



Diagnostic review of ICT capacity and resources

Public Health Wales

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Levels of investment in ICT in Public Health Wales NHS Trust compare well with other Welsh NHS bodies, but our diagnostic work would indicate that engagement with the clinical ICT agenda, training, integration and downtime record keeping could be improved

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Summary report

Introduction

1. Effective Information and Communications Technology (ICT) arrangements are essential parts of a modern and high-quality healthcare service. Health boards and trusts are becoming more reliant on the use of ICT not only to ensure the safe and effective delivery of healthcare and population-based health improvement and surveillance programmes in Wales but also to enable service modernisation, support service improvement and deliver efficiency savings. The confidentiality, integrity and availability of patient information and using both resilient and 'fit-for-purpose' ICT systems play an important part in delivering patient-focused care.
2. Welsh Government has recognised the importance that ICT plays¹ and along with its national programme for informatics, set aside a three-year investment package of £25 million in April 2013. This investment package was set up to support the local transformation of healthcare delivery in Wales through the introduction of new ways of working and treatments using modern technology. In its first year, Welsh Government allocated just over £9.5 million to health boards and trusts across Wales.
3. In 2014, the new NHS planning arrangements set out requirements for health boards and trusts to exploit opportunities of technologies and innovation, and to demonstrate how they intend to realise benefits from infrastructure and capital investments over the next three years. To support this, there is an expectation that health boards and trusts will have strategies in place, which demonstrate how they intend to develop their asset base to meet future service needs. This includes ICT equipment and infrastructure, covering all healthcare settings, including primary care.
4. The introduction of the three-year investment package has gone some way to start to support the vision set out in Welsh Government strategies by introducing new technology. However, in 2013, the Auditor General's report on **Health Finances** reported that the condition of assets such as ICT across Wales is mixed. It identified that the level of investment required just to replace existing ICT equipment classed as 'out of life' was estimated to be in the region of £68 million in March 2014, rising to £83 million by March 2015. The condition of ICT, along with other assets and estate, is a significant additional demand on the NHS's current and future revenue and capital expenditure budgets.

¹ **Designed for Life** in 2005 and **Together for Health** in 2011 both referred to the need for services to be effectively supported by an information and communications infrastructure to be able to deliver world-class healthcare in Wales. This was further emphasised in a written statement by Mark Drakeford, Minister for Health and Social Services in April 2014.

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5. Poorly maintained and out-of-date technology has implications for the quality and safety of services being provided. To move towards a single Electronic Patient Record, it is important that clinical information systems are integrated with each other and that the same systems are used across different sites that provide the same services within the organisation. Poor access to clinical information because of limited numbers of PCs, laptops, etc. or poor reliability of clinical systems also creates inefficiencies in the delivery of services and risks to patient care in the event that clinical information is not available.
 6. Given the increasing pressure on revenue and capital funds allocated to NHS bodies, the Auditor General for Wales has carried out a high-level diagnostic review of ICT capacity and resources to provide an indication as to how well existing ICT resources across Wales are supporting the delivery of healthcare, and to identify areas where greater focus is needed.
 7. Public Health Wales (the Trust) covers a broad range of activities. These include primary prevention, surveillance and early detection of disease, control and management of communicable diseases and environmental threats. It also includes improving healthcare quality, informing policy and implementing interventions and programmes to improve population health and wellbeing. At the time of our review, the Trust's ICT functions were split between two teams. The Screening Informatics team managed the ICT infrastructure and systems for the Screening Division while the Public Health Wales Informatics team managed the ICT infrastructure and systems for the remainder of the Trust's services and programmes. In some cases, the Trust relies in part upon third parties, such as the NHS Wales Informatics Service (NWIS).

Summary assessment

8. The diagnostic review is based upon an analysis of comparative data and the views of staff who use clinical ICT systems on a regular basis. The findings from the data analysis are set out in the main body of this report but **Exhibit 1** sets out a summary assessment that uses a traffic light rating to show how the Trust compares with other health boards and trusts in Wales.
9. We recognise that there are differences in the way in which the Trust operates and that some comparisons between the Trust and the other NHS bodies across Wales need to be considered with caution. However, we have concluded that including the all-Wales position for comparison alongside the Trust is a helpful approach for identifying areas where the Trust has the potential to improve, albeit there may be legitimate reasons as to why the performance of the Trust is where it is.

10. Across Wales, we have sought the views of medical and ward-based nursing staff who use clinical ICT systems. To provide a useful staff perspective within the Trust, we have sought the views of a broader group of clinical staff. For this reason, the responses received from the Trust are not included in the all-Wales average in relation to staff views, but the all-Wales position is provided as a comparison. For the Trust, our sample of staff included 13 clinical staff, the majority of whom work within the microbiology department. Further details of our audit approach are set out in [Appendix 1](#).
11. Based on this analysis, we have concluded that **levels of investment in ICT in Public Health Wales NHS Trust compare well with other Welsh NHS bodies, but our diagnostic work would indicate that engagement with the clinical ICT agenda, training, integration and downtime record keeping could be improved.**

Exhibit 1: Summary assessment

Indicator	Health board performance	Performance rating ²
The overall level of spend on ICT is the highest of health boards and trusts in Wales		
Total spend on ICT	The total level of spend on ICT is higher than the recommended two per cent of total revenue expenditure at 3.8 per cent, and is the highest in Wales.	
Trend in expenditure	Since 2010-11, total expenditure on ICT has continued to increase, although information provided only related to capital spend	-
Ability to attract additional ICT funding	A total of £0.4 million additional funding for ICT was obtained from other sources during 2013-14, which is lower than the all-Wales average of £0.828 million.	
Total spend on ICT workforce	The level of spend on ICT workforce is the highest in Wales at 1.29 per cent of total revenue, nearly four times the all-Wales average (0.38 per cent).	
Average spend per ICT Whole-Time Equivalent (WTE)	The average spend per ICT WTE is £37,421 which is higher than the all-Wales average of £35,467. This may reflect a richer grade-mix of staff.	Descriptive indicator

² Performance rating is based on comparative performance with other health boards and trusts in Wales. Green (●) indicates that performance is one of the most positive in Wales, Yellow (●) indicates that performance is around the all-Wales average, and Red (●) indicates that performance is one of the least positive in Wales.

Indicator	Health board performance	Performance rating ²
Staffing levels for ICT are the highest of health boards and trusts in Wales		
Total ICT staff levels	The total number of ICT staff per 1,000 health board/trust staff is the highest in Wales at 29.3 whole time equivalents and well above the all-Wales average of 8.8.	
ICT technical staff levels	The total number of ICT technical staff per 1,000 health board/trust staff is the second highest in Wales at 7.7 whole time equivalents and above the all-Wales average of 4.0.	
Information management staff levels	The total number of information management staff per 1,000 health board/trust staff is the highest in Wales at 8.7 whole time equivalents and above the all-Wales average of 2.3.	
Data analyst (ICT) staff levels	The total number of ICT data analysts per 1,000 health board/trust staff is the highest in Wales at 5.0 whole time equivalents and above the all-Wales average of 0.6.	
Although staff are generally positive, the level of commitment to clinical ICT is lower than other health bodies and there may be scope for greater integration		
Organisational commitment to clinical ICT	The level of commitment to clinical ICT is below the all-Wales average, and is the lowest in Wales.	
System integration	Three out of 23 clinical systems have two-way links to health board's patient administration systems (PAS). This level of integration is less favourable than other NHS organisations, although this may reflect the nature of the Trust's clinical information systems.	Descriptive indicator
Management of ICT staff outside of the ICT department	There is one member of staff managed outside the management of the ICT department, but this compares less against other NHS bodies.	
Staffs perception of the organisation and management of ICT	Only 6 out of 13 (46 per cent) staff indicated positive views about the organisation and management of ICT, but the all-Wales average was 31 per cent, so this was the third highest rate in Wales.	

