wider factors affecting accuracy and timeliness.

11. The reason for our conclusion is that:

- While the importance of clinical coding is recognised to some extent, more needs to be done to raise its profile and to focus on wider factors affecting its accuracy:
  - clinical coding is a corporate priority although confidence in clinical coding arrangements and their governance is lacking;
  - there is clear governance and executive accountability for clinical coding, and strong links to data quality and health records; and
  - there is a positive focus on training and development although there may not be sufficient resources allocated to clinical coding.
- Some aspects of the clinical coding process are robust but clinical engagement is lacking, and the quality of medical records varies considerably:
  - Local policies and procedures are in place and in line with national standards but need to be updated, and clinical coding practices across the Health Board are generally consistent.
  - Access to information is good but the quality of health records is variable between sites and specialities with risks arising from the use of temporary notes:
    - the speed by which coders have access to health records varies considerably across hospitals and between specialities;
    - the quality of medical records, issues with temporary notes, and the training and management of ward clerk resources need to be addressed; and
    - coders have good access to a range of electronic information including speciality-specific systems such theatres and maternity.
  - The approach to coding is generally sound with appropriate variations in priorities across sites although coding takes longer at the Swansea-based sites.
  - Up until recently, there has been a stable workforce for clinical coding activities with clear career progression, however more needs to be done to ensure that there is time for appropriate mentoring for trainees.
  - There is little engagement between clinicians and the coding process.
  - Processes for validation and audit are positive with opportunities to embed these further.

- Clinical coded data is used appropriately and is generally of a good standard, although some coding is inaccurate and timeliness has deteriorated, the implications of which should be highlighted to the Board:
  - Clinical coded data meets the targets for validity and consistency, and in the past has also been completed within the timescale, however timeliness is deteriorating and despite the accuracy of coding being generally good, there are some problems with the accuracy of the data:
    - the Health Board achieved the national validity and consistency standards for data derived by clinical coding;
    - the Health Board had recently fallen below the Welsh Government target that activity should be coded within three months, although it had previously consistently achieved the target; and
    - overall accuracy of coding is good, although the review identified error rates ranging between five and 18 per cent across the coding of both diagnoses and procedures.
  - Clinical coded data is being used appropriately throughout the Health Board although the Board would like to know more about the accuracy of coding and its implication.

Recommendations

12. We make the following recommendations to the Health Board:

Management of medical records

R1 Improve the management of medical records to ensure that the quality of, and access to, medical records effectively supports the clinical coding process. This should include:

- putting steps in place to ensure that medical records are released to clinical coding teams as soon as possible after discharge at Morriston and Singleton Hospitals;
- removing the use of temporary records, including poly-pockets, and ensure files are merged into the master patient record;
- reinforcing the Royal College of Physician (RCP) standards across the Health Board and the importance of good-quality records;
- providing training for ward clerks and other staff in relation to their responsibilities for medical records; and
- improving compliance with the medical records tracker tool within the Patient Administration Systems (PAS).

Clinical coding resources

R2 Further strengthen the management of the clinical coding teams to ensure that good-quality clinical coding data is produced. This should include:

- exploring and addressing the reasons for delays in coding episodes at Morriston and Singleton Hospitals once medical records are received by the respective teams;
- examining with staff how quarterly joint clinical coding team meetings can be further developed to ensure that they are regarded as being of value by staff; and
- reinforcing the role that Band 4 staff should play in mentoring and checking the work of others.

Board engagement

R3 Build on the good engagement that already exists with the Board to ensure that the implications of clinical coding on performance management, and the wider management processes in the NHS, are fully understood. This should include:

- providing training for Board members to raise their awareness of clinical coding and the extent to which it affects the quality of key performance information, other than mortality data; and
- improving information to the Board on the accuracy of clinical coding.

Engagement with medical staff

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:

- embedding a consistent approach to clinical coding training for medical staff across the Health Board;
- reinforcing the importance of completing timely discharge summaries; and
- improving clinical engagement with the validation of clinical coded data.

Detailed report

While the importance of clinical coding is recognised to some extent, more needs to be done to raise its profile and to focus on wider factors affecting its accuracy

Clinical coding is a corporate priority although confidence in clinical coding arrangements and their governance is lacking

13. 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.

14. 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 12 of the board members in Abertawe Bro Morgannwg University Health Board. The full results from our survey of board members can be found in Appendix 2.

15. Overall, while the survey results indicate that board members have a good awareness of the factors affecting the robustness of clinical coding, only 42 per cent are satisfied with the information that they receive on the robustness of clinical coding arrangements:

- 10 of the 12 board members (83 per cent) who responded to the survey reported that they had full or some awareness of the factors affecting the robustness of clinical coding;
- only six out of 12 board members (50 per cent) reported that they were satisfied or completely satisfied that the health board was doing enough to make sure that clinical coding arrangements were robust; and
- only five out of 12 board members (42 per cent) were satisfied with the information they received on the robustness of clinical coding arrangements in the Health Board.

16. Clinical coding is a corporate priority that is highly driven by the need for an accurate Risk Adjusted Mortality Index (RAMI). A review of board papers shows that the board receives information relating to clinical coding in that context. Health Board Integrated Performance reports contain information on mortality figures and coding as part of reporting on Excellent Patient Outcomes and Experience. However, we heard that understanding of these issues amongst Board members is highly variable.

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

17. Supporting committee arrangements provide assurance to the Board in respect of mortality figures, underpinned by clinical coded data, particularly in reports to the Quality and Safety Committee. However, we were told that this committee is overwhelmed by the extent of its responsibilities and programme of work, potentially to the detriment of the scrutiny that it provides.

18. The Information Governance Committee reviews coding performance. Concerns were raised that it is not adequately constituted as a committee, and cannot contribute to governance arrangements as effectively as similar committees in other health boards.

19. The Health Board's focus on clinical coding is primarily on reporting accurate mortality data, and on timeliness and completeness driven predominantly by the Welsh Government target. There is routine audit and validation of the accuracy of clinical coding across Health Board sites, and through the routine personal development reviews of individual coding staff members. However, with the exception of the high-level data quality indicators provided by the benchmarking organisation CHKS, the accuracy of clinical coding is not reported to the Board and its subcommittees. Therefore, the Board is currently unable to take full assurance on the robustness of its clinical coding.

There is clear governance and executive accountability for clinical coding, and strong links to data quality and health records

20. In the Health Board, clinical coding is part of the Informatics Directorate with overall responsibility within the directorate resting with the Head of Information Services. Day-to-day management is by the Clinical Coding Manager who is based at the Health Board headquarters in Baglan. She reports directly to the Head of Information Services, who in turn reports via the Assistant Director of Informatics to the Executive Director of Workforce and Organisational Development.

21. The Clinical Coding Manager oversees the clinical coding function. There are four main clinical coding teams: Princess of Wales Hospital (POW), Neath Port Talbot Hospital (NPTH), Morriston Hospital (Morriston) and Singleton Hospital (Singleton). The Clinical Coding Manager works across sites. A clinical coding supervisor provides day-to-day supervision at each main site. The clinical coding supervisor at Morriston currently fulfils the same role at Singleton following a change in circumstance with the previous supervisor in Singleton. During our review, staff at both sites said that the new arrangement is working well in practice.

22. The Head of Information Services is keenly aware of the importance of clinical coding and its potential to contribute to a far greater understanding of clinical activity. She has made it a key part of the wider informatics agenda. In the absence of an overall clinical coding champion within the Health Board, her work has been vital in raising the profile of this activity with clinicians. The Clinical Coding Manager and the clinical coding team supervisors are also advocates for clinical coding in relevant groups and forums. Clinical coding forms part of the Informatics Directorate induction provided to junior doctors and to new staff. A presentation about the Informatics Directorate, including clinical coding, is included as part of the Health Board's consultant development programme.

