



WALES AUDIT OFFICE

SWYDDFA ARCHWILIO CYMRU

Review of Management Arrangements within the Microbiology Division

Public Health Wales NHS Trust

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Status of report

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The team who delivered the work comprised Phil Jones, Malcolm Latham, Mandy Townsend and Gabrielle Smith.

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Summary report

Summary

1. Microbiology services have a major role to play in the delivery of clinical services for patients, as well as the wider protection of public health. GPs and hospital doctors rely on accurate and reliable information from microbiology services to help them diagnose, treat and prevent the spread of infections.
2. The Microbiology Service of the Public Health Wales NHS Trust (the Trust) provides clinical and scientific support that underpins communicable disease diagnosis and management, including:
 - laboratory diagnostic services to hospitals and general practitioners;
 - leadership of hospital infection control programmes;
 - involvement in regional and national surveillance programmes; and
 - assistance to health protection teams in relation to outbreaks and community infection control.
3. In addition to these general functions, the Microbiology Service provides all-Wales and UK specialist reference facilities.
4. The Trust provides the majority of microbiology services in Wales and microbiology services account for a fifth of the Trust's budget. Microbiology services are currently delivered by 324 staff deployed across seven laboratories operating on nine sites¹ across Wales. Services at the Wrexham Maelor recently transferred to the Trust in October 2013 and plans are underway for the transfer of microbiology services from Withybush Hospital in 2014.
5. We last reviewed microbiology services in 2007. At that time, we found that arrangements for monitoring quality could be strengthened, service efficiency could be improved and that there was a lack of consistent and standardised processes. More recent work by the Trust has identified a number of issues that are having an impact on service delivery, in particular increasing demand and limited capacity to respond to requirements for seven-day working, to respond to emergencies or deliver specialist services.
6. As part of our programme of audit work at the Trust, we carried out a review of microbiology services. Our review sought to answer the question: 'Are management arrangements within the Microbiology Service Division effective?'
7. We concluded that the Trust has a clear vision for microbiology services but current arrangements and structures are not yet sufficiently robust to support its delivery.
8. We reached this conclusion because:
 - although the Trust has had a clear vision for microbiology services for some time, it is only recently that detailed plans have been developed to take this forward;

¹ These hospitals sites are in: Aberystwyth, Bangor, Wrexham, Cardiff (UHW and Llandough), Carmarthen, Llanelli, Rhyl, Bridgend and Swansea.

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- the microbiology laboratories are not organised as a single service and the current arrangements are not supporting the necessary service change; and
 - the arrangements for monitoring performance and service delivery are poorly developed.

Recommendations

- R1 There is no common agreement on the structure of the service beyond the managed network, which impacts on the way services are delivered locally. The Trust should:
- come to a quick decision on the structure of the service, for example, regional hub and spoke models or retaining the existing confederation structure; and
 - clarify and standardise the clinical service model delivered to health boards and where this fits within wider public health responsibilities.
- R2 There is a lack of clarity about the purpose of the operational management group and senior management team. The Trust should:
- align the management structures with the reconfiguration model;
 - clearly set out the role of the operational management group;
 - establish a fit-for-purpose senior management team with clear terms of reference to manage the strategic direction of the service, provide clinical leadership and deliver effective governance; and
 - strengthen and clarify the general and business management support needed for the Division.
- R3 Key priorities for action have been identified to deliver the Trust's vision for microbiology services over the next three years.
- The Division and Board will need to introduce robust monitoring arrangements to ensure these actions are delivered and this vision is achieved.
- R4 The Division should ensure that medical microbiologist job planning and performance and development reviews for biomedical staff are used to support the direction of travel.
- R5 The risks set out in the divisional risk register are not clearly linked to the Division's objectives and some incidents are incorrectly identified as risks. The Division should:
- ensure that staff responsible for compiling individual laboratory risk registers and the divisional risk register have access to appropriate training or support;
 - strengthen the arrangements for identifying the risks to achieving its objectives; and
 - ensure that there is effective oversight of the divisional risk register by the senior management team.
- R6 There has been little progress over the last 18 months in developing a performance framework for microbiology services.
- The Trust should move to quickly conclude its work on defining performance measures and standardising the pricing structure.