Indicator	Health board performance	Performance rating ²
Availability of PCs compares favourably with other Welsh health bodies and staff are content with their access to them		
Total number of devices (PCs, terminals, etc.) per doctor	The number of devices per WTE doctor is the highest in Wales at 17.9 and well above the all-Wales average of 6.2. Based on all staff, the number of devices is also high.	
Physical access to computers (staff)	On average, only 2 out of 13 (15 per cent) staff indicated that physical access to computers is problematic on a daily or weekly basis, compared with the all-Wales average of 33 per cent.	
Staff perceived problems with the reliability of systems and there is a lack of downtime records for many systems		
Poor access due to problems with the systems (staff)	On average 3 out of 13 (23 per cent) staff indicated that access due to system crashes or non-availability is problematic on a daily or weekly basis, compared with the all-Wales average of 19 per cent across Wales.	
Records of planned and unplanned downtime	Partial records of planned and unplanned downtime only exist in relation to the systems for screening services and for the Health Promotion and Infectious Diseases System.	
Level of unplanned downtime	The total reported unplanned downtime during 2013-14 was 5 hours.	Descriptive indicator
Despite gaps in training arrangements, staff generally feel proficient in the use of systems and are able to rely on the information held on them		
Training on clinical information systems for new employees	Training on its clinical information systems is not offered to all new employees where the use of such systems is required.	
Access to log-on ID and passwords	Clinical staff do not have to attend a training session to obtain a log-on id and password for the systems they need to access.	
Proficient use of IT systems	9 out of 13 (69 per cent) staff felt confident that they were proficient in using the IT systems they needed to use. This was in line with the all-Wales average of 70 per cent.	
Data protection and Caldicott training	Refresher training for data protection/Caldicott requirements is mandatory for all staff.	

Indicator	Health board performance	Performance rating ²
Data quality training	Data quality training is not available although 7 out of 13 (54 per cent) staff said that they could rely on the information contained in the clinical systems. This was just above the all-Wales average of 52 per cent.	
Training for temporary clinical staff	Training is provided to all temporary clinical staff, which compares favourably across Wales.	
Clinical ICT systems are supporting staff to undertake their roles, although in comparison, staff perceive the systems to be difficult to use		
Use of clinical systems to obtain clinical information	On average, 9 out of 13 (69 per cent) staff identified that they were able to rely solely on computer systems to obtain clinical information, compared with the all-Wales average of 22 per cent. This is the second highest in Wales.	
Clinical information is easy to find	5 out of 9 (56 per cent) staff identified that clinical information is easy to find on the system, compared with all-Wales average of 82 per cent. This is the lowest in Wales.	
Use of clinical systems to complete clinical tasks	On average, 6 out of 13 (46 per cent) staff identified that they were able to rely solely on computer systems to complete clinical tasks, compared with the all-Wales average of 28 per cent. This is the highest in Wales.	
Use of bespoke applications developed personally in-house	10 out of 13 (77 per cent) staff identified that they used applications developed personally in-house compared with the all-Wales average of 43 per cent. This is the second highest in Wales.	

Source: Wales Audit Office

Recommendations

12. In undertaking this diagnostic work, our analysis would indicate that the Trust needs to focus attention on the following areas for improvement:

Commitment to clinical ICT

- R1 The Trust needs to improve the corporate commitment to clinical ICT, by ensuring that:
- the strategy for ICT is up-to-date and supported by staff;
 - there is an improved level of clinical engagement with the clinical ICT agenda. This could include:
 - establishing a clinical ICT user group;
 - considering the potential to develop clinical champions;
 - inviting clinical representatives onto the ICT steering group; and
 - developing the links between ICT and the clinical governance programme.
 - there is greater co-ordination between IT and Information Management; and
 - a clear ICT benefits management programme is set out.

Integration

- R2 The Trust needs to strengthen integration between the two informatics departments and also consider the potential for strengthening links, where appropriate, between the Trust's clinical information systems and the main patient administration systems within the health boards.

Training of staff

- R3 The Trust needs to ensure that appropriate and timely training is in place. This is particularly important in relation to new starters in order to prevent them from accessing the systems without having the appropriate training.

Negative perceptions of staff

- R4 The Trust needs to understand and address the negative perceptions of staff in relation to reliability and ease of use of the clinical information systems to ensure that the systems' potential is maximised.

Reliability of ICT equipment

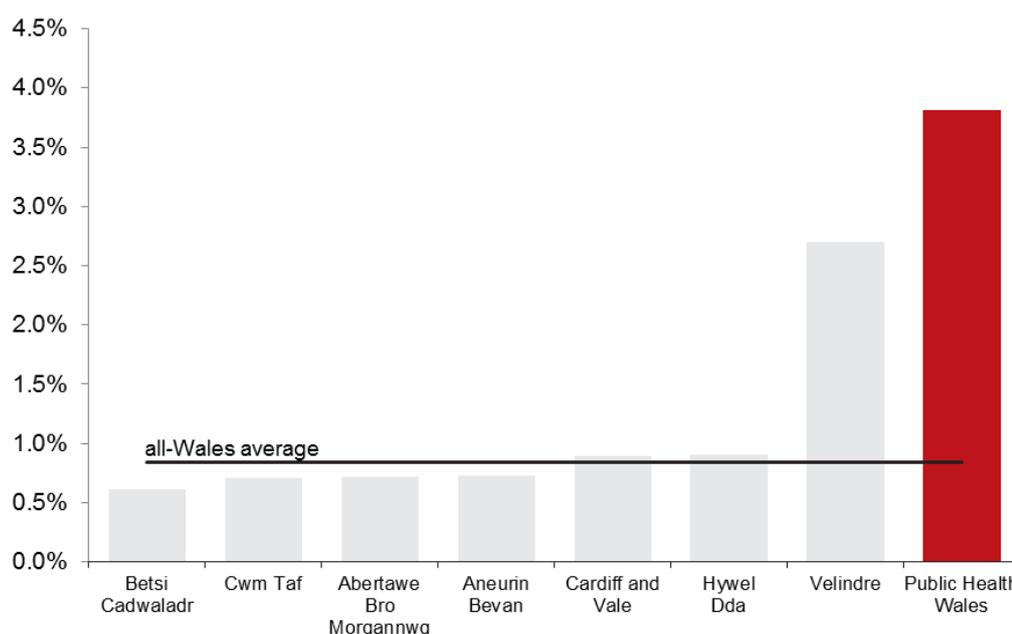
- R5 To understand the extent to which there is lost time due to system failures, the Trust needs to ensure that robust records are in place to capture unplanned downtime across all of its clinical information systems.
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Detailed report

The overall level of spend on ICT is the highest in Wales

13. The Welsh Government's previous strategy **Improving Health in Wales** in 2001 recognised that expenditure on ICT needed to be at least two per cent of total revenue expenditure. This recommendation continues to remain relevant to NHS bodies across Wales, but in times of austerity is becoming increasingly more challenging to meet.
14. For the financial year 2013-14, the proportion of total revenue expenditure spent on ICT across Wales was just 0.84 per cent (**Exhibit 2**). Within the Trust, the total level of spend on ICT is much higher than the recommended two per cent, and is the most favourable in Wales at 3.8 per cent, along with Velindre NHS Trust.