23. The Health Board recognises the importance of data quality arrangements although the current emphasis is largely on ensuring the quality of the data that is the direct responsibility of the Informatics Directorate. Consequently, the focus for ensuring the quality and accuracy of clinical coding data is primarily the work of the clinical coding teams.

24. The relationship between health records and clinical coding is important in helping to ensure the basis of the quality and availability of the data for clinical coding. The Health Board reorganised its structure so that health records could become part of the Informatics Directorate. It appointed a Health Records Service Manager (HRSM), who regards the restructure as an enormous improvement over previous arrangements.

25. The HRSM works across the four records libraries on the main sites and leads the development of health records strategy. She recognises that making the health records from four pre-existing trusts available across four sites is a considerable challenge. The fact that clinical coding departments are adjacent to the medical records library on each site assists various aspects of the relationship with health records.

26. The HRSM recognises that while her staff carry out spot checks on the contents of records to highlight quality issues, they are only able to look at a very small sample overall. There has been pilot activity of a closed volume system in a small number of specialties. This approach uses only the most recent volume of a patient's health record in order to make them more manageable. Some clinical coding staff commented that this makes it much easier for them to find the information they need in individual health records. However, there has been resistance to this approach from medical staff, and further introduction appears to be slow.

27. As part of our medical staff survey, we asked the opinion of staff of the overall quality of medical records. Just over half of the medical staff who responded to our survey reported that the overall quality of medical records was below average or poor, while only four out of 39 (10 per cent) reported they were good. The main results from our medical staff survey can be found in Appendix 3.

28. Our fieldwork also identified that the Health Board has adopted the RCP standards[3] to improve the quality of its medical records. Our responses to the medical staff survey show that some medical staff are aware of the standards although very few thought that the Health Board had adopted the standards:

- 19 out of 39 medical staff (49 per cent) were aware of the RCP standards; and
- four out of 19 medical staff (21 per cent) said that standards had been adopted by the health board.

29. One way of improving the quality of medical records is by embedding the importance of health records in the training of staff. There is mandated induction for all new health records staff. As mentioned above, the Informatics Directorate provides junior doctors and new staff with an induction that includes details of its health records service. However, a common view is that there is too much for staff to learn during the overall induction process. Only eight per cent of medical staff responding to our survey said that they had received training on improving medical records over the last two years. Seventy-nine per cent of staff said that they were unsure whether there are any internal record keeping standards within the Health Board.

There is a positive focus on training and development although there may not be sufficient resources allocated to clinical coding

30. 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 in terms of staffing levels, as well as the arrangements to ensure that staff receive training and development opportunities which would enhance the quality of clinical coding.

31. Currently, only information relating to hospital admissions (in the form of Finished Consultant Episodes (FCEs)), 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.

32. The budget allocated for clinical coding in the Health Board in 2013-14 (£1,061,529) has fallen slightly from its level in 2010-11 (£1,068,530). However, the budget allocated to pay, and pay costs have increased year on year. In 2013-14, the budget allocated to pay (£1,222,757) has exceeded the total budget.

[3] 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 RCP Health Informatics Unit (HIU) and funded by NHS Connecting for Health.

33. While there is no formal budget allocation for training and development, there is a strong emphasis on supporting clinical coding staff. Training and development costs have been in the region of £3,000 over the last couple of years, with £3,156 in 2011-12 and £2,648 in 2010-11 spent on training. Costs associated with training and development in 2012-13, however, was significantly lower at £258 although this is largely due to staff not requiring the same extent of training during that financial year.

34. Staffing accounts for 106 per cent of the budget in 2013-14. As at 30 September 2013, the health board's clinical coding department had a total funded establishment of 44.19 Full Time Equivalents (FTEs). This funded establishment has been the same since March 2012.

35. The core coding team (ie, those staff whose primary role is to undertake clinical coding) is 32.08 FTEs (including two FTEs at Band 5, which is the proportion of supervisor time spent on clinical coding, 26.53 FTEs at Band 4 and 3.55 FTEs at Band 3, excluding supernumerary staff). The clinical coding remit for the Health Board covers:

- FCE; and
- all new GP referrals to the Burns and Plastics Unit at Morriston.

36. If demand from FCE 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 34.28 FTE's[4]. This is based on a recognised standard workload level of 30 FCEs per day per full-time coder. This would indicate a shortfall in the current staffing establishment for the core clinical coding team of 2.2 FTEs. In addition, the staffing establishment however does not include an allowance for sickness and maternity leave and therefore if staff are absent, there is no flexibility within the existing establishment to provide cover. This is in line with the rest of Wales.

37. 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. Most clinical coding staff within the Health Board have attended the foundation-training course provided by NWIS (38), with one awaiting training. Staff said that funding available for specialty-focused training, run by NWIS, has been reducing along with the number of places that are made available to the Health Board. Those places available are prioritised to some extent on a rotational basis between staff. We will be considering the availability of training places as part of our review of clinical coding arrangements at a national level.

[4] 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 FTE (excluding bank holidays, leave entitlements and commitments to training and development (including mandatory training and personal development reviews)).

38. Despite no formal training and development budget, staff are supported to achieve further coding qualifications. Eighteen of the Health Board staff are accredited clinical coders, with three working towards the qualification. Changes to job descriptions mean that all new staff appointed at Band 5 and Band 4 must have the Accredited Clinical Coding (ACC) qualification at appointment. Band 3 staff must acquire the qualification while in post. Staff are also supported through training and mentoring by their supervisors, with the Health Board winning awards for its mentorship programme.

39. Up until September 2013, the Informatics Directorate has fully funded all existing staff sitting the ACC examination, including Institute of Health Records and Information Management (IHRIM) membership costs. After that date, all new staff will be required to fund the cost of their own IHRIM membership. Historically, the Health Board funded re-sit examinations, but going forward it will only pay for the first examination. Employees will have to pay for any re-sits.

40. The Health Board is supporting one of its clinical coding supervisors to achieve the advanced ACC modules, in order to become a clinical coding auditor. This would allow the Health Board to develop its own programme of clinical coding accuracy reviews. The use of coding auditors ensures that internal work on reviewing the quality of data is in line with national clinical coding audit methodology.

Some aspects of the clinical coding process are robust but clinical engagement is lacking, and the quality of medical records varies considerably

Local policies and procedures are in place and in line with national standards but need to be updated, and clinical coding practices across the Health Board are generally consistent

41. The Health Board has a policy to ensure that there are comprehensive and effective clinical coding procedures in place for the consistent provision of quality clinical information, its accurate recording, timely completion, effective management, and regular monitoring. The policy sets out the structure and process of coding across the Health Board. The document is easy to read and is a useful guide for staff, although the Clinical Coding Manager recognises that it needs to be updated (the most recent version was published in November 2012).

42. Clinical coding staff are located across a number of sites, so it is important that the policy promotes consistency in coding practices. During our review, we found practices were consistent across the four main sites. The Coding Management Team holds a supervisory meeting every month, which provides a regular opportunity to discuss any coding practice issues, as well as coding completeness and backlogs. Quarterly meetings are held to bring together all clinical coding staff from across the Health Board, to share practice, to provide opportunities to meet colleagues from other sites, and to improve consistency in practices across sites. The Health Board is the only one in Wales to facilitate meetings which bring together clinical coding staff from different locations in this way. However, we found that staff had varying views about the real value of these sessions, in particular that they take them away from normal work activity and involve travel to a different location to their normal place of work. The Health Board should reflect with staff on how to make best use of these sessions.

