Health Technology Wales: Report of 3 Year Progress Review

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Executive summary

- **This report reviews the progress of Health Technology Wales (HTW) after 3 years of operation using a specification based on the 2014 Access to Medical Technologies in Wales report recommendations.**
- **Based on a rapid review, comprising documentary evidence, stakeholder feedback and direct observation, HTW is unequivocally fulfilling its core function of providing a dedicated centre of expertise in Wales for the identification, appraisal and adoption of health technologies.**
- **HTW is a high-functioning organisation with, at an early stage, an impressive portfolio of high-quality HTA outputs. It has also delivered a remarkable range of activities to engage stakeholders and to promote its work.**
- **Inevitably, it is too early to make a judgment on the impact of its work but the preparatory work for measurement of this is highly promising.**
- **In summary, HTW has made an impressive start and is developing strategic plans from a robust position. The remainder of the report contains a commentary on current strengths, and suggestions for improvement for each of 7 review questions.**

Background

1. This report is in response to a specification (Appendix 1) developed in August 2020 by the Director and Chair of Health Technology Wales (HTW). The specification describes the origins and functions of HTW and explains the background to the review. In summary, the review is designed to help critical reflection on the organisation's establishment and 3 years of operation, and to build relevant learning into forward planning. The review questions in the specification are:

#	Review area
1	HTWs general progress against the recommendations underpinning its establishment in the 2014 Welsh Government inquiry into 'Access to Medical Technologies in Wales'.
2	The quality of HTWs appraisal function, its evidence review and Guidance outputs and their concordance with good practice in undertaking HTAs.
3	The efficiency and productivity of HTWs rapid review model, benchmarked against national and international peer organisations (e.g. other HTA bodies).
4	The return on the investment and value for money of HTW, benchmarked against national and international peer organisations.
5	The merit of building additional HTA capacity in Wales, through increased investment in HTW, compared with buying this capacity from external providers of analytical services (e.g. academic centres, consultants etc.).
6	HTWs capacity and capability, both in terms of staffing and leadership, to respond effectively to future demands and the changing environment.
7	Balance between HTWs identification, appraisal and adoption functions and whether current funding levels and allocations reflect the balance of functions and priorities.
8	Suggested areas for development, based on a gap analysis against the Inquiry recommendations, to ensure that HTW remains at the forefront of HTA practice and maintains rigour and trust in its appraisals and guidance

Methods

2. The review took place over 6 weeks between September and November 2020 and with an allocated working time of 7.5 days. A mixed methods approach was used drawing mainly on readily-available information which was collected in three ways:

    a. Documentary information comprising published information available from the HTW website or social media channels and unpublished internal material supplied by the HTW team. An evidence collection plan was developed incorporating generic document descriptors for the type of information which was expected to be available and could inform commentary on the review questions. The descriptors were matched by the HTW team

to available documentation; the team also provided an ‘e-briefing’ listing of potentially relevant information. Further written evidence was gathered as issues emerged, supplemented by email clarifications and questions;

b. Informal semi-structured interviews lasting 30-45 minutes with staff and stakeholders chosen to reflect relevant perspectives on HTW’s work: experience of direct working with the organisation; health and care system; patient and public involvement (PPI); life sciences industry; and academic health technology assessment (HTA). Question themes were designed to cover written evidence gaps and corroborate impressions gained from other evidence. Interviews were conducted in confidence, and on the basis that responses would not be attributed to either individuals or their organisation type or sector;

c. Observing key HTW decision-making groups with the aim of assessing process efficiency and methods of decision-making;

3. The plan was to analyse and summarise the collected evidence to provide both an overall assessment, and to comment on strengths and opportunities for each of the 7 review questions, citing examples where relevant. It was expected that limited evidence would be readily available, and that there would be insufficient time to gather specific evidence, to support firm conclusions on questions 3 and 4. It was also expected that there may be insufficient information on the uptake of technologies subject to HTW guidance, which may limit judgements on its impact on adoption.

Evidence

Documentary

4. In total, over 120 pieces of documentary evidence were reviewed. The evidence collection plan and a summary listing of documents by review question is at appendix 2. Much of the documentary evidence was relevant to multiple questions; each source is listed against the question for which was particularly used. There was limited, and overlapping, evidence to answer questions 3 and 4, and these are combined for the remainder of the report.

