National Assembly for Wales
Public Accounts Committee

Informatics Systems in NHS Wales

November 2018

The National Assembly for Wales is the democratically elected body that represents the interests of Wales and its people, makes laws for Wales, agrees Welsh taxes and holds the Welsh Government to account.

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About the Committee

The Committee was established on 22 June 2016 to carry out the functions set out in Standing Orders 18.2 and 18.3 and consider any other matter that relates to the economy, efficiency and effectiveness with which resources are employed in the discharge of public functions in Wales.

Committee Chair:

Nick Ramsay AM
Welsh Conservative
Monmouth

Current Committee membership:

Mohammad Asghar AM
Welsh Conservative
South Wales East

Neil Hamilton AM
UKIP Wales
Mid and West Wales

Rhianon Passmore AM
Welsh Labour
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Adam Price AM
Plaid Cymru
Carmarthen East and Dinefwr

Jenny Rathbone AM
Welsh Labour
Cardiff Central

Jack Sargeant AM
Welsh Labour
Alyn and Deeside

The following Members were also members of the Committee during this inquiry:

Vikki Howells AM
Welsh Labour
Cynon Valley

Lee Waters AM
Welsh Labour
Llanelli

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Chair's foreword

In 2003 the iPhone was yet to be invented and Google Gmail and Skype were yet to take off. It was in this same year that the Informing Healthcare strategy was launched, with an electronic patient record for Wales at its heart. The other technological innovations of that year have not only been realised, but leapfrogged several times, and yet NHS Wales remains far away from a seamless electronic portal for patient records.

The fact that NHS Wales still refers to its digital programme as "Informatics" is emblematic of how dated its approach is. The Auditor General's report into Informatics Systems in NHS Wales, and the subsequent Public Accounts Committee hearings, uncovered a raft of problems. Many of their digital projects are behind schedule, and some are only on schedule because their timescales have been reordered to show them on track. Lines of accountability are unclear, there is widespread dissatisfaction across the NHS at its performance, and in the first six months of this year alone its major systems have gone down 21 times. And yet the Chief Executive responsible for hosting NWIS described its ambitions as world leading.

We believe that NWIS is primarily focused on running outdated IT systems. At a time when the potential of digital healthcare is capturing the imagination and improving patient outcomes, just 10% of NWIS activities are focused on innovation.

Our inquiry has raised serious question marks about the competence, capability and capacity across the health system to deliver a digital transformation in Welsh healthcare. And yet we discovered a culture of self-censorship and denial amongst those charged with taking the agenda forward – in NWIS, itself as well as its partners in the health boards and the Welsh Government.

Despite the clear failing to deliver, the Auditor General found NWIS to be "overly positive" in its progress reporting. Despite the Welsh Government and NWIS accepting all of the Auditor General's recommendations, we found little reason to be optimistic that things were changing. We trust our inquiry and this report will be a wake-up call to all those involved in harnessing the power of digital innovation to improve healthcare in Wales. We believe it's time for a reboot.

Recommendations

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Recommendation 2. The Committee was also very concerned by the evidence we heard on system outages, infrastructure and resilience. Given recent evidence of further outages since we took evidence, we would like further assurance from Welsh Government that the systems are resilient. We recommend the Welsh Government set out a clear timetable for putting the digital infrastructure of NHS Wales on a stable footing. ....Page 11

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1. Introduction

1. Informatics systems can help the NHS to deliver better outcomes for patients and make efficient use of financial and human resources. The Welsh Government, NHS Wales Informatics Service (NWIS) and the NHS bodies work together to deliver informatics systems for the NHS. The Auditor General for Wales (the Auditor General) published his report on informatics systems in NHS Wales on 10 January 2018. The report considers whether NHS Wales can achieve the intended benefits from its investment in updated clinical ICT services. The Auditor General's report focussed on six specific systems as indicators of the wider approach to informatics:

- Radiology systems (RADIS and the Picture Archiving Services – PACS);

- Laboratory system (Welsh Laboratory Information Management System (WLIMS);

- Myrddin – the main patient administration system;

- Community Systems – My Health online (GP system for appointments and repeat prescriptions) and Choose Pharmacy.