43. 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. National standards are generally based on the UK national standards for clinical coding set out by the NHS Classifications Service within NHS England. Where there are specific differences between NHS Wales and the rest of the UK, Welsh clinical coding standards will be applied through the NWIS Clinical Classifications Team. 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. This guidance is disseminated by the Clinical Coding Manager, to the supervisors and the teams.

44. 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 Manager is actively involved in the Clinical Coding User Group, with open channels of communication between the coding teams and the Clinical Classifications Team in NWIS for coding queries and issues as they arise.

45. 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 generally be developed in conjunction with clinicians. The Health Board has a standard format for its local coding agreements emphasising the need to conform to national standards, for annual review, and signing off by the relevant consultant(s). The examples provided to us at the time of our document request were all in the period leading up to when an annual review was due.

Access to information is good but the quality of health records is variable between sites and specialities with risks arising from the use of temporary notes

The speed by which coders have access to health records varies considerably across hospitals and between specialities

46. 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.

47. 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 are sent, or can find their way, to other areas 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.

48. Within the Health Board, medical records are generally released from the wards to the coding teams following discharge. However, the speed at which this takes place can depend on how quickly medical staff complete discharge summaries. The use of temporary files and highly variable filing standards across different wards, together with inconsistent training and resourcing arrangements for ward clerks/receptionists can also have a significant detrimental impact on the speed of availability, quality and completeness of notes made available to clinical coders.

49. As part of our fieldwork, we undertook a tracking exercise, using the medical records tracking tool[5], 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.

50. We based our sample on 405 medical records across the four main sites, taken from the three specialties reviewed. We were unable to complete the tracker exercise at POW. Of the sample reviewed, 98 records were not tracked on the PAS system. The majority of these records were at NPTH, POW and Singleton sites. Untracked records can make locating a patient's record very difficult and create risks to both administrative processes but more importantly, the provision of patient care should be the patient be admitted. Of the remaining sample, the picture that emerged varied considerably between sites.

[5] 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 PAS or a paper format. In Abertawe Bro Morgannwg University Health Board, the tracking tool forms a specific module on the respective PAS systems.

51. At Morriston, we found that the average speed taken for patients' medical records to reach the clinical coding team ranged from 3.7 weeks in general medicine to 6.3 weeks in general surgery. We found that in each specialty, a proportion of records took longer than three months to reach the clinical coding team, with 13.5 per cent of general surgery records not meeting this target, making achievement of the Welsh Government standard a challenge. More detail is provided in the following exhibit.

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

		General medicine	General surgery	Trauma and orthopaedics
Speed of accessing medical records (weeks)	Average	3.7	6.3	4.4
	Shortest	0.1	0.1	0.3
	Longest	36.0	32.3	30.1
Percentage of medical records received by the coding team…..	…within 4 weeks (1 month) of discharge	74.4%	40.5%	70.0%
	…within 8 weeks (2 months) of discharge	92.3%	75.7%	85.0%
	…within 12 weeks (3 months) of discharge	94.9%	86.5%	92.5%

Source: Wales Audit Office, 2014

52. At Singleton, we found that the average speed taken for patients' medical records to reach the clinical coding team ranged from around 13 weeks in general medicine and general surgery to 21.1 weeks in trauma and orthopaedics. We found that in each specialty, a large proportion of records took longer than three months to reach the clinical coding team, ranging from 34.5 per cent of general surgery records, 36.7 per cent of general medicine records, and 63 per cent of trauma and orthopaedics records. At the time of the review, some activity was being coded directly on the wards and therefore removing the need for the coding department to receive the medical records, which may account for the high proportion of notes that take longer than 12 weeks. More detail is provided in the following exhibit.

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

		General medicine	General surgery	Trauma and orthopaedics
Speed of accessing medical records (weeks)	Average	13.0	13.1	21.1
	Shortest	0.3	0.0	0.0
	Longest	39.0	40.4	38.0
Percentage of medical records received by the coding team…..	…within 4 weeks (1 month) of discharge	36.7%	37.9%	29.6%
	…within 8 weeks (2 months) of discharge	43.3%	62.1%	37.0%
	…within 12 weeks (3 months) of discharge	63.3%	65.5%	37.0%

Source: Wales Audit Office, 2014

53. At NPTH, we found that the average speed taken for patients' medical records to reach the clinical coding team ranged from less than one week in trauma and orthopaedics to 4.7 weeks in general medicine. We found that in both trauma and orthopaedics, and general medicine all records reached the clinical coding team within three months. A small proportion (3.8 per cent) of general surgery records took more than three months. More detail is provided in the following exhibit.

Exhibit 1c: Speed of access to medical records following discharge or transfer in Neath Port Talbot Hospital

		General medicine	General surgery	Trauma and orthopaedics
Speed of accessing medical records (weeks)	Average	4.7	2.0	0.9
	Shortest	0.1	0.1	0
	Longest	12	12.3	8.9
Percentage of medical records received by the coding team…	…within 4 weeks (1 month) of discharge	64.3%	76.9%	92.3%
	…within 8 weeks (2 months) of discharge	78.6%	96.2%	97.4%
	…within 12 weeks (3 months) of discharge	100.0%	96.2%	100.0%

Source: Wales Audit Office, 2014

54. At POW, we only completed the tracker exercise for general surgery. For this specialty, we found that the average speed taken for patients' medical records to reach the clinical coding team was 3.6 weeks. A small proportion of records (3.7 per cent) took longer than three months to reach the clinical coding team. More detail is provided in the following exhibit.

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

		General surgery
Speed of accessing medical records (weeks)	Average	3.6
	Shortest	0.1
	Longest	15.9
Percentage of medical records received by the coding team…	…within 4 weeks (1 month) of discharge	74.1%
	…within 8 weeks (2 months) of discharge	85.2%
	…within 12 weeks (3 months) of discharge	96.3%

Source: Wales Audit Office, 2014

55. 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'. At the time of our fieldwork, the Health Board had coding support staff in all sites with a total establishment of 8.30 FTEs. At Singleton, an FTE Band 3 post has been established to help improve case note flows and case note management issues between Singleton and Morriston. Clinical coders and ward clerks across all sites commented positively about the contribution that these roles make to assisting communication and speeding up the flow of notes.

56. Clinical coders across all sites spend some time liaising with other staff, often to locate records. Our diary exercise showed that the extent to which coding staff liaise with other non-medical staff groups varied from just under one per cent of coding time at POW, to around five per cent at NPTH.

The quality of medical records, issues with temporary notes, and the training and management of ward clerk resources need to be addressed

57. 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.

58. As part of our fieldwork, we reviewed a sample of 360 medical records across the specialties reviewed in the four main hospital sites. The review was based on 16 of the RCP standards. Representatives from the NWIS Clinical Classifications Team used the same sample to complete the review of clinical coding accuracy. Of the 360 medical records in the sample, we found a compliance rate of 84.2 per cent. The standard of medical records is variable across and within sites and specialities. More detail is provided in the following exhibit:

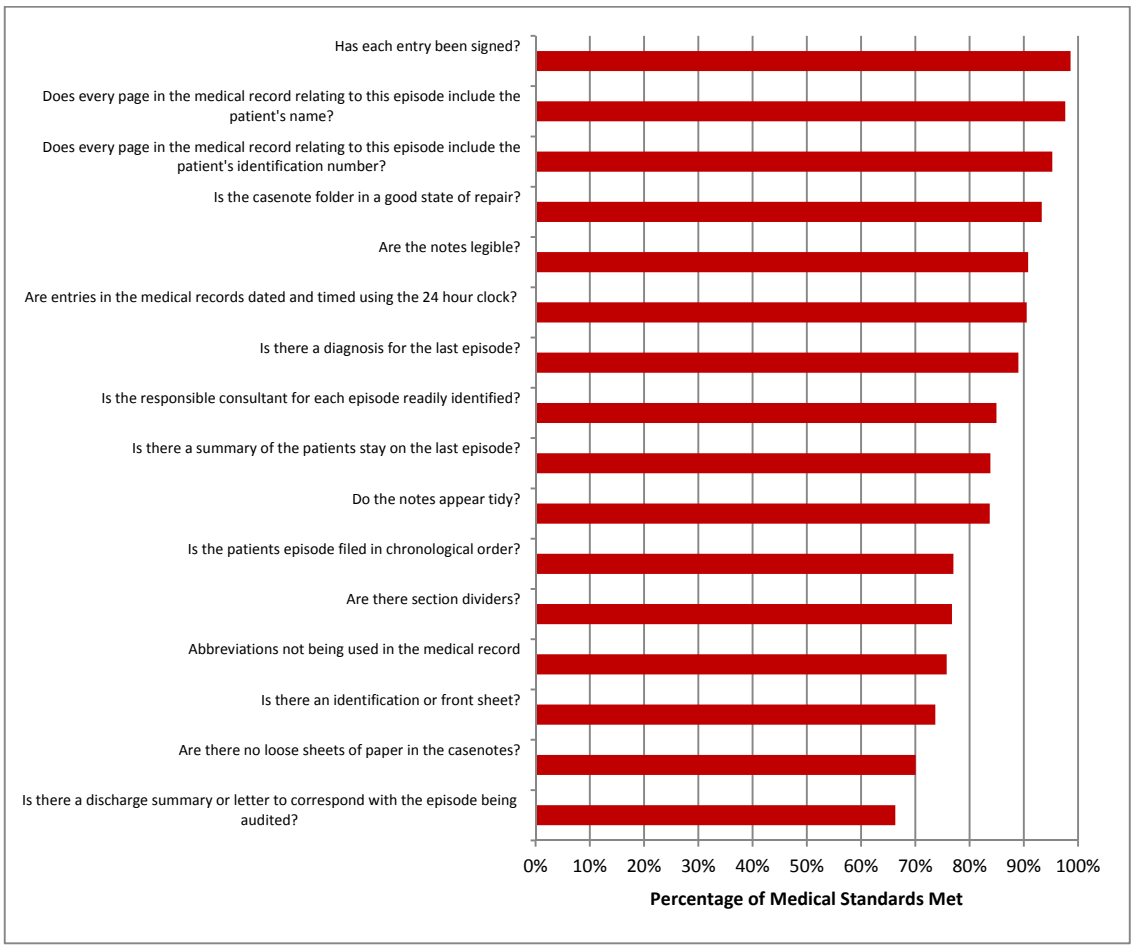
Exhibit 2: Overall percentage level of compliance with Royal College of Physician standards by hospital site and specialty

	General medicine	General surgery	Trauma and orthopaedics
Morriston Hospital	80%	82%	82%
Neath Port Talbot Hospital	86%	90%	87%
Princess of Wales Hospital	88%	90%	76%
Singleton Hospital	79%	92%	80%

Source: Wales Audit Office, 2014

59. 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. This includes ensuring that a discharge summary or letter corresponding to the relevant episode is present, that there are no loose sheets in the health record, that front sheets are in place and updated, and that abbreviations are not being used. 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 Royal College of Physician standards



Source: Wales Audit Office, 2014

60. A recurring and serious concern amongst clinical coding staff relates to the use of temporary records. If records are not available, staff often collate information relating to the episode into a temporary record, which is sometimes placed in a 'poly-pocket' folder. Arrangements for merging these records back into a formal medical record are unclear with examples provided to us of 'poly-pocket' folders being stored in cabinets on wards or being lost. This is a risk to the Health Board, as health records may not contain a patient's full health history. As well as a clinical risk, this also has implications for the quality of clinical coding as relevant previous medical history may be omitted from the coding of a patient's episode of care.

61. Other significant concerns arose in relation to inconsistency in the management of ward clerks as part of ward teams. Levels of training in relation to health record keeping are highly variable. Ward clerks interviewed during this review often had not received any specific training in relation to raising awareness of the significance of clinical coding. However, we understand that new ward clerks do receive training in this respect. Furthermore, cover arrangements for ward clerks is inconsistent. If there is a period of ward clerk sickness absence or annual leave, there may not be full cover available to ensure that their responsibilities are addressed.

Coders have good access to a range of electronic information including speciality-specific systems such as theatres and maternity

62. 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 is appropriate that coders use only the information contained on an 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.

63. However, clinical coders across the Health Board commented consistently on the very poor usability of some of these systems. They find that they take longer to use and are visually difficult to interpret. They are concerned that as dependency on these systems increases over time, the pace of work will decline. They are also concerned that associated health and safety issues have not been fully evaluated, such as eye strain and individual stress levels.

64. All clinical coding staff across the Health Board have access to a range of clinical information systems, and many have access to speciality-specific systems, such as operating theatres and maternity. Providing coding staff access to speciality systems allows them to check information required for coding patient episodes.

65. It is 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 NHS Classifications Service in England. Clinical Coding Communications from NWIS are also 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 access to the internet, intranet and email. This is good practice.

The approach to coding is generally sound with appropriate variations in priorities across sites although coding takes longer at the Swansea-based sites

66. 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 relating to the Swansea-based sites, even though this activity does affect the completeness figures for the Health Board. These are currently the responsibility of the Mental Health Directorate within the Health Board, which is common with a number of other health boards in Wales. Quarterly meetings are held with the Mental Health Directorate to discuss and address coding completeness issues.

67. 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 eg, on annual or sick leave.

68. Across the Health Board, clinical coders are generally responsible for coding across all specialities, enabling them to develop a good general coding knowledge. Sometimes clinical coders are responsible for coding specific specialties, on a rotational basis. This enables them to build and maintain their knowledge of particular specialties, which is positive. During our fieldwork, we identified that strong peer support was present in each of the teams. There is good communication between teams and there are occasions when team members temporarily move to help other teams when workloads become particularly onerous.

69. The ‘runners’ collect records from ward level and file them in month order in the respective coding departments. Coders then take the records in chronological order from their shelves for their respective specialties. As well as date order, there are a number of other priorities in place across the four sites, such as:

- requests;
- tertiary services on a daily basis;
- some specialties such as paediatrics and chemotherapy because of the volume; and
- day surgery when they arrive.

70. Clinical coding teams also prioritise deceased patients to ensure that mortality data, to inform the RAMI, is available. 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 (ie, the total number of patients) by excluding live patients by the nature that they are not yet coded. There should be caution around prioritising deceased patients if there are backlogs of workload building up.

71. 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 the records reviewed, once medical records were received by the clinical coding teams, cases were coded relatively quickly at NPTH and POW, with:

- 62 per cent of records coded within three days;
- 74 per cent of records coded within one week; and
- 82 per cent of records coded within a fortnight.

72. Performance at Singleton and Morriston hospitals was considerably longer with coders taking on average five weeks to code cases at Singleton, and up to 13 weeks to code cases at Morriston.

73. Clinical coding across the Health Board is currently carried out using an electronic encoder system called Medicode which is linked to the health board’s PAS.
The version of Medicode being used in Morriston and Singleton at the time of our information request was version 5.2.0.3 which was behind the version being used at POW and NPTH (5.2.0.6) and the latest NWIS version. Installation of updates was planned.

Up until recently, there has been a stable workforce for clinical coding activities with clear career progression, however more needs to be done to ensure that there is time for appropriate mentoring for trainees

74. Staffing levels have remained largely consistent up to September 2013, with one coder terminating her contract and is now working with NWIS, and a part-time coding support officer sadly passed away. At the time of the review, all of the established posts in the clinical coding department were filled and there were no vacancies.