Stakeholder interviews

5. Telephone interviews were held with 6 members of staff, including the HTW Chair, and with 14 external stakeholders (appendix 3). Question themes were based on the review questions, adapted for the interviewee’s perspective.

Observation of key meetings

6. Three HTW meetings were observed:

    a. Appraisal Panel (29 September) at which guidance was developed on 2 topics;

b. Assessment Group (6 October) which made progression decisions on 2 late-stage and 5 early-stage products;
c. PPI Standing Group (21 October) which, among other business, decided on the PPI approach to be used for 3 ongoing topics and approved 2 plain language summaries for near-complete guidance;

There were no meetings of the Industry User Group or Front Door Signposting Group during the review period. The terms of reference and meeting papers for these groups were instead added to the document review.

Review question 1 – progress against the Access to Medical Technologies in Wales (AMTW) recommendations

7. The Health and Care Committee made 13 recommendations all of which were accepted in principle by the Welsh Government. All the recommendations have a bearing on the work of HTW; the specification for this review identifies recommendations 3 and 5 as particularly relevant to the work of HTW:
    a. 3. That the Minister for Health and Social Services, within 12 months of the publication of this report, should develop options for an all-Wales medical technologies appraisal mechanism, to undertake a similar function in respect of medical technologies as the All Wales Medicines Strategy Group (AWMSG) does for medicines.
    b. 5. That the Minister for Health and Social Services should ensure that the uptake of recommended medical technologies across Wales, including those recommended by NICE, is measured as part of a formal audit process.
8. Documentary evidence shows that HTW convincingly fulfils recommendation 3. It provides a strongly connected and highly-active centre of expertise for the identification and appraisal of non-medicine technologies in Wales. In addition, although no report has yet assessed progress against all 13 recommendations (and this is outside the scope of HTW and of this report) stakeholder feedback confirms that HTW has fully taken account of the Health and Care Committee's wide-ranging recommendations in planning and carrying out its work. The HTW Annual Report for 2018/19 is an excellent example of its type and sets clear future objectives. HTW's communication and delivery strategy was designed around its founding aims and based on audience insights from stakeholder groups. Notably, the clarity and ease of use of the HTW website is excellent.
9. HTW has a strong track record of engagement with the health care system. There are many examples of good practice including topic workshops with radiotherapy practitioners and with cardiac network stakeholders to share intelligence and identify products of interest. This directly addresses AMTW Recommendation 1 that the approach to medical technology adoption should facilitate the engagement of all stakeholders including clinicians, patients, industry and research partners.
10. Strong stakeholder feedback also confirmed that the start-up phase of HTW has resulted in a high-functioning organisation, and that the outputs that are designed

to meet the needs of the Welsh health and care system. There was consensus that, at this early stage, it would be unfair (even if possible) to judge the impact on technology adoption and subsequent patient and system benefits. Nevertheless, there were universal views that the direction of travel is highly promising.

11. In addressing recommendation 5 of the AMTW inquiry, which states that the uptake of non-medical technologies should be subject to a formal audit, HTW has collaboratively developed a high-quality analysis of the landscape and recommendations for an adoption framework. It has therefore, despite implementation being delayed by the Covid-19 pandemic, done as much as possible to address AMTW recommendation 5. The goal of demonstrating the impact of innovation adoption has proved to be resistant to repeated policy initiatives in the NHS in England and elsewhere. The multiple methods approach taken by HTW to develop its Audit Function report, comprising local, national and international survey input and a multidisciplinary, cross-sector, task and finish group, provides a framework for Wales with a high plausibility of success.
12. Stakeholders confirmed the pressing need for an improved adoption infrastructure for innovative technologies. They also reflected that many aspects of this are not the direct responsibility of HTW but that acting as a coordinating secretariat drew on its recognised technical and project expertise.
13. There are no specific **suggestions for improvement** for this review question, because the inquiry which led to HTW's establishment reported in 2014 based on evidence collected over the previous 2 years, and because no progress report on, or update of, the recommendations has been published. Should this change, HTW's excellent and supportive links with Welsh Government will inform future planning.