2. The Auditor General's report concludes that although the vision for an electronic patient record is clear and key elements are in place, there have been significant delays in delivery. There have been some important developments during the period of the review, but there are still some key weaknesses in arrangements to support and oversee delivery and to ensure the systems deliver the intended benefits. The NHS has recently identified that significant additional funding will be required to deliver the vision, but further work is required on the detailed plans and to confirm the funding arrangements.

3. In publishing the report, the Auditor General emphasised that:

"Putting the vision of an electronic patient record into practice means all parts of NHS Wales, including Welsh Government, need to take some tough decisions, particularly on funding, priorities and enabling clinicians to have the time and space to lead on this agenda. Unless it addresses the issues identified in my report, the NHS risks further

frustration amongst frontline staff and ending up with systems that are already outdated by the time they are completed."[1]

4. The Welsh Government has produced a response in which it accepts all 13 recommendations. The Parliamentary review of Health and Social Care published its report on 16 January 2018. The review made a series of recommendations, some of which are relevant to informatics. The key messages of the Parliamentary Review, notably around clarifying strategy, priorities and governance, resonate with those of the Auditor General's report.

5. The Committee agreed to undertake an inquiry into informatics systems in NHS Wales, and to include coverage of the following issues:

- The Welsh Government's leadership role for informatics in NHS Wales, including, for example, ensuring NHS bodes agree what "Once for Wales" means in practice.

- The work the Welsh Government is doing to better understand the costs of delivering its vision for informatics and how that could be funded given the downwards trend in spending on ICT and the £484 million estimate of the cost of delivering the vision for informatics on top of current budgets.

- The extent of resourcing and investment at a local level.

- The effectiveness of governance and accountability arrangements in light of concerns identified by the Auditor General and the recommendations of the Parliamentary Review to bring bodies such as NWIS within a strengthened central NHS Wales Executive function.

- Local leadership, including clinical leadership, and perspectives on the factors behind slow progress in delivering the electronic patient record.

- Workforce challenges, including recruitment and retention of ICT specialists.

- Getting greater clarity about whether the intended benefits of investment are being achieved.

6. The Committee has also identified concerns about the delivery of informatics systems in its work on medicines management. It has also raised concerns about

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[1] Auditor General for Wales Report: NHS Wales Informatics Services, January 2018

the delivery of a National Nutrition and Catering IT Solution (NNCIS) and the Welsh Community Care Information System (WCCIS). The Committee considered further correspondence from the Welsh Government in respect of these two systems on 12 March 2018.

7. During the course of our inquiry, the Auditor General wrote to us regarding concerns about ICT outages at NHS bodies. His letter included a board paper considered by Velindre NHS Trust, highlighting concerns about outages of national informatics systems – CaNISC, the cancer system, and WLIMS. Given the seriousness of the issues, the Committee decided to extend the scope of its inquiry to take further evidence on system outages and infrastructure.

8. This report does not seek to replicate the extensive written and oral evidence we have received and instead sets out the Committee's views on the key issues we considered. Transcripts of all oral evidence sessions and written evidence received can be view in full at:
http://senedd.assembly.wales/mgIssueHistoryHome.aspx?IId=20803

2. Committee's Findings

Overall views

9. Digital transformation requires an open culture, the Committee found that the culture at NWIS was the antithesis of this. We are particularly concerned at the apparent lack of openness and transparency across the whole system. The Auditor General's report identified a pattern of the organisation being "overly positive" in reporting its progress. The Committee's evidence gathering found examples of this again and again. Troublingly this mind-set seems to be consistent with that of the health boards, and the Welsh Government teams working alongside NWIS, as the Committee found a collective reluctance to openly discuss the true state of progress.