Exhibit 2: Total ICT expenditure as a proportion of total revenue expenditure in 2013-14



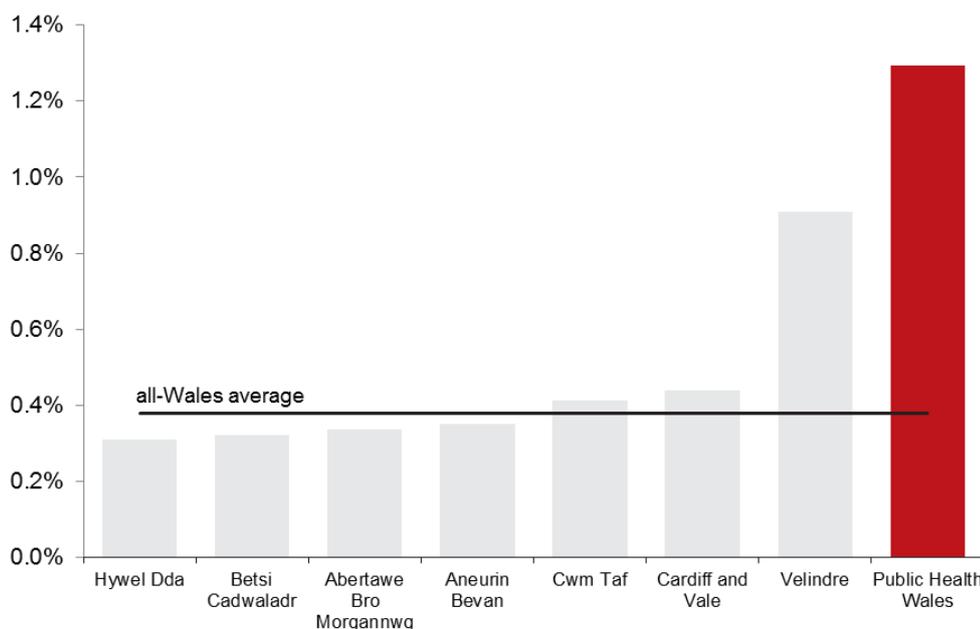
Source: Wales Audit Office survey, Health Board/Trust financial accounts

15. Since 2010-11, the level of ICT expenditure in the Trust is reported to have increased from £0.4 million to £4 million in 2013-14, however information provided for previous years only included capital spend. The capital spend in 2013-14 was £1 million, a positive increase of more than double that spent in 2010-11. In addition, the Trust indicated that it had been able to attract additional funding in the region of £0.4 million

during 2013-14³. This is positive, although compares lower than the all-Wales average of £0.828 million. This additional funding was reported to have been made up solely of discretionary capital.

16. During 2013-14, the Trust reported spending £1.358 million on ICT workforce. This accounted for 34 per cent of the total spend on ICT. The level of spend on ICT workforce as a proportion of total revenue expenditure within the Trust exceeds that of all other organisations across Wales and is well above the all-Wales average (Exhibit 3).

Exhibit 3: ICT workforce expenditure as a proportion of total revenue expenditure in 2013-14



Source: Wales Audit Office survey, Health Board/Trust financial accounts

17. The average spend per ICT WTE is £37,421⁴. This is just above the average for Wales, where the average spend is £35,467. This is likely to reflect a differing skill mix or higher-grade mix of staff at the Trust.

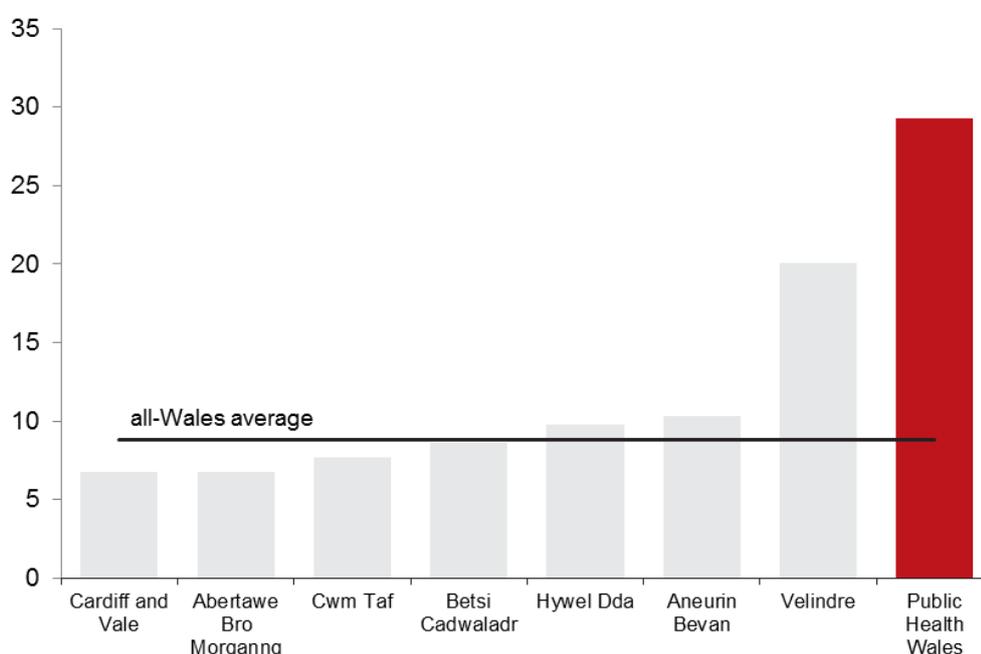
³ Non-recurring income specified by the Health Board against the categories 'Discretionary Capital', 'NWIS funding', 'Project Grants' and 'Other'.

⁴ Figure includes any NWIS staff who are hosted by the organisation

Staffing levels for ICT are the highest in Wales

18. The ability of the ICT department to effectively deliver and support an ICT infrastructure that best serves the needs of the organisation, will depend on the extent to which appropriately skilled resources are available. Clinical information systems also hold a vast amount of information, it is therefore important that there is sufficient capacity within the ICT department to ensure that the systems are reliable and accessible to those who need them. It is also important that the data contained in the systems is the right data, is managed and presented appropriately, as well as analysed and transformed into useful information to provide the right business intelligence to make both strategic and operational decisions within the NHS.
19. For the financial year 2013-14, the Trust indicated that it had 36.3 WTEs in post within the ICT department⁵. The number of ICT WTEs per 1,000 total health board/trust staff is well above the all-Wales average at 29.3 WTE per 1,000 total health board/trust staff (Exhibit 4) and is the highest in Wales.