Review question 2 – quality of HTW's appraisal and evidence review functions

14. HTW's published outputs (topic exploration reports [TER], evidence appraisal reports [EAR] and guidance) are high-quality examples of HTA which stand comparison with national and international examples of rapid review-type evaluations; nearly all aspects demonstrate concordance with good HTA practice.
15. During its start-up phase, HTW's priorities were the establishment of a suitably qualified and experienced team, the rapid development of processes and methods, and the production of initial outputs. This resulted in a pragmatic adaptation of established processes in other organisations and a continued iteration of these in the light of experience. Understandably, no process or methods guides have yet been published, or subject to wide stakeholder testing. This means that a systematic assessment of compliance with best HTA practice would be premature. It would also be limited by the absence of a recognised exemplar for rapid response HTA, although this is a current international methodological research interest. Nevertheless, in adapting existing proven processes, HTW's evaluations substantively follow a structure which is

somewhere between the EUnetHTA HTA Core Model and the adaptation of it for Rapid Relative Effectiveness Assessments.

16. Internal quality assurance and supervision arrangements for researchers are good, and staff have good access to relevant continued professional development. More recently, a comprehensive suite of high-quality Standard Operating Procedures, with structured quality checks, has been developed and - when fully implemented - should minimise any variation between topics. There is a need for a corresponding technical manual on methods for researchers.
17. HTW's decision-making groups (Assessment Group and Appraisal Panel) have clear, written terms of reference, are effectively constituted, and are supported by efficient committee management. Decision-making is facilitated by high-quality documentation, enabled through a comprehensive set of process steps including effective engagement of external expert advisers. The conduct of the meeting is professional and members and external advisers are engaged appropriately.
18. General stakeholder feedback recognised the quality and usefulness of HTW's evaluation outputs, particularly (as would be expected) the TERs and guidance.
19. Stakeholders with direct experience of working with HTW were highly complementary about the organisation's professionalism, the robustness of the process, and the technical expertise of the HTW team. They felt meetings were run in a respectful way, were confident about decision-making, and reported the work to be stimulating and worthwhile. There were some concerns about the length and complexity of some documents, which could be helped by relatively minor improvements such as a summary.
20. Some stakeholders stated that the value assessment of a technology should not be obscured by detailed consideration of perceived under-capacity or other issues in relevant Welsh clinical pathways. They noted that planning and commissioning services based on Welsh population needs is not the responsibility of HTW. In fairness, this is a common dilemma for HTA agencies which need to make credible recommendations, based on gathering relevant pathway insights, which stand a realistic chance of being implemented.
21. Arrangements for patient and public involvement (PPI) are notable, and supported by dedicated resources. The framework is informed by international best practice and the topic-specific activities are systematically organised using a standard process and templates for information gathering. There is increasing evidence of patient and carer considerations in published guidance documents and there is a plan to measure the impact of the PPI function on Appraisal Panel decision-making. The PPI Standing Group is an effective working community whose business is well planned and managed. The overall PPI model deserves sharing widely, which has been done through conference presentations and publications, and could potentially be offered to organisations with a similar need but which lack dedicated capacity and capability, perhaps on a cost-recovery basis.

Suggestions for improvement

22. A system of induction and ongoing development for decision-making group members, as well as a periodic non-business 'timeout', would be useful based on feedback from relevant stakeholders.
23. Currently, the Assessment Group (AG) provides the main external technical quality assurance function for scrutiny of the research team's work. This appears not be a regular feature of the AG workplan, and the current academic HTA membership is fulfilled by a senior health economist. These arrangements could be strengthened by making the scrutiny role more explicit and recruiting a suitable senior, experienced systematic reviewer. This would ensure that any risks from the use of a flexible, responsive, rapid review HTA model are minimised.
24. A project to consolidate and publish the processes and explicit methods for evidence retrieval, synthesis and decision-making, initially for guidance development, would have several benefits:
    a. It would minimise the risk of variation in process or methods between topics and allow for any appropriate differences for different technology types (procedures, care processes, devices, diagnostics, digital) to be considered;
    b. It would allow the opportunity for stakeholder testing and engagement, and improve the transparency of HTW's methods;
    c. It would allow a baseline from which to plan future iterations based on emerging methods research and best practice;
    d. It could form the basis of a technical manual for health service researchers;
    e. It would allow the chance to sense-check the process components against recognised standards of guidance production. Using the NICE Accreditation Programme has previously been considered by HTW and not progressed because the programme no longer accepts new applications but the summary accreditation criteria remain available would be suitable for a high-level gap analysis. This would identify areas where there is no current process such as whether guidance is updated when new evidence becomes available;

       Some relevant documentation, such as the recently-developed SOPs and the Operating Arrangements and Terms of Reference (March 2019), already exist and would form a good basis for a modular approach to process and methods guide development.