10. We found that witnesses were reluctant to be critical of progress or arrangements on the record. Some written evidence from two parts of the NHS was remarkably similar and the Committee was left with the impression that we were getting a pre-prepared line. As a result the Committee could have little confidence in many of the assurances we were given by NWIS and the Welsh Government.

11. If the problems with NHS informatics are to be addressed, then an open and honest reflection on the current state of play and the barriers to progress is essential. Indeed, it is quite possible that this culture has prevented the Committee from hearing a comprehensive range of issues and problems – in short, we remain unsure of the scale of the issues.

12. We are concerned that the NHS is still not fully ready to openly recognise the scale and depth of the problems. The Committee is concerned that this cultural problem may be masking wider and deeper problems which we did not uncover. We believe a fundamental change in behaviour from NWIS and the wider NHS Digital team is required if progress is to be made.

13. Overall, the Committee is deeply concerned about the slow pace of delivery of modern informatics systems across the NHS in Wales and the underlying weaknesses in support and oversight arrangements. It is apparent that nobody is happy with the current state of affairs. NHS bodies are frustrated with the slow-roll-out and problems with systems they have and concerned about confused accountabilities. NWIS is frustrated at the lack of direction from the wider NHS. The greatest frustration is that electronic records lead to better patient care and

outcomes but in too many cases, the NHS relies on outdated, paper based records.

14. The Committee had hoped to see that the pace of change had picked-up, however this was not evident. The Chief Executive of NHS Wales' acceptance of the WAO report was published in March 2018, and in his letter he referred to the 18 months of work undertaken. This suggests that the initial evidence was gathered approx. 2 years ago – September 2016.

15. The Committee recognises that while the Auditor General was undertaking his work, the Welsh Government and the wider NHS were taking steps to begin to address many of the issues. We welcome the positive response to the Auditor General's recommendations. Nonetheless, we remain concerned about the pace and urgency of action as we saw little evidence of change.

16. While welcoming the positive response to the Auditor General's report, the Committee considers our review of informatics to be unfinished business. Given the detailed recommendations of the Auditor General's report and those of the Parliamentary Review of Health and Care, we are not making detailed recommendations of our own to the Welsh Government. Instead we strongly endorse the existing recommendations.

Recommendation 1. We recommend that the Committee receives six monthly updates from the Welsh Government on progress in implementing the digital recommendations in the Parliamentary Review and the Auditor General's report in order to enable us to revisit these issues at a later date.

Recommendation 2. The Committee was also very concerned by the evidence we heard on system outages, infrastructure and resilience. Given recent evidence of further outages since we took evidence, we would like further assurance from Welsh Government that the systems are resilient. We recommend the Welsh Government set out a clear timetable for putting the digital infrastructure of NHS Wales on a stable footing.

17. The Committee heard differences of opinion on the merits of the use of Cloud computing as opposed to data centres. We did not see sufficient evidence of a deep level of Technological or Digital understanding and little evidence that the benefits of Cloud computing are being fully identified neither does there appear to be any grasp of the opportunities presented by the Cloud. We heard no substantial evidence of take-up of Cloud services from NWIS.

Recommendation 3. In the discussions on the use of Cloud computing and the impact of recent outages, it was deeply concerning that, when many consumer systems appear to have very robust performance and up-time, the NHS in Wales is struggling to run its own data centres with 21 outages in the first 6 months of 2018 – one outage every 9 days. The Committee recommends a review of the senior leadership capacity in terms of skillset and governance within both NWIS and the wider NHS Digital Team.

Strategy

18.   The high level vision for NHS Informatics in the areas the Auditor General examined is clear. In essence the NHS will have an electronic patient record that is made up from lots of different systems that talk to each other, rather than one single system that tries to do everything. However, despite some recent developments, there remains a need for greater direction and clarity on the "Once for Wales" approach to developing and rolling out the systems that will go into a patient record.