Exhibit 4: Total ICT staff (WTE) per 1,000 total health board/trust staff (WTE)



Source: Wales Audit Office survey, Stats Wales

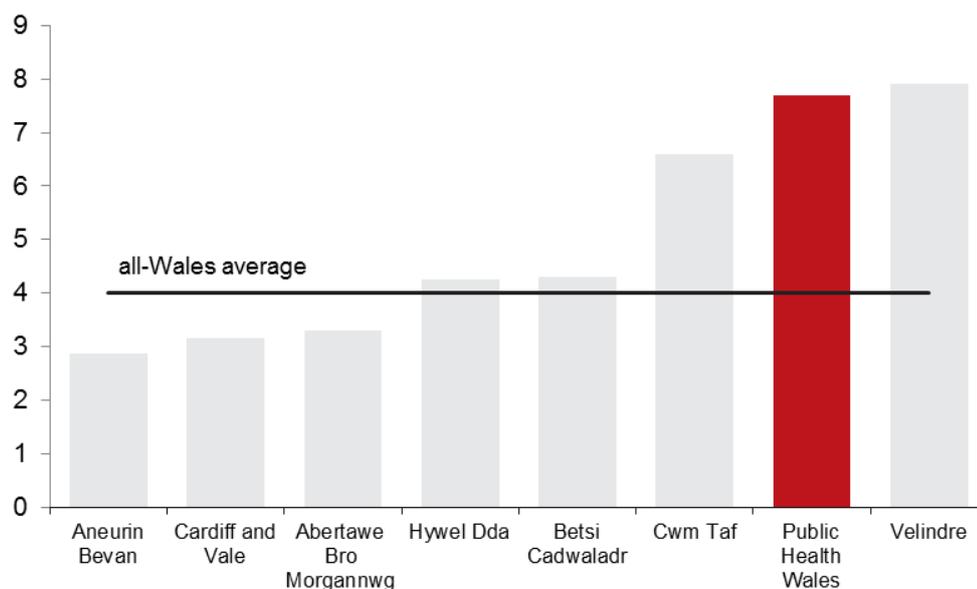
⁵ Whole-time equivalents include NWIS staff who are hosted by NHS bodies. During 2013-14, the Trust did not host any NWIS staff.

20. As part of our work, we considered the extent to which different skilled staff are in post. This included:

- technical staff whose roles include the development, implementation and operation of the core ICT infrastructure;
- information management staff, including ICT data analysts⁶, whose roles include preparing management information reports, designing and maintaining databases and providing data interpretation and analysis; and
- other staff, including helpdesk staff, software developers, project managers and ICT trainers.

21. The Trust has indicated that it has 10.5 WTE technical staff. The level of ICT technical staff per 1,000 total health board/trust staff is the second highest in Wales at 7.7 WTE per 1,000 total health board/trust staff (Exhibit 5).

Exhibit 5: Total IT Technical staff (WTE) per 1,000 total health board/trust staff (WTE)

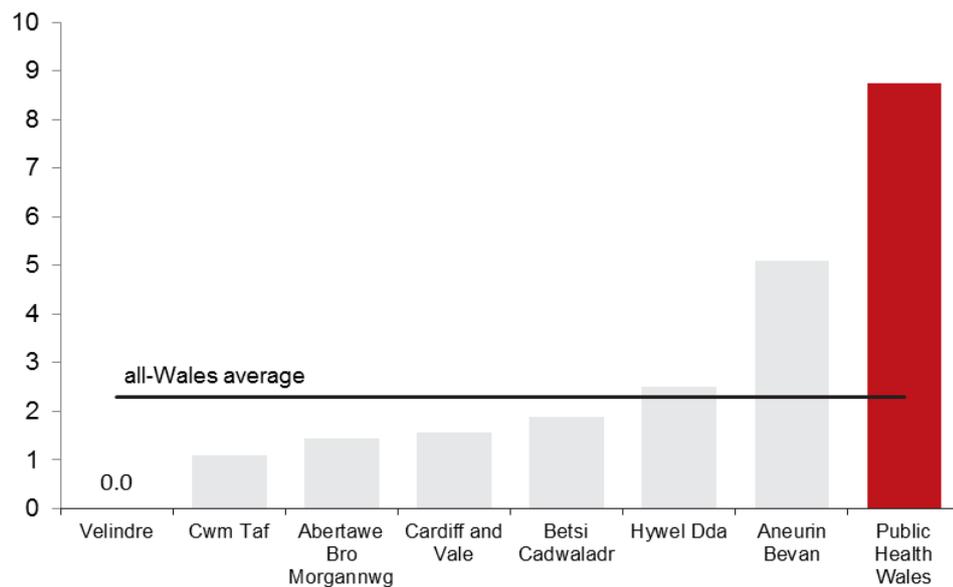


Source: Wales Audit Office survey, Stats Wales

⁶ Staffing levels for data analysts within the Trust reflect generic ICT data analysts within the Informatics departments and exclude those working in the intelligence division

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- 22.** The Trust has indicated that it has 10.8 WTE information management staff. The level of information management staff per 1,000 total health board/trust staff is significantly higher than the all-Wales average at 8.7 WTE per 1,000 total health board/trust staff (**Exhibit 6**). The level of staff is likely to reflect the important role that the Trust plays in supporting the other NHS bodies in relation to the public health agenda, as well as the need to manage information contained in a broader range of clinical systems that those available in health boards.

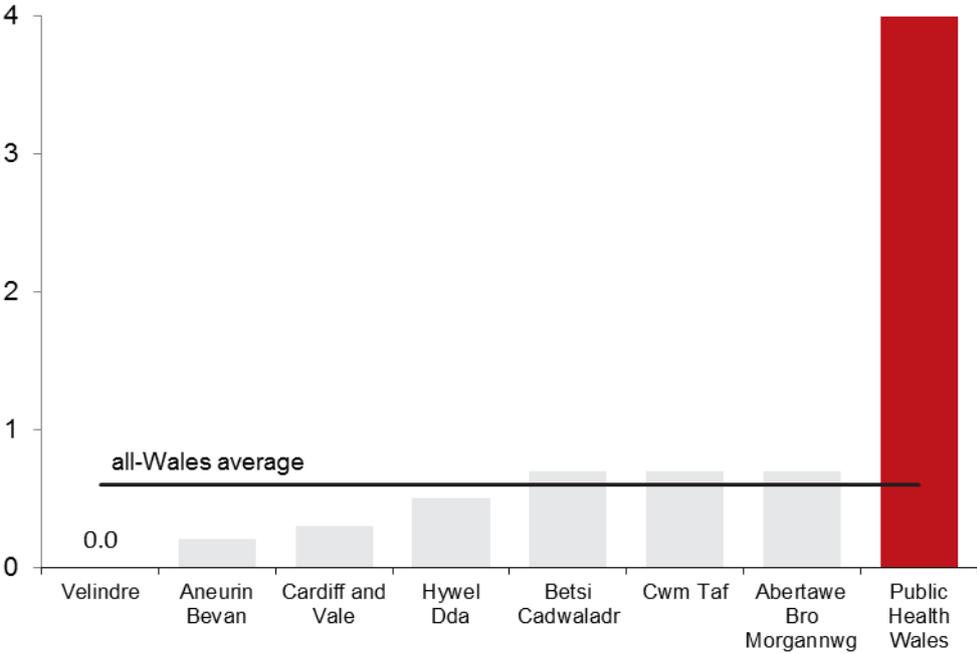
Exhibit 6: Total Information Management staff (WTE) per 1,000 total health board/trust staff (WTE)



Source: Wales Audit Office survey, Stats Wales

- 23.** Within the information management staff, the Trust has indicated that it has 5.0 WTE data analysts. The level of data analysts per 1,000 WTE total health board/trust staff is also significantly higher than the all-Wales average (**Exhibit 7**).