Detailed report

Although the Trust has had a clear vision for microbiology services for some time, it is only recently that detailed plans have been developed to take this forward

9. The Trust's vision for the direction of travel has been clearly articulated over the last three years. In 2010, the Trust published its five-year strategy, which set out seven high level objectives. One of the objectives is 'to protect people from infectious disease and environmental hazards' and is of direct relevance to microbiology services. This was followed in 2011 by the Public Health Strategic Framework, which set out the priority for the reconfiguration of microbiology services to improve quality and efficiency given the changing clinical requirements and technology. As well as reconfiguration, microbiology laboratories were expected to move to seven-day working, to standardise procedures across laboratories and to benchmark services.
10. Progress in reconfiguring services has been patchy. While objectives are clear and service redesign reviews for microbiology services began in 2011, a formal delivery plan to respond to these strategies was only developed in 2012. This is due in part to the delays in key appointments within the Division at the time the strategies were first published, which also prevented wider 'buy-in' from staff.
11. Work to bring the Wrexham Maelor laboratory into the Trust's laboratory network concluded in autumn 2013. The approach should provide a template to enable the Trust to bring other laboratories into the network and to conclude the review of services operating at Abertawe Bro Morgannwg University Health Board. Our interviews identified on-going delays in relation to taking forward recommendations to consolidate services on one site to help improve coverage and extend seven-day working. More generally, staff that we spoke to were unclear what the impact of reconfiguring services would mean for them with several staff reporting that reconfiguration meant a single site somewhere along the M4 corridor.
12. The Trust's 'Have Your Say' workshops in autumn 2012 found that staff wanted clearer links between organisational priorities and their own work so that they could see how they contribute to the delivery. Our interviews with laboratory staff indicate that they are unaware of the priorities that had been set out in the Public Health Strategic Framework despite delivering some of the priorities, including the move to seven-day working and the new out-of-hours arrangements.
13. The Trust's five-year strategy has recently been updated and the number of objectives (commitments) streamlined, which should also provide clearer links for staff. The high level objective remains broadly unchanged, that is 'to protect the public from infectious and environmental hazards'.

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- 14.** The Trust has implemented a new planning framework, which should provide the vehicle to deliver the necessary changes to the Microbiology Service. Currently a three-year plan is being developed to deliver the strategic objective 'to protect the public from infectious and environmental hazards'. This plan sets out three key priorities for action. These are:
- improve patient access to modern infection diagnostics and management, through the establishment of an all-Wales managed microbiology service network and service redesign;
 - establish our strategic leadership of healthcare associated infections and antimicrobial use, with an appropriate balance of effort directed at infections in the community and hospital settings; and
 - set out a clear vision for the adoption of genomic sequencing in public health with a focus on infectious diseases by engaging our strategic partners.
- 15.** Responsibility for delivery and timescales are clearly set out. Each priority is underpinned by a set of specific actions to be taken forward each year for the next three years to achieve agreed outcomes.
- 16.** Although priorities are clearer and owned by the Division, there is no common agreement on the structure of the service beyond the managed network, for example, regionalisation of services and hub and spoke provision. Without this agreement on the service model the Division will not be able to put in place an operational plan to deliver the strategic objective and necessary service reconfiguration. This operational plan will eventually integrate service, finance and workforce elements but at the time of our fieldwork, these elements had yet to be identified.
- 17.** These plans will need to capture the workforce and related support requirements needed to effectively deliver the priorities, particularly in relation to staff skills, availability and new ways of working. Current workforce information shows that the workforce is ageing with one quarter of microbiology staff likely to retire in the next 10 years. One-third of the microbiology laboratory staff are deployed as support workers, which varies from 26 per cent in Aberystwyth to 40 per cent in Rhyl. The current budget setting process for each laboratory has been based on the outturn from the previous year with an expectation that each laboratory will contribute to cost improvement savings. The financial implications for delivering the priorities will need to inform the future budget setting process.
- 18.** Once the operational plan has been developed, and to ensure a much faster pace of delivery, the Division and Board will need to introduce robust monitoring arrangements.