19.   While the vision is clear, it is now quite old. The vision for the electronic patients record was set as part of the Informing Healthcare strategy in 2003. The world of informatics and digital technology has moved on in the intervening 15 years. We were therefore pleased to see that the Welsh Government in response to the Auditor General's recommendation, will commission a review of its approach to infrastructure and system design as part of the NHS Wales Informatics Management Board (NIMB) forward workplan. This will include developing an understanding of what is currently available on the market and best practice.

20.   It is important that any strategic review considers both aspects of this understanding - market availability and best practice. As we explain below, it may be that the NHS Wales existing reliance on the mixed economy for the provision of NHS software is not the best strategic approach.

21.   The Auditor General reported that the NHS had agreed a new definition of "Once for Wales". However, we are unconvinced that the definition has resolved the underlying tensions and differences. We heard mixed evidence on whether there was now a clear agreement and common understanding on the balance between all-Wales systems and local discretion based on common standards. Some witnesses placed an emphasis on common standards whereas others focussed on the need for more mandated systems across Wales. It was unclear to us whether the tensions between the two have been resolved. Evidence from Health Boards reflected a keenness for commons standards while NWIS were

more focussed on rolling out single systems across Wales. We therefore think that there is more work for the Welsh Government and NHS bodies to do in order to fully address the Auditor General's recommendations around clarifying what "Once for Wales" means in practice.

22. The Committee heard a lot of evidence about a lack of clear strategic prioritisation. The Auditor General's recommendations called for clearer prioritisation. This call was echoed in the Parliamentary Review, which called for a "stop-start-accelerate" review on informatics.

23. All of the witnesses appeared to recognise that NWIS was being asked to do too much within its current resources and needed clearer priorities. We were pleased to hear from witnesses that the National Informatics Management Board (NIMB) is now having a strengthened focus on prioritisation in a national informatics plan for 2018 – 19. We were also told that prioritisation would be a key feature of a three-year plan from 2019 – 20. However, we are concerned that while there is much focus on the need for clearer priorities on ICT systems there is also discussion about the introduction of new systems, for example around GP access. Generally, the witnesses struggled to set out things that NWIS should stop doing.

24. While welcoming the steps in the right direction through the NIMB, we are unconvinced that the NHS as a whole, including the Welsh Government, has yet fully grasped the need for tough decisions on priorities. The NHS must face up to the reality that, in the absence of a significant change in the funding for NHS informatics, prioritisation must mean stopping doing things. That may help NWIS to get some projects over the line, as the Chief Executive of the NHS described it. But prioritisation inevitably means non-priority projects getting delayed or not even getting started. Prioritisation is not a silver bullet and still means it could take many more years for an electronic patient record to be put in place.

25. Our key concern is that without a step-change, by the time a full electronic patient record is achieved, key systems will be out of date. During our evidence sessions, Members discussed how technology is moving on, for example, with private companies offering online access to GPs within 20 minutes on mobile devices for a relatively small fee. Conversely, as the Auditor General makes clear, the NHS Wales GP application, My Health Online, is not delivering anything like the benefits it set out to achieve. While there are discussions about improving My Health Online, it is hard to see how these will be achieved in a reasonable timeframe without adding to an already full priority list.

Finances

26. In his evidence, the Chief Executive of NHS Wales recognised that finance is a significant constraining factor. The Auditor General's report suggests that spending on ICT across the NHS had been falling – with reductions in NWIS' core budget and spending on ICT by individual NHS bodies. The Auditor General estimated that the NHS as whole spends less than 2% of its budget on ICT. Within NWIS' budgets, a small proportion (10%) of its budget is for developing new systems.