Exhibit 7: Total data analysts (WTE) per 1,000 total health board/trust staff (WTE)



Source: Wales Audit Office survey, Stats Wales

Although staff are generally positive, the level of commitment to clinical ICT is lower than other health bodies and there may be scope for greater integration

24. Commitment to ICT by senior management and clinical staff is important in encouraging greater use of existing information systems and commitment to future developments. As part of our work, we have considered a number of areas of good practice to demonstrate whether there is a commitment to clinical ICT. These areas have been weighted using a scoring matrix to provide an overall indication of the level of commitment to ICT within the Trust ([Exhibit 8](#)).

Exhibit 8: Compliance with aspects of good practice to demonstrate a positive commitment to clinical ICT

Good practice area	Trust score ⁷
The trust has a documented ICT strategy which is up to date (maximum score of 2)	1
The ICT strategy or new ICT developments have been discussed at board level meetings during the last 12 months (maximum score of 2)	2
The trust has an ICT steering group with a board member (maximum score of 1)	1
The ICT steering group has clinical members (maximum score of 1)	0
The ICT strategy or new ICT developments have been on the agenda of executive level meetings during the last 12 months (maximum score of 2)	2
The ICT lead is a member of the Executive Management team (maximum score of 3)	3
There is central co-ordination of IT and Information Management (maximum score of 2)	0
There is active clinical involvement in the trust's ICT programme, including the identification of clinical champions (maximum score of 3)	2
There is a good understanding of the organisation's technical infrastructure (maximum score of 1)	1
There is a documented ICT benefits management programme (maximum score of 3)	0

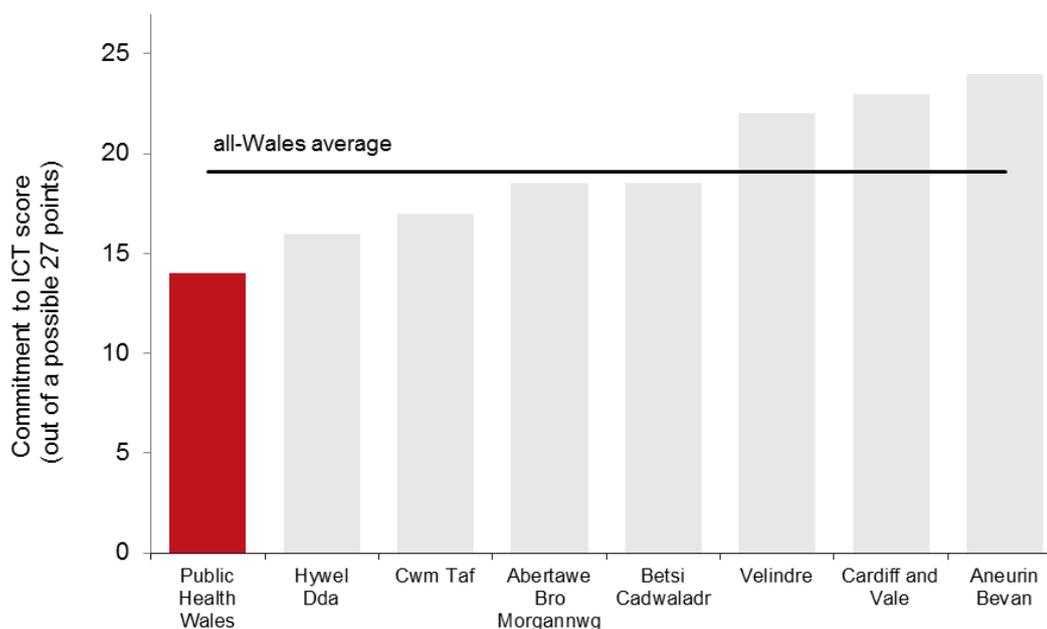
⁷ A detailed breakdown of the scoring principle is included in [Appendix 2](#).

Good practice area	Trust score ⁷
There is involvement by the ICT lead in the Clinical Governance programme (maximum score of 3)	0
There is a clinical ICT user group (maximum score of 2)	0
There is a mechanism to routinely seek staff feedback (maximum score of 2)	2
Total score (out of a maximum of 27)	14

Source: Wales Audit Office survey

25. The overall level of commitment to ICT in the Trust is the lowest in Wales (Exhibit 9). This is largely due to a lower level of clinical engagement with the ICT agenda than other NHS bodies.

Exhibit 9: Overall score for commitment to clinical ICT



Source: Wales Audit Office survey

26. The Trust currently runs approximately 23 clinical information systems, eight of which are provided by NWIS. As part of our work, we asked the Trust to identify the extent to which the systems relate to the health board’s patient administration systems (PAS) to allow the sharing of information between organisations. The Trust identified that, of the 23 clinical information systems reported to us, three have two-way links, six have one-way links⁸, and the remainder of the systems are standalone (**Exhibit 10**). Given the nature of some of the clinical information systems, it is likely that having no links to the health board’s patient administration systems is appropriate. However, there are a number of systems, in particular those linked with the screening services, which may benefit having improved links to minimise the risk of inconsistencies in data, which is stored on both systems.

Exhibit 10: Extent to which clinical information systems are integrated with the Patient Administration System’s within other NHS bodies

Clinical system	
Abdominal Aortic Aneurysm (AAA) Screening	No link
Bowel Screening (BSIMS)	No link
Cervical Screening (NHAIS)	No link
Breast Screening (NBSS)	No link
New-born Hearing (AWNBHS)	No link
New-born Bloodspot (NBSW)	No link
Cervical Screening Cervical Audit	No link
Breast Screening Malignancy Audit	No link
Breast Screening Letter Writer	No link
Cervical Screening Pathology	No link
Microbiology LIMS - TrakCare	Two-way link
Microbiology LIMS – Telepath	Two-way link
Microbiology LIMS – Masterlab	Two-way link
Microbiology Lab Notifications – LabExpert	One-way link
Microbiology Lab reports store – Datastore	One-way link
Microbiology Quality Management – Notes	No link

⁸ Two-way links allow information to be updated and shared in both directions, such as patient demographics, between PAS and the clinical information system. One-way links only allow information to be updated and shared in one direction, usually from PAS to the clinical information system. This means that if information is updated on the clinical information system, this is not automated updated on the PAS, which creates a risk that the two systems contain inconsistent data.

Clinical system	
Health Protection Infectious disease control	One-way link
Health Protection Sexual Health Surveillance	One-way link
Case management – SSW	No link
Observatory Congenital anomalies	No link
Welsh Cancer Intelligence and Surveillance Unit (WCISU) Cancer Registry	One-way link
Health Protection Flu surveillance	One-way link
Health Protection Environmental Incident - case management	No link

Source: Wales Audit Office survey

- 27.** The structure within the Trust is such that there are separate management arrangements for IT and Information Management relating to screening services, and those for the rest of the Trust’s services and programmes. These services are largely managed through two ICT teams. The Trust however did report that it also funded 1.0 WTE member of staff outside of the ICT department who provides specific systems support to Health Protection, the Observatory, and WCISU. This post accounted for 1.3 per cent of total ICT expenditure within the Trust, but this is well below the all-Wales average of 9.9 per cent and the lowest in Wales.
- 28.** As part of our staff survey, we asked staff their views on the ICT available within their respective organisation. Specifically, we asked their views on:
- the organisation’s use of the ICT facilities;
 - whether clinical information systems have improved patient care; and
 - whether ICT in the organisation is better than other organisations where they have previously worked.
- 29.** Overall, 6 out of 13 (46 per cent) staff in the Trust responded positively, compared with an all-Wales average of 31 per cent⁹. This was the third highest positive response rate in Wales. Staff were the least positive in relation to whether ICT is better than other organisations where they have previously worked, and whether the Trust is making good use of the IT facilities ([Exhibit 11](#)). Free-text comments received in the survey by Trust staff, which provide some context for their views, are included in [Appendix 3](#).