75. In July 2012, two (FTE) new trainee coders were recruited in Morriston and two coding support staff were employed. In NPTH, one new trainee coder was employed in September 2013. At POW, a fully qualified ACC coder was employed in October 2012 (0.4 FTE). At Singleton, a coding support officer has recently been employed (0.8 FTE) to replace her predecessor who transferred to NPTH. There have been subsequent staff changes since the review, along with a number of staff on long-term sick leave and maternity leave, which have created some pressures within the workforce.

76. There is a good level of clinical coding experience within the department with over 50 per cent of staff having clinical coding experience spanning more than 10 years. Only 9.5 per cent of the clinical coding workforce (four members of staff) are aged 56 and over, and likely to retire in the next five years.

77. New starters to the department are classed as supernumerary during their first eight to nine months, and thereafter are given their own allocation of work ahead of them gaining ACC qualification. Trainees are mentored by senior staff. However, this mentoring can sometimes place pressure on senior staff in terms of time commitments with the potential to be missed if there are demands on the team from backlogs. The diary exercise undertaken as part of this review indicated that only 1.5 per cent of time was spent on mentoring and checking the work of others, however we recognise that during the two-week period, some of the supervisors who undertake the majority of mentoring were on annual leave with no time recorded for this activity at Singleton Hospital. While the majority of mentoring of junior staff rests with the supervisors and managers, mentoring and checking also sits with the Band 4 role, and is clearly set out in their job description. However, many Band 4 staff do not recognise this as part of their role and very little time was identified relating to this within the diary exercise. It is important to ensure that Band 4 staff are aware of their responsibilities and resources are in place to train and support these individuals to ensure they have solid foundations to code accurately.

There is little engagement between clinicians and the coding process

78. 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.

79. Within the Health Board, clinical engagement with clinical coding is highly mixed. Our survey of medical staff indicated that there was limited awareness of clinical coding amongst clinicians, sometimes associated with the mortality review process. Thirty-four out of 39 medical staff responding to our survey recognised the importance of clinical coding, however 29 out of 37 said they had no involvement with clinical coding within the Heath Board.

80. Our diary exercise completed as part of this review showed that clinical engagement is very limited with a negligible level of time recorded for liaison with clinicians by coding staff during the period reviewed. However, clinical coding staff told us of some specific instances where very helpful sessions had been arranged with consultants who were willing to take some time to explain their activities. This enabled coding staff and the consultant concerned to reach agreement about appropriate coding of their clinical practice, some of which might involve new techniques or procedures.

81. Where a clinical coding team is based within a hospital, it can play an important role in encouraging clinical engagement. All the four teams are based within the main hospital sites, although they are generally located away from the clinical areas. Eighty-four per cent of medical staff responding to our survey said that they were not aware of where the coders were based for their respective sites.

82. 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 generally be visible within the clinical areas. Fifty-seven per cent of medical staff responding to our survey said that coding staff had sought clarification from them on episodes of care or patients they had been responsible for. However, 94 per cent of medical staff said that coders were rarely or never visible.

83. At the time of our fieldwork, clinical coding positively featured as part of the induction for junior doctors in the form of induction packs and leaflets. Our medical staff survey found that 84 per cent of the respondents said that they had not received induction relating to clinical coding. Although 97 per cent of medical staff responding said that they had not received training relating to clinical coding over the last two years, 32 per cent said that they would be interested to receive some. Consistent arrangements for medical staff training need to be embedded by the Health Board.

Processes for validation and audit are positive with opportunities to embed these further

84. 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.

85. Policies and procedures support the focus on quality within the Health Board. A document entitled *Clinical Coding Policies and Procedures* reinforces the importance of quality and refers to processes that are in place to support it. The Clinical Coding Manager and clinical coding supervisors use monthly coding timeliness reports, and validation issues identified through coding errors identified through PEDW. Issues are fed back to staff through direct one-to-one meetings with line managers as well as through monthly and quarterly staff and team meetings.

86. 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 there was some clinical engagement in the validation of coding which is positive, however this centres on mortality reviews and although medical staff are reporting engagement from clinical coding at meetings these seem to be historical arrangements:

- Nineteen per cent reported that they had been engaged in validation of clinical coding over the last two years.
- Three medical staff (eight per cent) reported that a representative from clinical coding attended a meeting that they had been present at to provide input into the discussions. A further five (14 per cent) said that they were unsure.

87. As well as routine validation, one way of providing assurance of the quality of clinical coding is to undertake detailed audit reviews. The Health Board has been proactive in implementing a programme of audit over a period of years. This has included internal audits of validity, consistency, quality and completeness.

88. The prospect of one of the existing coding supervisors qualifying as an accredited coding auditor will offer the potential to strengthen internal audit arrangements.

Clinical coded data is used appropriately and is generally of a good standard, although some coding is inaccurate and timeliness has deteriorated, the implications of which should be highlighted to the Board

Clinical coded data meets the targets for validity and consistency, and in the past has also been completed within the timescale, however timeliness is deteriorating and despite the accuracy of coding being generally good, there are some problems with the accuracy of the data

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

89. 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[6]. The validity of all admitted patient care data submitted to the 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 Health Board met all of the data validity standards which relate specifically to clinical coded data.

90. 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 2013-14, the Health Board met all of the data consistency standards which relate specifically to clinical coded data.

[6] Admitted patient care is the dataset submitted to the PEDW which contains the data relating to FCEs.

The Health Board had recently fallen below the Welsh Government target that activity should be coded within three months, although it had previously consistently achieved the year-end target

91. To ensure that data is coded in a timely fashion, Welsh NHS bodies are required to meet the timeliness and completeness targets as set out 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 Health Board, there is a positive focus on coding timeliness, with regular monitoring of targets.

92. Using the recognised standard workload of 30 FCEs per day, the Health Board has set out its productivity level for each member of staff. The clinical coding staff are routinely monitored on their productivity. They feel positively supported to achieve these targets although staff said that productivity can be affected by several factors, in particular:

- variability in the complexity, size and quality of health records across different specialties; and
- the very poor user interface in the various IT software systems they have to work with.

93. Recent information set out in the Health Board's Performance Assurance Report indicate that the clinical coding teams had been consistently achieving performance against the year-end targets, however the teams were struggling to achieve the ongoing monthly target and performance had declined in the most recent months submitted. In May 2014, performance was reported as:

- 89 per cent of activity up to January 2014 coded within the three-month window, compared with the target of 95 per cent; and
- 97.4 per cent of activity coded within the three-month window within a rolling 12-month period, compared with the target of 98 per cent.

94. As part of our fieldwork, we requested the backlog position as at 30 September 2013. Backlog levels at the Health Board are just over three per cent of the total number of FCEs for the past three years. When performance against targets is maintained, this is acceptable. However, if targets are not met, the backlog becomes more difficult to address. During the six months to September 2013, there had been almost no progress in addressing the clinical coding backlog dating from before 2012-13. The coding teams do not actively search for uncoded episodes from previous years as this activity is not re-submitted to NWIS, however if uncoded episodes are coded, this information will be reflected on the Health Board's own PAS.

Overall, accuracy of coding is good, although the review identified error rates ranging between five and 18 per cent across the coding of both diagnoses and procedures

95. 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 364 episodes across the four main sites. A total of seven episodes were unable to be reviewed as the medical records did not contain information relating to the episode being audited.

96. 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.

97. The review indicated mixed rates of inaccuracy across the four sites. 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 Health Board from the NWIS Clinical Classifications Team.