27. It was clear from the evidence that some difficult decisions are required in terms of whether and how to provide the significant extra funding that is needed to deliver the vision and work with the NHS to strengthen collective financial planning for informatics. We know that the cost of delivering the vision in each NHS body and NWIS' contribution to National systems is tentatively estimated at £484 million on top of existing budgets, with £195 million capital and £288 million revenue. Of this £484 million, £196 million is identified as needed by NWIS, with the rest required by Health Boards and NHS Trusts. The Welsh Government accepted the Auditor General's recommendation to carry out a full cost-benefit analysis of the investment. This is tied to wider reviews of the overall approach to infrastructure and system design and prioritisation.

28. The Auditor General's report states that there is a clear strategy for Welsh Government Electronic Patient Record, the development of separate systems from a number of suppliers. Whilst this was an understandable approach a decade ago (when the programme was begun) there are two factors which the Committee is very concerned about:

a. Software development has enjoyed huge positive changes over the past 10 years – the processes and tools for building software are now significantly advanced.

b. As the NHS becomes increasingly dependent on its digital technology, this cannot in turn become a dependency on the private sector. Building our own systems can be a better solution than simply buying them in via large procurement execrcises.

29. The Welsh Government has not yet committed to providing significant extra funding and given this estimate was produced in 2016 there appears to be a lack of urgency making a decision to do so. There is a need for clarity from Welsh Government as to whether the tentative estimate is in the right ballpark, and the witnesses we asked thought it was, and whether significant resources will be set

aside and over what time frame. We heard positive comments about the £10 million in capital provided by the Welsh Government for NHS ICT in 2017-18. Yet the estimate shows that far more than this amount a year will be required. We heard ideas about using pots of innovation funding and the Integrated Care Fund. We are concerned that this appears to be dealing at the margins when a much more fundamental decision about setting aside significant amounts of funding, or a fundamental re-think on the ambition and timings, now needs to be made. Given that many of NWIS projects are either behind schedule, or are operating to revised schedules, the Welsh Government must consider whether it can have confidence in the competence and capability of NWIS as currently constituted.

> **Recommendation 4.** NWIS is currently overstretched and improvement requires far more than simply pouring more money into the existing organisation, which is unlikely to achieve significantly different results. We recommend that any additional funding apportioned to NWIS needs to be tied to reorganisation to achieve the improvements that are required.

30.   We reiterate the point made earlier that without significant additional resources, we do not think that an electronic patient record can be rolled-out in a reasonable timeframe. By additional resources, we do not necessarily mean new money for the NHS that would otherwise go to other public services. A key rationale for the electronic patient record is that it makes services more efficient and reduces mistakes, which are costly to put right. The NHS as a whole needs to take a longer-term, collective view of investment in informatics, on an invest-to-save basis.

31.   We believe that Welsh Government should be very open-minded when looking at the funding options for NWIS. It is clear that there needs to be a shift away from CapEx towards more revenue-funding. Also, we have the view that Digital / IT is still seen as a cost-centre, rather than an opportunity to improve patient care and experience, and reduce the overall Administration and Clerical budgets.

Governance and leadership

32.   The weaknesses in NWIS' governance arrangements, including a lack of independent scrutiny and unbalanced reporting of progress, are of significant concern to us. The Committee started this inquiry confused about the governance arrangements for NWIS and ended it still unsure as to how they work. There is a complex arrangement whereby Velindre NHS Trust hosts NWIS and is accountable for certain aspects of its activity. But NWIS is accountable to Welsh Government for its performance and delivery of informatics services.

33.   It is clear that these arrangements cause confusion in practice, notably where there are major incidents with a system. It is clear from the evidence that senior NHS executives are not sure who is accountable for NWIS nor how they are held to account. While several spoke of the NIMB, we understand that the main role of NIMB is to show collective leadership rather than specifically scrutinise and how NWIS to account. Despite their evident dissatisfaction about progress we saw no evidence that health board executives are scrutinising the work of NWIS (indeed there was confusion amongst them about how they would do this). NIMB covers roll-out of new ICT systems, which is only a small proportion of what NWIS does. We consider that a simpler and more transparent arrangement is required.