⁹ All-Wales average figures relating to the staff surveys exclude Public Health Wales responses as the target audience for the surveys differed. However, the all-Wales average figures have been included to provide a broader comparison.

Exhibit 11: Percentage of staff agreeing or strongly agreeing with the following statements relating to ICT within the Trust

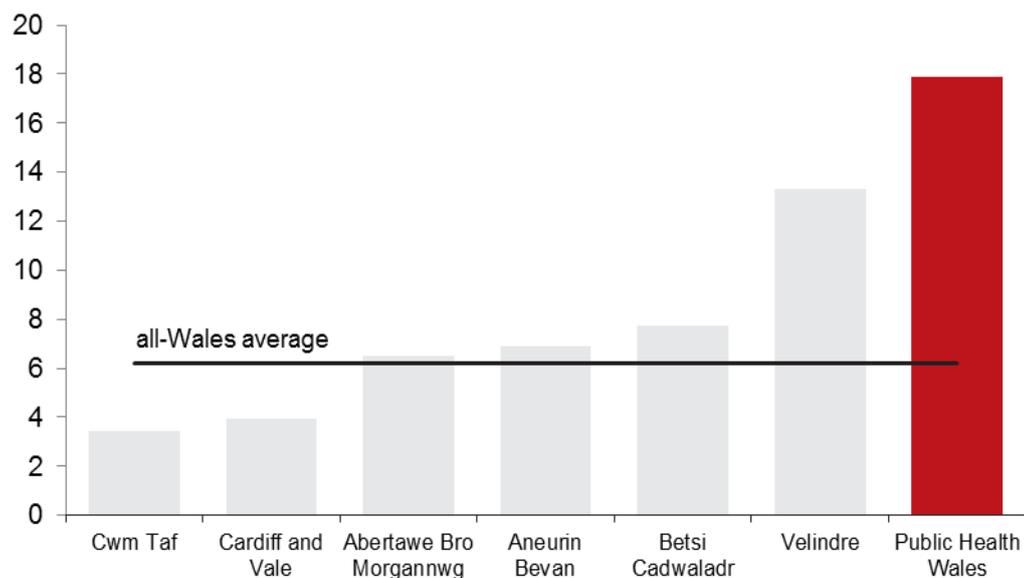
	This trust	All-Wales (excluding Public Health Wales)
This organisation is currently making good use of the IT facilities	33.3	24.2
The development of IT systems in this organisation has improved patient care	72.7	46.8
The IT in this organisation is better than the IT in other organisations that I have personally seen	33.3	20.7

Source: Wales Audit Office survey

Availability of PCs compares favourably with other Welsh health bodies and staff are content with their access to them

- 30.** In order for staff to be able to access clinical information systems, it is important that there is a good level of access to devices (PCs, terminals etc.) available in clinical areas. Across Wales, we reviewed the number of devices standardised per WTE doctor and WTE nurse ([Exhibit 12](#)). For the Trust, we have only considered the number of devices per WTE doctor, the level of which is the highest in Wales. A similar calculation based on all staff would also indicate that the number of devices is the highest in Wales.

Exhibit 12: Total number of devices per doctor (WTE)



Source: Wales Audit Office survey, Stats Wales

- 31.** As part of our staff surveys, we asked staff how often they were unable to use a computer to undertake tasks and obtain information due to insufficient computers being available. Results from the staff survey in the Trust would indicate that access to computers is not problematic ([Exhibit 13](#)).

Exhibit 13: Percentage of staff reporting that they were unable to complete tasks and obtain information due to insufficient computers being available on a weekly or more frequent basis

	This Trust	All-Wales (medical staff)	All-Wales (nursing staff)
On the ward		57	48
In outpatient rooms		20	
In the office/department	15	22	

Source: Wales Audit Office survey

Staff perceived problems with the reliability of systems and there is a lack of downtime records for many systems

- 32.** To support the delivery of services, clinical information systems also have to be reliable. If users of the systems continually have trouble (real or perceived) accessing the systems, then the benefits from have electronic systems will be largely reduced as staff will become reluctant to use them or will create parallel systems such as maintaining paper records.
- 33.** Our staff survey identified that 3 out of 13 (23 per cent) staff reported being unable to use a computer in the department due to system crashes or the system being unavailable on a weekly or more frequent basis. This is a slightly higher proportion than the all-Wales position ([Exhibit 14](#)).

Exhibit 14: Percentage of staff reporting that they were unable to use the computer due to system crashes or the system not being available on a weekly or more frequent basis

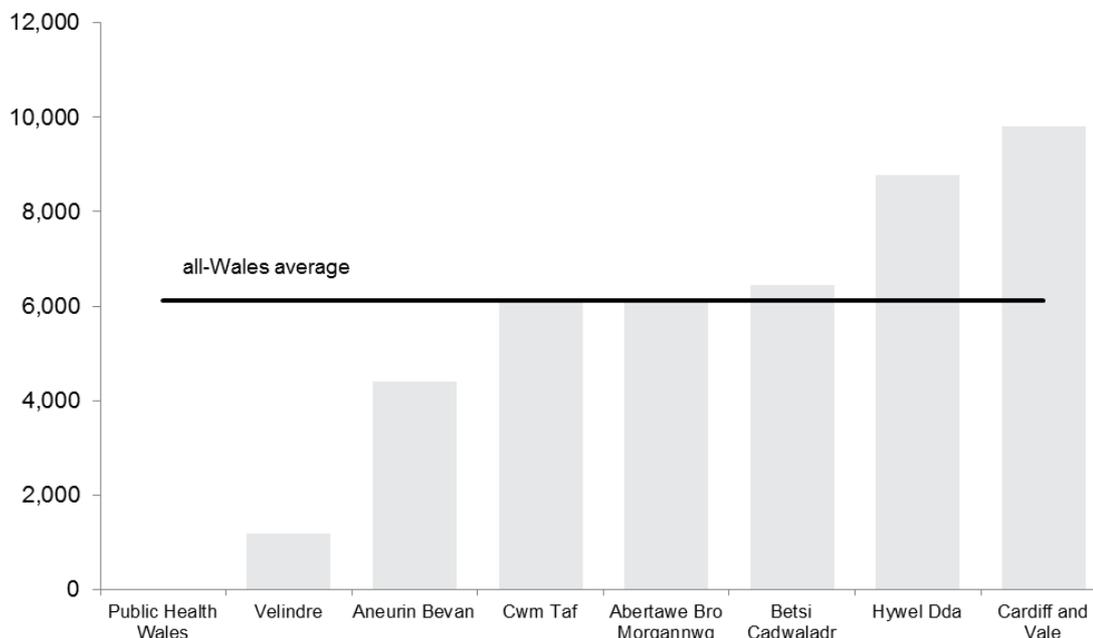
	This Trust	All-Wales (medical staff)	All-Wales nursing staff)
On the ward		24%	28%
In outpatient rooms		20%	
In the office/department	23%	19%	

Source: Wales Audit Office survey

- 34.** To monitor the extent to which the clinical information systems are not available for use, health boards and trusts should be maintaining a record of planned and unplanned downtime. The Trust was able to confirm that there were partial downtime records maintained for each of the systems across screening services, covering software, network and server failure. Across the rest of the Trust, only complete downtime records were available for the Health Promotion and Infectious Disease systems. No records are in place for any of other systems.