Exhibit 5: Results of the review of the accuracy of clinical coding undertaken by the NWIS Clinical Classifications Team

	Percentage of codes recorded correctly at Princess of Wales	Percentage of codes recorded correctly at Neath Port Talbot	Percentage of codes recorded correctly at Morriston	Percentage of codes recorded correctly at Singleton
Primary diagnosis	88.89	91.30	91.21	86.67
Secondary diagnosis	85.84	81.78	91.57	85.92
Primary procedure	92.98	95.06	80.49	89.55
Secondary procedure	95.16	95.21	90.27	84.44

Source: NWIS Clinical Classifications Team

Clinical coded data is being used appropriately throughout the Health Board although the Board would like to know more about the accuracy of coding and its implication

98. 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 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.

99. The Clinical Outcome Steering Group provides reports to the Quality and Safety Committee and the Executive Team on in-hospital mortality rates and the performance of the clinical coding service. The RAMI, for example, takes into account co-morbidities, which should be recorded using 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 364 episodes reviewed, a total of 104 secondary diagnosis codes were missing. Conversely 28 secondary diagnosis codes had been assigned to patients that were considered irrelevant to the episode of care being reviewed.

100. Our survey of Board members identified that 12 of the 12 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.

101. 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 in which the data is being used, for example, backlogs can be used as a reason for underperformance 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 generally suggest that this is not the case in the Health Board, although four out of 12 board members reported that they are concerned that underperformance against key indicators is too readily attributed to problems with clinical coding.

102. 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 clinical coded data is not being used inappropriately with 29 out of 37 (78 per cent) medical staff reporting that they would never use clinical coded information when communicating with patients.

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 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 12 of the board members in Abertawe Bro Morgannwg 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 GPs with responsibility for community inpatient beds which are recorded as general medicine for the purposes of the Patient Episode Database for Wales (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 39 medical staff in Abertawe Bro Morgannwg University Health Board.

Interviews and focus groups

Our review team carried out detailed interviews and focus groups in the health board during the weeks commencing 3 February 2014 (POW and NPTH), 24 February 2014 (Morriston Hospital) and 10 March 2014 (Singleton 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 and supervisor. 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 12 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 17 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 RCP standards for medical records. The sample period reviewed for Abertawe Bro Morgannwg University Health Board were medical records relating to episodes completed between 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 Abertawe Bro Morgannwg University Health Board 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 12 of the board members in Abertawe Bro Morgannwg 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	-	6	1	12
Satisfied	5	43	5	45
Neither satisfied nor dissatisfied	5	36	5	30
Dissatisfied	2	9	1	7
Completely dissatisfied	-	-	-	-
Total	**12**	**94**	**12**	**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	4	36
Some awareness	6	45
Limited awareness	1	12
No awareness	1	1
Total	**12**	**94**

Exhibit A2c: Level of concern and helpfulness of training

	Are you concerned that your organisation too readily attributes underperformance 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	12	74
No	8	75	-	23
Total	**12**	**90**	**12**	**97**

Exhibit A2d: Additional comments provided by respondents from Abertawe Bro Morgannwg University Health Board

- There is a tendency to blame late clinical coding for an incomplete picture of mortality rates but this is being addressed.
- Coding deficiencies have for too long been an obstacle for effective performance management.
- My understanding is that clinical coding is a complex and difficult area and that understanding influences the answers I have given.
- We are told that the clinical coding is not complete. I see such positives coming out of the department yet how then is clinical coding incomplete other than the piecemeal approach by other department or people.
- Clinical coding is an issue as it does not take into consideration all factors which will demonstrate good or under performance.
- The Welsh standards for clinical coding are insufficient so that we can only know with confidence what has happened three months or more after the event and for two per cent of patients we never know. There is no chasing of patients uncoded after a year I understand. We need to move to English levels of performance in coding not just aim to achieve a rather weak Welsh standard. We also need to standardise coding between and within health boards more effectively.

Appendix 3

Results of the medical staff survey

Responses were received from 39 of the medical staff for general medicine, general surgery and trauma and orthopaedics in Abertawe Bro Morgannwg 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	2	3
I am aware of it but it does not have direct relevance to me	3	10
I think it is important but it does not involve me	6	32
I think it is important and I am occasionally involved	20	64
I think it is important and I am regularly involved	8	21
Total	**39**	**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	18	60
Neither satisfied nor dissatisfied	11	33
Dissatisfied	6	16
Completely dissatisfied	-	4
Don't know	-	-
Total	**37**	**128**

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

- Where and how coding is used
- An overview
- Differences in coding between sites
- Operation coding structures
- How to search the existing database
- Coding of sub-specialities

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	29	97
Occasional meetings	8	28
Monthly meetings	-	2
Weekly meetings	-	1
Total	**37**	**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	7	25	21	48
No	30	103	16	79
Total	**37**	**128**	**37**	**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	4	29	1	15
Sometimes	16	44	11	38
Often	10	21	9	27
Frequently	9	31	18	45
Total	**39**	**131**	**39**	**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	-	9
Good	4	24
Average	15	50
Below average	13	23
Poor	7	24
Total	**39**	**130**

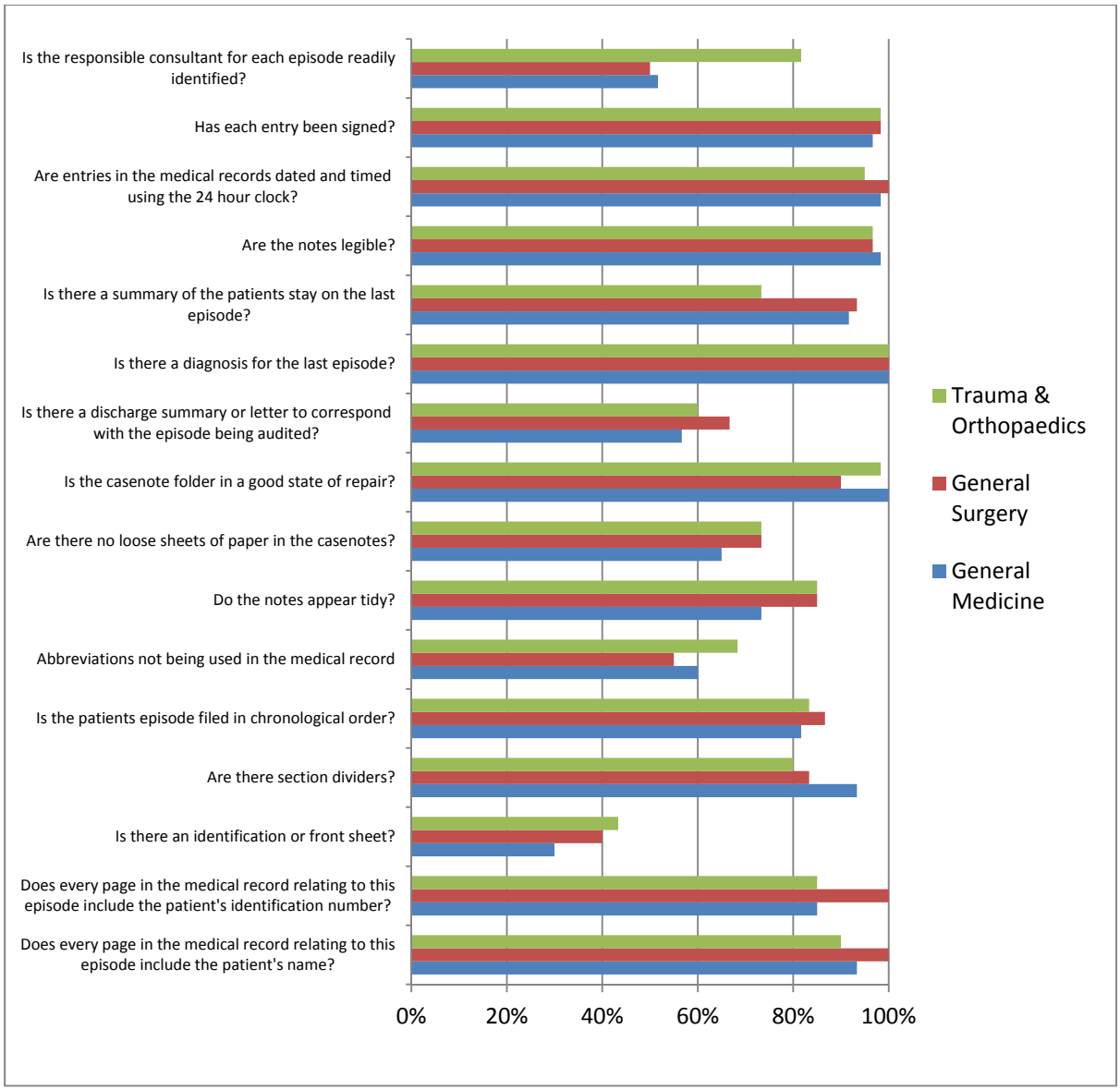
Exhibit A3h: Additional comments provided by respondents from Abertawe Bro Morgannwg University Health Board