The microbiology laboratories are not organised as a single service and the current arrangements are not supporting the necessary service change

Divisional structures

19. The current network of local microbiology laboratories is fully accredited with the CPA. The network was the second to be accredited in the UK. There is no evidence to suggest that high quality diagnostic services are not being delivered. Our interviews highlighted that microbiology staff, both medical microbiologists and biomedical scientists, are committed to delivering the highest quality services possible.
20. There is still confusion amongst staff about where the Trust's network of microbiology services sit in relation to the wider pathology modernisation programme. This is inevitable because of the interface with the wider South East Wales Pathology Collaborative and the South Wales Programme on the future of hospital services in south Wales. To overcome this, work on developing a project framework has been started by the Trust to take forward modernisation and reconfiguration of microbiology services across Wales. This work recognises the need to describe the laboratory service and the clinical service as two distinct aspects.
21. Each laboratory has its own line management structure and within laboratories the accountability and responsibility are clear. At a local level these arrangements are clear. At a service and Trust level, lines of accountability between the laboratory managers, the operational management group (OMG), the senior management team (SMT) and the divisional management team and the Executive Director for Public Health Services are less clear. This arrangement is not providing the necessary vehicle to drive change and service reconfiguration forward.
22. A particular concern was the operation of the OMG and SMT where membership overlaps significantly. While service managers identified the importance of this group in addressing common operational issues, there were no terms of reference setting out the scope and role of this group and its reporting arrangements to SMT. In turn the purpose of SMT was not clear and it operated more as an information sharing forum rather than providing strategic leadership and governance.
23. To overcome this the Trust will need to:
 - align the management structures with the reconfiguration model;
 - clearly set out the role of the OMG; and
 - establish a fit for purpose SMT with clear terms of reference to manage the strategic direction of the service, provide clinical leadership and deliver effective governance.

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24. Laboratory managers were also not clear about the role of the general manager and how this role provided additional capacity to the management team. Within the structure there is a clear need for this overarching role and more clarity is needed on how this role operates within strategic and operational delivery of services.
 25. Recent staff changes within the senior management team over the last six months provide an opportunity to reassess the role of senior managers and the divisional management structure in terms of general management and clinical leadership.
 26. This lack of strategic leadership is evident from the comments made by some staff that we met as part of fieldwork, including:
 - a view from one medical microbiologist that the lines of professional accountability lie outside the Trust and not with the Divisional Director for Microbiology Services or the Medical Director;
 - perceptions that there are few, if any, mechanisms in place to compel laboratories to modernise; and
 - insufficient progress on developing common procurement arrangements and common diagnostic tests and analyser platforms.
 27. Interviews with staff also indicated some positive benefits of the current network arrangements that the Trust needs to retain and further develop. These include:
 - standardising the arrangements for quality assurance and health and safety;
 - sharing the workload when evaluating new diagnostic consumables or products; and
 - standardising laboratory procedures and processes which enable staff to move seamlessly between laboratories.

Clinical services

28. There is variation in the way in which the delivery of core services is provided across the different health boards. There are unexplained differences in the time given by medical microbiologists to direct clinical care services provided to health boards, such as specialist advice on antimicrobial use, Infection Prevention and Control support and advice, and management and advice to support local multidisciplinary infection control. In some laboratories there is a high level of clinical input from the medical microbiologist in the day-to-day laboratory work and in others it is reported that there is hardly any input. We were told that in some laboratories, biomedical scientists with the appropriate skills and experience take responsibility for reading and reporting test results. This was seen as one way of ensuring that medical microbiologists could spend more time on direct patient care. We found one clinical model that appears to be working well: medical microbiologists in west Wales are external facing and carry out weekly ward rounds across all hospital sites in close co-ordination with the infection control team at Hywel Dda Health Board.