35. Where records exist, the Trust identified one episode of unplanned downtime on its Breast Screening system during 2013-14, which lasted for one hour. Across other service areas, the Trust reported one episode of unplanned downtime to the case management module within its Health Protection Environmental Incident system. This lasted for four hours. The Trust also recorded two occasions of planned downtime on its Infectious Disease system during 2013-14. The total amount of planned downtime was also four hours. We are unable to provide a comparison of unplanned downtime across Wales due to the incompleteness of downtime records.
36. The age of equipment can be a major contributory factor in relation to system failures and downtimes. Where information was available, the Trust reported that the average age of equipment varies from three years for PCs up to five years for desktop operating systems. This compares favourably with other NHS bodies. As part of our work, we have captured the extent to which existing ICT equipment was classed as 'out of life'¹⁰ across Wales at the end of March 2014 (Exhibit 15). Health boards and Velindre NHS Trust were required to submit these data to Welsh Government as part of a data capture exercise in 2014; however, the Trust was not required to.

Exhibit 15: Gross replacement cost (£000's) of ICT equipment classed as 'out of life' at 31 March 2014



Source: NHS submissions to Welsh Government

¹⁰ 'Out-of life' is defined as being beyond its useful life and economic repair.

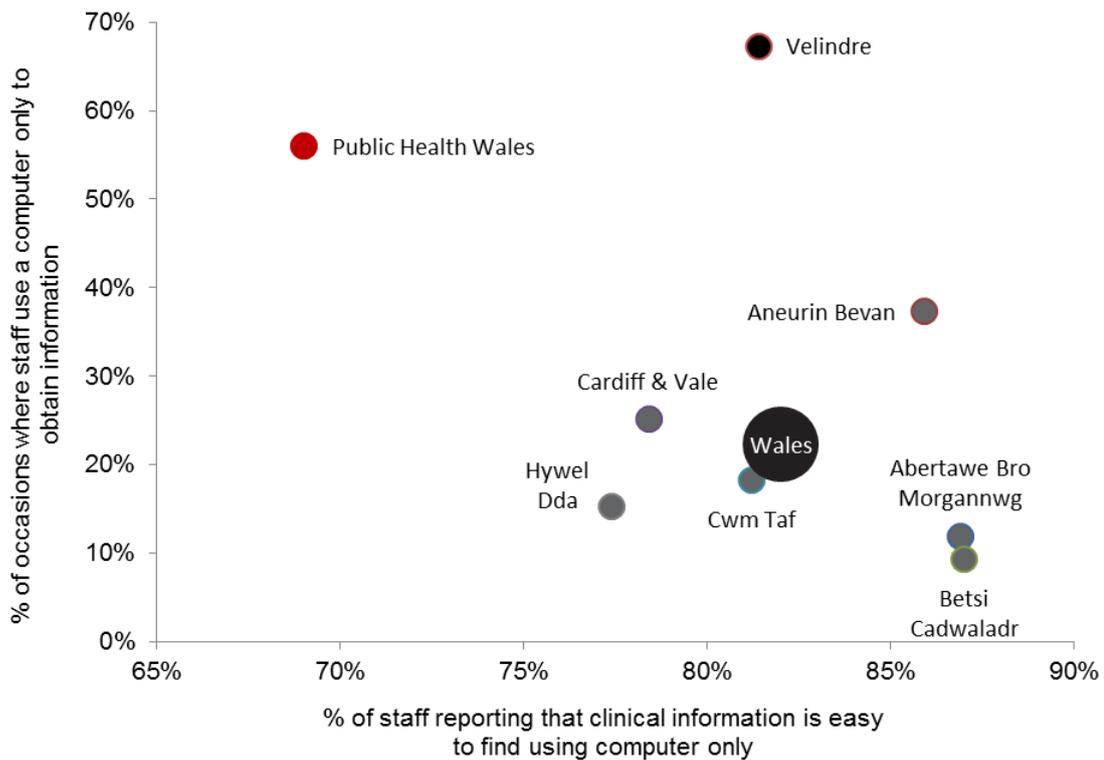
Despite gaps in training arrangements, staff generally feel proficient in the use of systems and are able to rely on the information held on them

37. To be able to make the best use of the clinical information systems available to clinical staff and to understand the requirements placed upon them in terms of data quality and data protection, an appropriate level of training needs to be put in place.
38. The Trust identified that training on its clinical information systems is not offered to all new employees where the use of such systems is required. It was also stated that clinical staff do not have to attend a training session to obtain a log-on id and password for the systems they need to access. This is contrary to arrangements across the majority of other organisations we reviewed. Our staff survey however identified that 9 out of 13 (69 per cent) staff felt confident that they were proficient in using the IT systems that they needed to use for their job, which is comparable with the all-Wales average of 70 per cent.
39. The staff survey suggests that delays are perceived in the receipt of training, which may explain why staff are able to access passwords prior to attending training. At the Trust, six out of 13 (46 per cent) staff who expressed an opinion disagreed with the statement that 'New staff do not have to wait to get the training/passwords they need to use the IT systems'. However, this is better than the all-Wales average of 60 per cent.
40. When asked, the Trust reported that refresher training for data protection and Caldicott requirements was mandatory for all staff. Data quality training however is not provided, although these arrangements largely mirror those in place at other NHS bodies across Wales. Interestingly, seven out of 13 (54 per cent) staff said that they could rely on the information contained in the clinical systems. This was just above the all-Wales average of 52 per cent. In addition, six out of 13 (46 per cent) staff said that the information on the IT systems is accurate. This was also just above the all-Wales average of 42 per cent. Across the organisations in our review, data protection and Caldicott training is mandatory at all but one. Data quality training is only mandated at one organisation in Wales, although it is optionally provided at four others.
41. As well as permanent staff, it is also important that temporary staff employed to work in clinical areas are also provided with the necessary training. The Trust confirmed that all temporary staff are offered training as a matter of policy, which is good practice.

Clinical ICT systems are supporting staff to undertake their roles, although in comparison, staff perceive the systems to be difficult to use

42. As part of our staff survey, we asked staff their views on the ability to use ICT systems to obtain clinical information and to undertake clinical tasks, without the need to rely on paper-based systems. Within the health boards, this included a wide range of clinical information to support activity within outpatient departments and on the wards. To provide a broad comparison for the Trust, we asked staff the extent to which systems supported them to record and obtain information electronically more generally.
43. Seven out of 13 (54 per cent) staff agreed that systems supported the recording of information electronically with limited or no need to use paper notes. Nine out of 13 (69 per cent) staff agreed that they were usually able to get the information they needed from the computer systems. Of those who are able to get the information they needed, five out of 9 (56 per cent) staff identified that it was fairly or very easy to find the information that they needed.
44. Across Wales, just 22 per cent of staff (doctors) reported being able to use a computer only to obtain clinical information, however 82 per cent of those who used the computer systems identified that information was easy to find ([Exhibit 16](#)).