- Filing of the results in medical records as well as opening of new volumes of medical records is extremely poor. Unfortunately least trained staff (ward clerk) open new volumes of medical records without any clinical input and they are unable to understand what part of the records from old volume should go to new volume. Records are not kept in good shape. Some areas use their own record and don't get amalgamated with main record.
- I do not believe that all the clinically important issues are coded during an inpatient episode.
- Coding is vital to how a department measures its performance and benchmarks it to other units. Coding information should not be 'hidden' and should form part of the medical record. Coders should be more visible.
- Frequently don't have notes for clinic. Due to the huge organisation and patients visiting at least four different sites.
- It is about time that we have electronic notes, and health records. I work across two health boards and the utilisation of the Wales Clinical Portal in Hywel Dda is better than some of the systems in ABMU. Why hasn't Wales developed and rolled out a single electronic health record that can work across all sites? Such a system would reduce error, make it easier for doctors in training, medical students and senior medical staff.
- The quality of medical records has fallen in recent times but the records seem to include more irrelevant information these days.
- Clinical coding is different from medical record keeping, though the better the latter, the easier the former. Any dissatisfaction the organisation has with the standard of clinical coding will not be solved simply by moving over to electronic record keeping. Though clinical coding is important, so are many other 'form filling' activities we need to do (eg, patient outcome measures), none of which we as consultants have any time for.
- Coding for spinal surgery done by consultant at time of operation on Theasis. This then imported to electronic discharge summary. Operation codes are out of date and therefore inaccurate for new operations. Clinical coders identify codes for diagnoses, but these are not checked by a clinician.
- Regularly patients come in for major elective surgery only for the notes to be in Neath or similar on the day of admission – this is very unsafe practice. Notes often not available at night or on weekends for emergency admissions.
- There needs to be more clinical engagement. An adequate and universal patient records system needs to be installed and used (as per other organisations in South Wales). An understanding of the use of clinical codes (without payment by results). A comprehensive list of codes to use. Updating of theatre systems to use the appropriate up-to-date codes.

Appendix 4

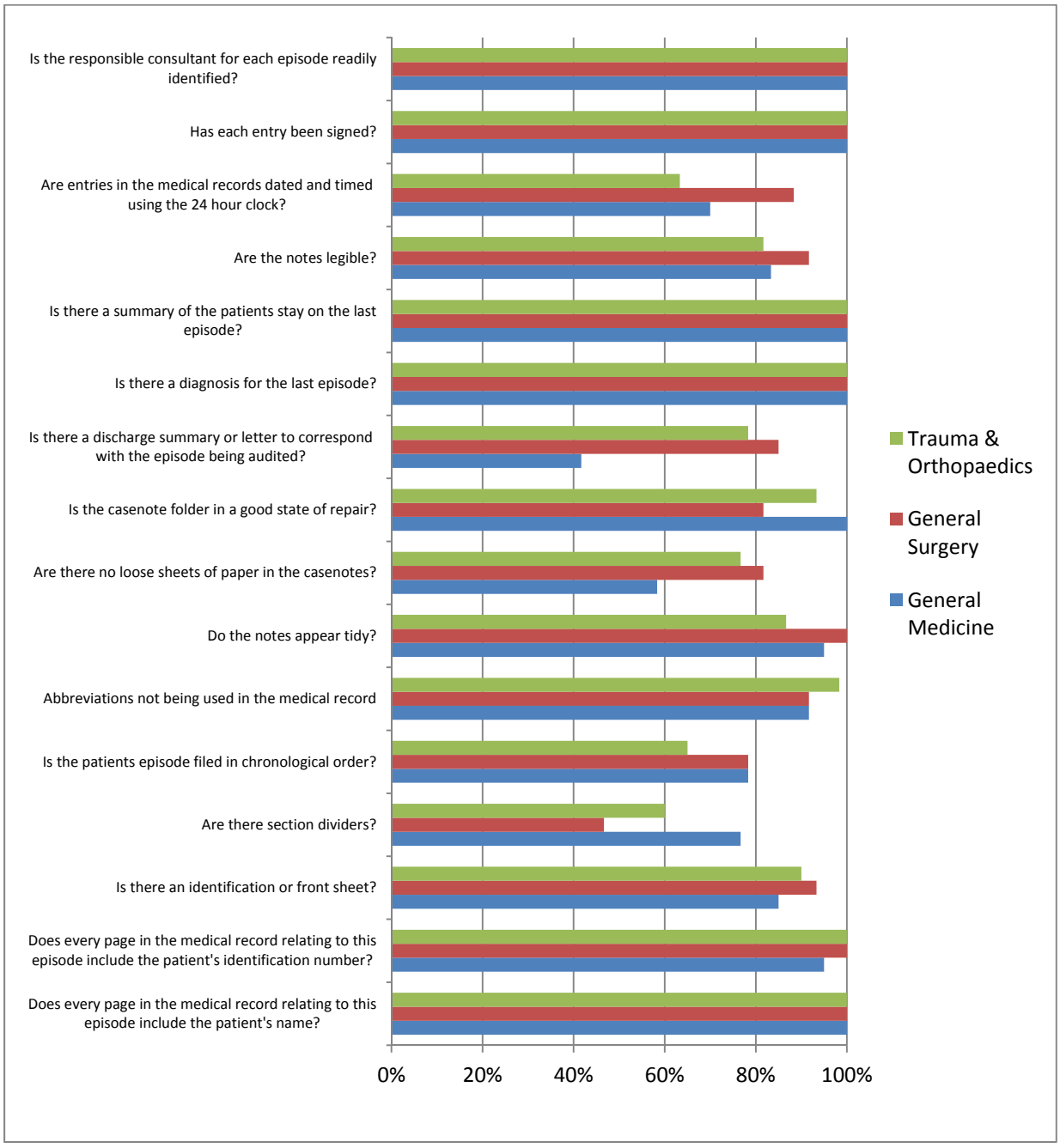
Compliance with Royal College of Physicians Standards for Medical Records by site and specialty

Exhibit A4a: Level of compliance with Royal College of Physician standards by specialty at Morriston Hospital