Review questions 3 and 4 – efficiency, productivity, return on investment and value for money

25. This question was considered solely from document review because it was judged unfair and potentially misleading to ask stakeholders open questions about return on investment and value for money as part of a short telephone

interview. However, at the end of each interview, external stakeholders were asked if they had any other reflections on HTW or its work, and none raised the issue in this review question.

26. Documentary evidence shows a strategic approach for HTW to measure its efficiency and productivity. Examples include:
    a. The production of annual impact statements which, as well as number of outputs by type, show the number of patients potentially subject to guidance recommendations;
    b. A prospective organisational evaluation plan, developed with expert consultancy, which provides a structured and outcome-focused framework for impact evaluation. This framework has produced a small amount of useful early data;
    c. Analysis of the cost impact of the first 11 pieces of guidance, using a mixture of costs avoided (from not investing in poor value new technologies) and costs saved from deployment of technologies which promote the efficiency of pathways.
27. HTW's resource management is also strong, with accurate in-year forecasting. Planned developments requiring additional investment have been well-supported by quantified impact estimates. HTW now wants to begin a cycle of annual business and longer term strategic planning (see also paragraph 47), both of which will help future value for money assessments.
28. HTW's aims for operational efficiency and maximum productivity include a strategic approach – enabled through Memoranda of Understanding (MoU), to sharing and reusing work from other agencies with a similar purpose. Notable examples include:
    a. Re-using work on topics of common interest to HTW and to Scottish Health Technologies Group (SHTG) and/or the Health Information and Quality Authority (HIQA);
    b. Re-using European Network for Health Technology Assessment (EUnetHTA) collaborative assessments;
    c. Not duplicating evaluations by NICE or other agencies and by re-using relevant NICE evidence assessments where HTW is evaluating the same technology in a different population, indication or setting.
29. HTW has also worked with both EUnetHTA and with the International Network of Agencies for Health Technology Assessment (INAHTA) on a range of practice-sharing and evidence assessment initiatives, resulting in recognition of its expertise and publications in high impact journals.
30. No significant evidence was available for benchmarking either HTW's operational efficiency or the return on investment for its activities across the life sciences sector or health and care system. Source of limited use evidence included:
    a. NICE's procedure for charging for Technology Appraisals (price to companies £126k based on full cost recovery);

b. A largely nil response from INAHTA members but indicating the desirability of such work. One highlighted paper (Wang et al, IJTAHC 2020:36:332-348) described a tool to benchmark process steps and timelines for new medicines and did not include cost or impact considerations. The tool may nevertheless be of future interest;
c. Output levels of SHTG and HIQA were of limited use because SHTG uses a different working model and because HIQA carries out relatively few HTAs; no budget information is published for either organisation.

31. Based on headline output numbers to July 2020 (including 120 TERs, 17 EARs and 13 pieces of guidance) and considering the level of investment, the quality of the outputs, the diversity of topics covered and the level of health and care system engagement, HTW has delivered impressive value for money in its start-up phase.
32. The same favourable subjective judgement applies to the average output unit costs provided for the production of TERs and EARS and to the management costs of decision-making groups. The corresponding costs of externally commissioning comparable products will be significantly higher, and HTW has experience of this. A TER-type product would be expected to cost three-four times as much.

Suggestions for improvement

33. HTWs has entered into a range of MoUs with agencies fulfilling a similar purpose which demonstrates good collaborative behaviours and may promote efficiencies and productivity. There is, however, a risk that HTW will be a net contributing partner in collaborations which consume resource without delivering tangible benefits.
34. The same consideration applies to the opportunity cost of international HTA collaborations such as EUnetHTA and INAHTA, unless agreed work programmes are supported by additional resource. Collaborative projects serve the greater good, are professionally satisfying for individual staff, and enhance reputation. However, international HTA collaborations are consistently capacity-challenged and can consume resource without delivering benefits for the core functions and audience of participating organisations, particularly those (such as HTW) which are well-developed with an existing high standard of HTA practice.
35. HTW has recently launched a Scientific Advice Service in response to stakeholder demand, and to provide a contribution to its operating costs. There is no reason for the charge to be less than that levied by other HTA organisations. In addition, the risk of relying on income from the Service should be carefully considered in future business and budget plans, because demand is outside HTW's control.
36. HTW currently accepts a wide range of topic proposals, less than 10% of which currently result in published guidance. Although this ratio is commonly low in non-medical technology evaluation activities, future judgements on efficiency and