Exhibit 16: Proportion of occasions that staff use a computer to obtain clinical information and the ease with which they can find that information



Source: Wales Audit Office survey

45. The extent to which staff working in the Trust are able to rely on the use of a computer to complete clinical tasks is higher than the all-Wales average, with six out of 13 (46 per cent) staff, compared with the all-Wales average of 28 per cent, responding positively. For the Trust specifically, we also asked the extent to which the clinical systems allow them to spend more time on what is important. Only one out of 13 (8 per cent) staff responded positively.
46. Our staff survey also identified that 10 out of 13 (77 per cent) staff reported using applications developed personally in-house to meet needs such as professional college logbooks. This compares with the all-Wales average of 43 per cent. Five out of 10 (50 per cent) of these staff reported using these applications on a daily or weekly basis.

Appendix 1

Audit approach

Our diagnostic review of ICT capacity and resources took place between September 2014 and March 2015. The diagnostic review included all health boards and trusts across Wales with the exception of Powys Teaching Health Board and Welsh Ambulance Services NHS Trust. Details of the audit approach are set out below:

Document review

We requested and analysed a range of health board and trust documents. These documents included the ICT strategy, Board minutes considering ICT development, minutes of ICT steering groups, ICT related policies, ICT system maps and budget positions.

Data capture survey

We asked health boards and trusts to complete a survey providing details of their ICT expenditure, staffing and training. We also asked health boards and trusts to provide details in relation to clinical information systems and the ICT infrastructure. The completed survey for Public Health Wales was submitted on 19 October 2014.

Staff survey

A survey covering a range of issues in relation to ICT was issued to heads of departments working in the clinical departments within Public Health Wales NHS Trust. This differed to the surveys undertaken within the health boards and Velindre NHS trust, which were issued to all medical staff working in ward-based specialties and Band 5 to 7 nursing staff working on wards in the main district general hospitals. The survey for Public Health Wales NHS Trust staff was issued electronically on 1 May 2015. Responses were received from 13 staff in Public Health Wales.

Appendix 2

Scoring principle used to measure commitment to clinical ICT

Aspect of good practice to demonstrate commitment to clinical ICT, with possible responses	Score per response
Does the health board/trust have a documented ICT strategy, which is up to date? A: There is a strategy and evidence that it is supported by staff B: There is a strategy, but no evidence that it is supported by staff C: There is a strategy, but it is out of date D: There is evidence a strategy is being developed E: There is no strategy written/produced post April 2011	2 1.5 1 0.5 0
Has the ICT strategy or new ICT developments been discussed at board level meetings during the last 12 months? A: Yes B: No	2 0
Does the health board/trust have an ICT steering group with a board member? A: Yes B: No C: No ICT steering group	1 0 0
Does the health board/trust's ICT steering group have clinical members? A: Yes B: No C: No ICT steering group	1 0 0
Has the ICT strategy or new ICT developments been on the agenda of executive level meetings during the last 12 months? A: Yes B: No	2 0
Is the ICT lead a member of the Executive Management team (i.e. the team that reports directly to the Chief Executive)? A: Yes B: No, but the ICT lead reports directly to someone on the management team C: No and the ICT lead does not report to someone on the management team	3 1 0
How co-ordinated are IT and Information? A: They are in the same department B: They are managed separately but report to the same director C: They are managed separately and report to different directors	2 1 0

Aspect of good practice to demonstrate commitment to clinical ICT, with possible responses	Score per response
What is the degree of clinical involvement in the trust's ICT programme? A: Clinical champions have been identified and lead the change B: Active clinical support e.g. representation on working groups C: Minimal involvement e.g. some attendance at meetings D: Planned clinical involvement E: None	 3 2 1 1 0
Does the health board/trust have an inventory of its technical infrastructure? A: Yes B: No, but one is currently being collated C: No	 1 0.5 0
Does the health board/trust have a documented ICT benefits management programme? A: Yes, currently in use B: Yes, at earlier stage in the development of the health board's systems C: No, but one is currently being developed D: No	 3 2 1 0
To what extent is the ICT lead involved in Clinical Governance? A: Works jointly on some projects B: Regularly supplies the Clinical Governance department with information C: Attends relevant meetings D: Not involved	 3 2 1 0
Does the trust have a clinical ICT user group? A: Yes B: No	 2 0
Other than any clinical ICT user groups, is there a mechanism for staff to feedback ICT issues, e.g. user-surveys, briefing, intranet page for comments or other opportunities to comment? A: Yes B: No	 2 0

Appendix 3

Free-text comments submitted as part of the staff survey

As part of the staff survey, we asked respondents to provide any free-text comments they had about information technology issues within their organisation. The responses from the staff in the Trust are set out below.

Public Health Wales (or the bit I know in Microbiology/Health Protection) has pioneered some remarkable developments that are unique worldwide - best example for me is DataStore, which I use weekly to help solve clinical and development questions. I would struggle to achieve what I do without it. That said, I also make extensive use of the Groupware databases, albeit I would have preferred us to make greater use of the native Notes platform but the decision was taken against that by the previous NPHS.

Make access easy to use across trusts so log in is truly principality wide

I am fed up of having to see patients with insufficient information. I cannot understand why I have to use pen and paper only to find my records misfiled.

Working on two sites and between health boards has issues. Why can't the whole of Wales use the same IT, as long as it is as good as that in PHS Wales!

We desperately need a lab system that can incorporate scanned and emailed documents and transfer these onwards across interfaces. We also need a clinical system that will perform change/"delta" checking to flag changes over time, or at least enable us to look at all results in a series reliably, quickly and easily. Our current LIMS does neither of these and therefore creates clinical risk and delays. Finally, our LIMS database needs to be more reliable, more widely accessible and more flexible (it's inappropriate to have to request new search dashboards every time a new issue needs to be audited or investigated). I have consistently failed to get access or any feedback on my requests. It also seems very hard to identify who to approach about any one issue and it feels as though we are pushed from pillar to post when trying to solve issues / improve systems. I have noted that NWIS are helpful IF you find the right person but too often, particularly when trying to identify problems with interfaces (e.g. between our LIMS and the clinical portals), no-one will accept responsibility or try to help. This is extremely frustrating! There are also seemingly huge and insurmountable barriers of bureaucracy and forms to go through to make any sort of improvement. I would like structures, hierarchies and responsibilities to be much much clearer, and ideally we need one IT point of contact (perhaps via an online form?) who can then distribute separate queries to the appropriate teams. This would save lots of clinical/scientific time and could improve efficiency enormously.

The support when problems occur is not perfect. There does not seem any appreciation of the urgency needed when a problem hampers delivery of the clinical service - there is always a delay. Any intervention by the IT support never works first time - some functionality always seems to be lost and a second visit is required. The staff providing the IT support are all polite and helpful but do not seem to have a way of checking everything out before leaving.

The registrars have had great problems in trying to get log ins and passwords when starting back in the department with unacceptable delays. The timescale for getting problems sorted via NWIS is often long, sometimes too long to be useful.

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