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29. Interviews with staff also highlighted concerns about where microbiology services fitted within the Trust's broader health protection responsibilities. These are important parts of service delivery, which need greater clarity. The Trust needs to decide how it will provide clinical services to health boards and for its surveillance and outbreak control.
 30. Underlying structures to support service delivery and service redesign, such as job planning, are poorly developed. Although job planning is undertaken, we were told that there was little guidance to support the process and job planning was not connected to the business planning aspects of the service. Interviews with staff did not indicate that job planning was supporting service change. This needs to be addressed quickly.
 31. Since April 2013, managers have been expected to complete performance reviews with staff ie, appraisals, via the electronic staff record (ESR), which has been rolled out to all laboratories. Staff told us that ESR is used to routinely record sickness absence and holiday leave only. Interviews with laboratory staff indicate that not all staff have had an appraisal in the last 12 months. Local quality assurance audits also show low numbers of appraisals are being completed. We were told that the numbers of appraisals being completed would increase in time for the next cycle of CPA accreditation. The Professional and Organisational Development team recently provided training on the appraisal process in particular linking personal objectives with organisational objectives. This should go some way towards raising staff knowledge about organisational and divisional objectives.
 32. Figures from the most recent report² on compliance with statutory and mandatory training show that compliance within the Division is generally poor. Records of training are largely paper-based and held within individual laboratories making it difficult to know whether it is simply a case of underreporting. The process of transferring these records into the Oracle Learning Management system is underway in some laboratories. However, interviews with laboratory staff indicate that some staff are unsure what statutory and mandatory training they need to attend. Staff asked auditors if Equality and Diversity Training was mandatory.
 33. The arrangements for the delivery of statutory and mandatory training are also unclear. Staff located in laboratories outside Cardiff reported that it was often difficult to attend training events if these were not provided locally. These staff reported that they would attend training provided by the health board in which the laboratory is based, such as fire training. Managers reported that this training is free because currently there are no formal agreements with health boards for the provision of training. The Trust relies on staff attending training that is appropriate and recording attendance accordingly. The introduction of the UK Core Skills Framework is seen as helping to make it easier in the future to share statutory and mandatory training between NHS bodies.
 34. Occupational health requirements have not been clearly articulated and there is inconsistency between the laboratories on how these are applied, which may account for the concerns raised about possible poor compliance with workplace immunisations.

² Report to the meeting of the October 2013 Quality and Safety Committee.

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- 35.** Currently, the Trust has service level agreements (SLAs) with two health boards (Cardiff and Vale and Betsi Cadwaladr) for the provision of occupational health services. Occupational services for laboratories in other health boards are provided on a fee-per-visit basis. Laboratory managers seem unaware that in the absence of an SLA the Trust is still charged, with some managers describing these services as 'free'.

The arrangements for monitoring performance and service delivery are poorly developed

Quality assurance

- 36.** A Quality Manual sets out the system in operation across the microbiology service to maintain and improve quality and health and safety. The Quality Manual is organised in the same way as the Clinical Pathology Accreditation (CPA) standards and it is underpinned by a number of quality documents and standard operating procedures for the diagnostic service. From 2016, the Trust's microbiology laboratories will be assessed against the internationally recognised standard ISO 15189³ and work is now underway to ensure that any changes to the quality management system comply with these requirements.
- 37.** The Quality Manual also sets out the approach to internal and external quality assurance. It includes feedback from service users, compliance against CPA standards and participation in external quality assessment schemes and internal quality control assessments. A schedule of quality management system audits and health and safety audits is maintained and delivered across laboratories with local findings reviewed at local laboratory and quality and health and safety network meetings. The findings are also reported to both the OMG and SMT.