34.   Witnesses seemed reluctant to defend or criticise the governance arrangements for NWIS. There was nonetheless acknowledgement of a need for change. The Committee welcomes the commitment to reviewing and updating NWIS' governance arrangements in response to the Auditor General's recommendations and the Parliamentary Review of Health and Care. The Committee awaits with interest further details on what the new arrangements will be and how they will work. We agree wholeheartedly with the Auditor General that they should ensure a greater degree of transparency and independent scrutiny than occurs at present. We anticipate that any new, thorough Governance, may in the short term serve to uncover more problems than it fixes.

35.   On the subject of transparency, we agree that any new arrangements need to ensure balanced reporting of progress in the delivery of informatics systems. The Auditor General concluded that NWIS reporting was not balanced and was overly-positive. We agree and at times during the evidence, we heard a similar unbalanced picture. We were told Wales was "world class" and ahead of other parts of the UK. We were given lists of achievements without context. Of course, we understand the desire and need to celebrate successes and achievements. But at times, some of the evidence felt completely at odds to the picture painted by the Auditor General and also did not chime with what Committee members regularly hear from NHS staff.

36.   There is considerable confusion around leadership of informatics in Wales with multiple individuals described in our evidence as having leadership roles and responsibilities. There are senior officials in Welsh Government with leadership roles. There is an NHS Wales Chief Information Officer and NHS Wales Chief Clinical Information Officer. There is also a lead Chief Executive for ICT, who is the Chief Executive of Velindre NHS Trust, which hosts NWIS. In his evidence to us, the Chief Executive of NHS Wales recognised that there is scope for confusion.

37.   We also think that there is scope to strengthen the capacity of Welsh Government and NHS bodies to direct, challenge and act as an intelligent client to NWIS. We were not convinced that the senior Welsh Government officials and top NHS executives have the detailed technical understanding needed to give NWIS a clear direction and challenge its performance and decisions.

38.   In clarifying national leadership we would endorse the Auditor General's view that Welsh Government needs to ensure that the roles of NHS Wales Chief Information Officer and NHS Wales Chief Clinical Information Officer have sufficient authority and prominence, given that they are currently located in a hosting agency that does not fit into the overall NHS Leadership structure.

39.   We are also concerned about leadership at board level and agree with the Auditor General's findings that there is scope to strengthen this. We note that NHS Wales lags behind the private sector in having informatics and ICT expertise represented at Board level. The Welsh Government accepted the Auditor General's recommendation and is considering the merits of board representation as it responds to consultation on its "Services Fit For the Future" White Paper. We were disappointed with the reluctance of health boards to consider the need for greater representation of informatics expertise at board level. We understand the point made by the Chief Executive of the NHS, that other areas can make a case for greater representation at board level and there is a risk that adding more people leads to an unwieldy board. However, informatics is so fundamental to the future of healthcare that we consider the case for stronger board representation to now be compelling.

40.   Leadership in Digital / IT will always be a challenge, given the complexity of the subject and the rapid pace of change. Even high-performing organisations will struggle to compete for the best leadership. Across NWIS and Welsh Government, we believe there is a clear need for improvement in Leadership. We would encourage Welsh Government to consider adding between 5 and 10 new, senior leaders into NWIS, possibly on a medium-term basis. Only this level of leadership change is likely to resolve the cultural issues

Delivering new systems

41.   During our inquiry, the Welsh Government agreed to adopt the Government Digital Service design principles under a new Welsh technical standards board. The standards adopted by the Welsh Government are based on the principles of the Agile approach to developing digital services. The Auditor General's report notes that there are potential benefits to this approach, which involves a strong focus on user needs and a more iterative, step-by-step approach to developing

applications. However, we share the concerns of both the Welsh Government and Auditor General that wider changes are needed to make this approach work.