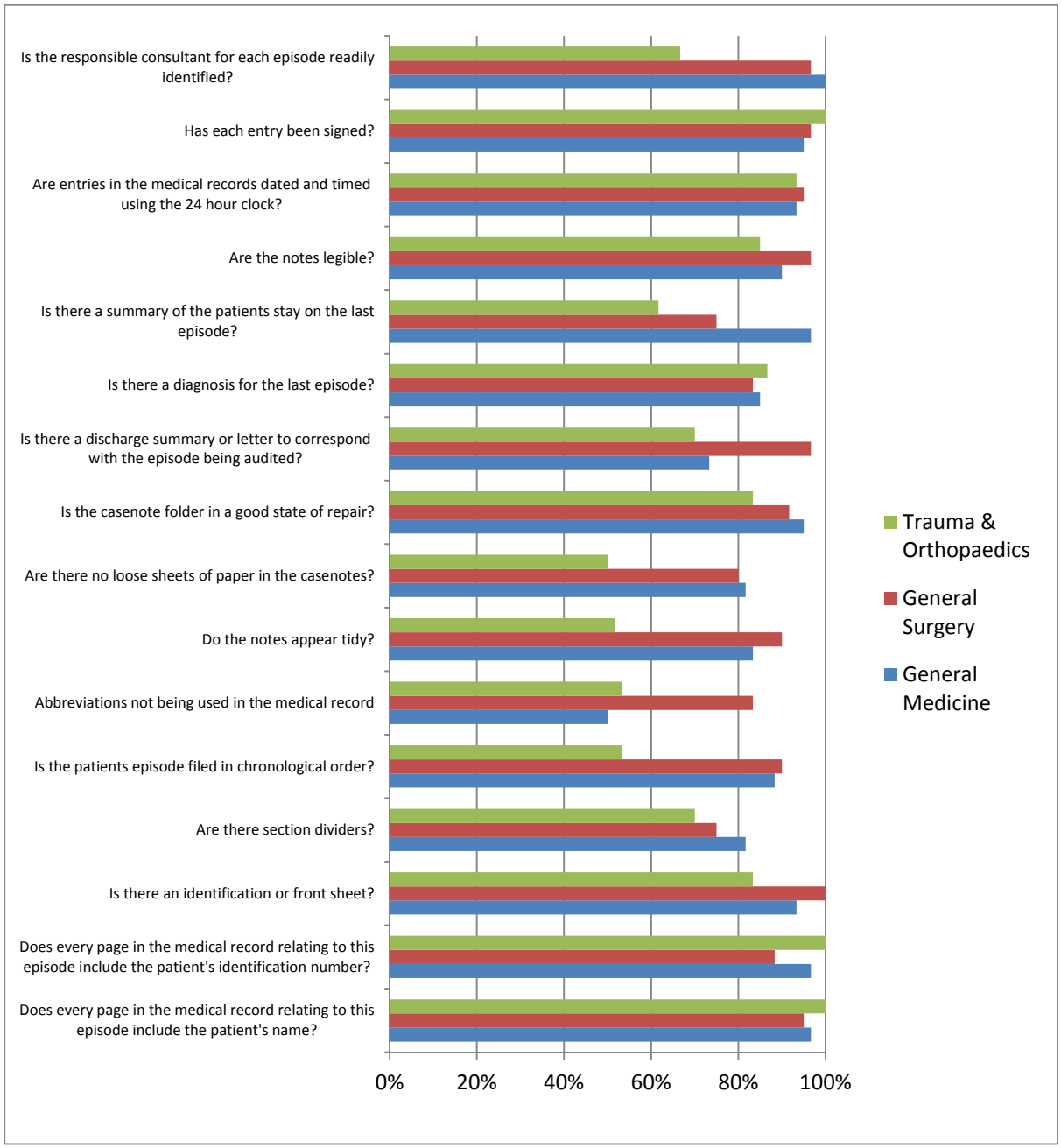
Source: Wales Audit Office

Exhibit A4b: Level of compliance with Royal College of Physician standards by specialty at Neath Port Talbot Hospital



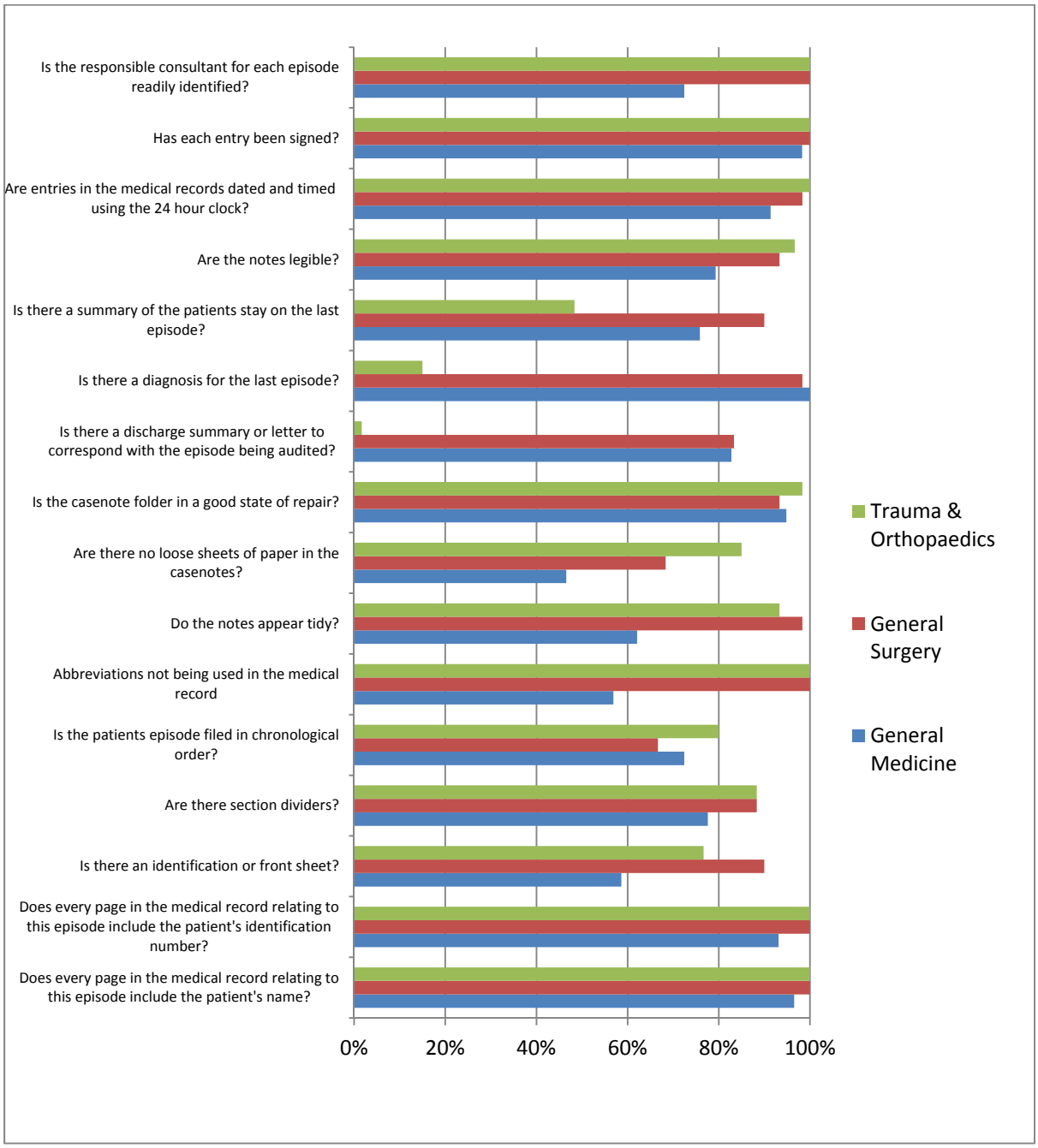
Source: Wales Audit Office

Exhibit A4c: Level of compliance with Royal College of Physician standards by specialty at Princess of Wales Hospital



Source: Wales Audit Office

Exhibit A4d: Level of compliance with Royal College of Physician standards by specialty at Singleton Hospital



Source: Wales Audit Office

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