Risk registers

- 38.** Our review of the Division's Risk Register found that the approach to identifying and managing the broader risks associated with delivering Divisional objectives needs to be strengthened. In July 2013, five risks were identified on the Risk Register with all five risks added to the Risk Register more than 12 months ago. However, there has been little apparent movement in risk rating over that time. Furthermore, the risks are not clearly linked to the Division's annual work plan for 2012-15 and do not mirror the risks highlighted at the time of the Division's mid-year review in May 2013.
- 39.** For some risks highlighted on the risk register, it may have been more appropriate to identify the risk as an incident or near miss, such as the issues with autoclave maintenance or the inappropriate handling of blood cultures, which was subsequently recorded as an incident. The Risk Register is also incomplete with planned actions to mitigate risks missing, for example, the need to review the arrangements for autoclave

³ ISO 15189:2012, Medical Laboratories – particular requirements for quality and competence.

maintenance across all laboratories. A report to the Quality and Safety Committee in October 2013 made it clear that this review was underway.

Performance information

40. The lack of information to monitor performance of microbiology services has been recognised as a weakness for some time but insufficient progress has been made in addressing the weakness. Recent reports to the Board in relation to microbiology services have been limited to monitoring progress towards the reconfiguration of services.
41. Work on developing a performance dashboard for microbiology services was first discussed by the Quality and Safety Committee in early 2012 and work is now underway to define appropriate performance and quality and safety measures, as well as map the available information needed to construct the measures. The Trust anticipates that by February 2014, a more robust performance reporting framework will be in place for the service.
42. There is little evidence that the comparative performance of individual laboratories is monitored at the operational management group and senior management team, with the exception of complaints, incidents and expenditure. Interviews with staff indicate that there have been no drivers to benchmark the service but they would welcome it as it would allow them to assess demand and productivity. The Division could make more use of the information that is routinely captured as part of its day-to-day operations. For example, SLAs for the provision of microbiology services to health boards are regularly monitored in relation to the volume of activity but the information is not used to compare workload across laboratories. In 2012-13, approximately 1.4 million diagnostic tests were undertaken with the biggest volumes of samples handled by the laboratories in Cardiff and Swansea.
43. A schedule of regular audits is undertaken in relation to the quality management system, such as ongoing compliance with the CPA standards, compliance with the turnaround times for different diagnostic tests or compliance with internal and external quality assurance schemes. However, the outputs from these audits or the data on turnaround times are not used to monitor performance between laboratories or to demonstrate the quality and safety of microbiology services outside the Division. If the information is to be presented to the Quality and Safety Committee or to the Board, the Division will need to consider how the information can be presented, to ensure that the reader can interpret it easily and understand why it is important and what actions are being taken to improve performance.
44. Information on the comparative costs of diagnostic tests and service delivery between the laboratories is not well developed, which makes it difficult to assess the financial efficiency of the service, the impact of strategy and developments and where improvements can be made. Work is underway to standardise the pricing structure used to charge for the different diagnostic tests to take into account the cost of staff and consumables. This will help support a more cost effective service by ensuring that costs are adjusted in line with inflation or take account of changing technology.



WALES AUDIT OFFICE

SWYDDFA ARCHWILIO CYMRU

Wales Audit Office
24 Cathedral Road
Cardiff CF11 9LJ

Swyddfa Archwilio Cymru
24 Heol y Gadeirlan
Caerdydd CF11 9LJ

Tel: 029 2032 0500

Ffôn: 029 2032 0500

Fax: 029 2032 0600

Ffacs: 029 2032 0600

Textphone: 029 2032 0660

Ffôn Testun: 029 2032 0660

E-mail: info@wao.gov.uk

E-bost: info@wao.gov.uk

Website: www.wao.gov.uk

Gwefan: www.wao.gov.uk