42. The Welsh Government told us of its concerns that the approach to business cases, using the 5 case model, may be too rigid as it involves specifying everything up front. This would indeed seem to run counter to an iterative approach. The Committee welcomes the work the Welsh Government is carrying out, alongside colleagues in the NHS in England and with the Treasury in London, with regard to how the Welsh Government adapts its business case process to allow it to take full advantage of the digital approach and agile approach to developments.

43. The Agile approach also depends fundamentally on the engagement of the users of systems, in the case of NHS systems this is usually clinicians. The Auditor General reported that NWIS' staff are frustrated at the difficulties they experience in getting clinicians to engage with the design and testing of systems. The Committee notes the recent development of a network of Chief Clinical Information Officers across the NHS. We hope that this will provide the clinical leadership that the informatics agenda urgently needs.

44. However, leadership should not fall to a small group of interested clinicians. There is a bigger challenge around engaging clinicians on the opportunities and importance of getting involved in work to develop and test systems. There is also a clear need for NHS bodies to find ways of freeing up clinical time, so that clinicians can do this important work without feeling like they are neglecting the day-job.

45. The Auditor General's report raises concerns about NWIS' workforce planning and highlights some of the difficulties NWIS has recruiting and retaining experienced ICT developers. NWIS reported that it has now developed a workforce strategy and was managing recruitment difficulties by working closely with education institutions. However, we remain concerned about gaps in NWIS' capacity and capabilities to deliver. When we asked the Chief Executive of NHS Wales whether there was an issue with NWIS competence his answer gave us only limited assurance that he has confidence in NWIS' capabilities.

46. We have some sympathy for NWIS in the question of recruitment given they are operating within the constraints of the NHS Wales pay scales and cannot use financial incentives to attract digital staff. There is significant demand for skilled technical staff, a situation we do not expect to change for some time. Other work of the Committee and Assembly has highlighted this across the private sector. However, we are aware that some of the other Public Sector bodies in South Wales seem to have a far more successful approach. For example, anecdotally we

understand that the DVLA and ONS, who both employ large teams of Digital / IT staff have been proactive in their recruitment campaigns in attracting candidates to digital roles. In other areas of this report we highlight the long-standing cultural issues within NWIS. We are concerned that the difficulties in hiring staff may, in part, be linked to these deep-seated cultural problems.

47. It is not credible to assume that the reputational damage arising from recent criticism of NWIS has not impacted the attractiveness of NWIS as an employer in a market for technical skills which will always be very competitive. The Committee believes that a more radical solution be considered. A lot of the work of NWIS is not NHS-specific (This includes cyber security, Cloud computing and software development processes), much of this is undertaken across all of the public services in Wales, especially South Wales which we believe already has well regarded Digital functions such as those at the DVLA and ONS.

> **Recommendation 5.** We recommend that NWIS look to increase its work with other public bodies, including those from UK Government. This approach could work on a number of levels, from the sharing of good practice on recruitment to the creation of Government Digital Service which could work across multiple agencies.

48. We are concerned about the quality of some key national systems and with a lack of monitoring data it is unclear whether they are delivering the intended benefits. We note that the witnesses report that NWIS is now providing a more balanced picture in its reporting to the NIMB, including more context on the actual use and roll-out of systems. The Committee looks forward to seeing some balanced reporting on the benefits in the public domain.

49. The Auditor General highlighted concerns about the quality of management information being produced by the national systems. Senior NHS officials who had experience of working in England were keen to emphasise that they had access to better information, generally in the form of a "dashboard", than was available in Wales. NWIS told us that the issues vary from system to system but there is ongoing work to improve the management information and develop standard reports. However, NWIS also said that there is a gap across the NHS in terms of the skills needed to generate useful management information reports. Without honest reporting it will prove impossible improve governance and indeed overall performance.

Data outages and resilience

50. The Committee is deeply concerned about the evidence it received about data outages and resilience. There have been 21 outages of national systems between January and July 2018. We were particularly concerned to hear from Velindre NHS Trust of the negative impacts on patient experience and on staff morale. The Welsh Government and Velindre NHS Trust witnesses assured us that no patients had come to harm. We queried how it was known that these incidents had not caused harm especially in relation to cancer patients where timeliness of decisions and interventions can be essential. The Chief Executive of the NHS explained that there was a need for more work to be done to ensure impact on patients was more fully understood and captured.

51. We heard that NWIS and Welsh Government recognise the concerns of NHS bodies and clinicians and is taking action to put things right. We heard that some of infrastructure in the NHS' data centres was over seven years old and needed replacement. NWIS reported that it had been working on replacing this infrastructure over the past two years. In addition, Welsh Government provided funding of £1.32 million to upgrade the WLIMS infrastructure and the data storage was upgraded, replacing hardware which is over seven years old. In the meantime Cloud infrastructure is being routinely adopted elsewhere and NHS Wales is falling behind. In a letter dated 29 August 2018, the Director of NWIS wrote to the Committee stating that the costs of upgrading the infrastructure would be £5.5 and £6m. We are concerned that any investment of this kind could be seen as throwing good money after bad, when the alternative is to switch existing system to a modern Cloud infrastructure.

52. We also received evidence from unpublished NWIS reports, that NWIS needed a greater focus on undertaking routine maintenance. The evidence suggests that this will be expensive in resources and will negatively impact on the delivery of new projects. We are concerned that NWIS is having to strike an impossible balance between maintaining infrastructure and delivering new systems. It is a no-win scenario with either more delays to much needed new systems or risks of serious incidents and outages. This is essentially robbing Peter to pay Paul and not an acceptable or sustainable position.

53. We struggle to understand how NWIS finds itself in this position where it has not made appropriate plans for suitable maintenance of its infrastructure. It is symptomatic of a wider concern that the Committee has during this work – as we begin scrutinising one area, we find that other, equally serious question arise

elsewhere. As a consequence we are anxious that our scrutiny has merely scratched the surface of NWIS' problems.

54. The Committee heard that NHS bodies were able to put their business continuity plans in place, which limited the impacts of the outages. However, there were some weaknesses in the way NHS bodies, Welsh Government and NWIS communicated during data outages. The Committee was pleased to note that there is an identified example of good practice, with Abertawe Bro Morgannwg UHB's use of the Joint Emergency Services Interoperability Principles (JESIP). The Welsh Government's recent letter to the Committee sets out that the principles should be shared among others asking that they consider them for use within their organisations to support business continuity.

55. The Committee was alarmed by some of the evidence it heard in relation to the cancer system. We were told CaNISC has a red risk rating because Microsoft stopped providing support for the system in 2014. Witnesses flagged concerns that it is a cyber-security risk as there is additional work to plug security holes and apply "patches". It is positive that the process is in train for replacing CaNISC. But the Committee is concerned that it has taken so long to reach the stage of having a business case, when it must have been clear long ago that it needed replacing.

56. The Committee would like to see CANISC replaced urgently and as soon as is practicably possible. Given the red risk rating and the cybersecurity issues, there is a compelling argument for accelerating the work if possible. However, the Committee recognises that this would require careful consideration of the knock-on consequences.

57. In many ways the evidence we received on service outages and resilience was a microcosm of the wider picture. Funding is stretched, with NWIS balancing the competing priorities of sustaining infrastructure while under pressure to deliver new systems. There are deep concerns about the lack of clarity around accountability and responsibility when things go wrong and putting things right again. We heard of delays in NWIS, in this case in producing reports on the incidents. We also heard of difficulties in sometimes getting NHS bodies to engage with NIWS in identifying the causes of problems. We remain concerned that the issues around system outages have not yet been fully resolved. Recent correspondence from Cardiff and Vale University Health Board reported that there had been a further incident in August 2018, lasting 3 days.