productivity are likely to be easier for guidance recommendations than for signposting activities (see paragraphs 54 and 55 for further suggestions on this).

Review question 5 – building additional capacity

37. HTW is ambitious to expand and a business case in July 2020 was based on proposals for incremental expansion. This was followed by further work on potential step-change options, supported by medium term strategic planning. This will require additional evidence assessment capacity, either by increasing internal capacity and/or external commissioning.
38. No documentary evidence, other than the sources referred to in the previous review question, was identified on which to base an analysis or options appraisal. Stakeholders were not asked specifically about this review question but were consistently supportive of an increase in guidance throughput.
39. Issues to explore in a future options appraisal include:

Issue	**Internally-provided**	**Externally-commissioned**
Setup	Quicker and more straightforward, depending mainly on ability to recruit and induct suitable qualified and experienced staff. HTW has been successful to date, often by exploiting existing personal and organisational connections. The 'pool' of potential researchers is, however, limited and induction and supervision of recruiting relatively inexperienced staff will need more resources than has been the case to date.	Resource intensive, requiring tender and specification development for public procurement. Slow. No guarantee of suitable organisations prepared to bid.
Range of evidence services	Potentially limited.	Multiple, specialist services can be specified to match the need. For non-medical technologies, can include technical evaluation.
Capacity	Fixed; risk of spare capacity in times of low topic throughput.	More flexible, depending on nature of contract. Requires dedicated procurement expertise to design suitable framework and continuous contract allocation and performance management.

Issue	Internally-provided	Externally-commissioned
Independence	Assessment prepared and checked by same team; limited ability for 'triangulation'.	Independent expert assessment, which can be critically reviewed by internal team. Enables robust support in case of challenge to evidence interpretation eg when contested by commercial sponsors
Quality of work	More easily controllable, any remedial action needed under local control.	Potential to commission internationally-recognised HTA expertise but resource intensive to manage for both project and technical teams. Poor quality work disruptive to workflows and output plans.
Acquisition costs	Almost certainly lowest acquisition costs.	Orders of magnitude more expensive than internal provision, not including procurement and contract management costs.
Added value elements of guidance production (PPI, Welsh context, expert advice)	Flexibility and control retained.	Managing through third-party less flexible, more resource intensive and stakeholders lose 'personal touch'.

40. When the NICE Medical Technologies Evaluation Programme was established in 2010, contracts for evidence assessments were specified and tendered to provide evidence assessment services, including review and critique of the company submission. These specifications have since been updated and re-commissioned twice. The last tender which supports multiple programmes with 4 broad types of service, has a maximum value of £6 M. When considering options when current contracts expire, NICE's Senior Management Team has recently asked the programme team to develop proposals which include bringing services in-house.

Suggestion for consideration

41. One principle disadvantage of expanding outputs using increased in-house evidence assessment capacity, especially for a guidance development process which does not rely on a company submission, is that there would be no independent HTA view of the evidence assessment. This is because the

evidence retrieval and synthesis, and its quality assurance review and oversight, are carried out by the same personnel which, even with robust processes, carries a risk. There may an option to combine increasing internal capacity with external quality assurance from another organisation, either externally commissioned, or through a 'mutual aid' system with other agencies carrying out evidence assessment in Wales, or more widely.

Review question 6 - leadership and management capacity and capability

42. An internal audit report (September 2019) of arrangements for governance and risk management, workforce management and financial management gave substantial assurance on systems of internal control. HTW has appropriate Terms of Reference for liaison arrangements with its host organisation.
43. HTW has demonstrated the ability - in unprecedented circumstances - to pause and restart its planned work to respond to system need for evidence-based information on the response to Covid-19. This required new priorities to be quickly established, adaptation of existing processes and rapid turnaround and regular updating of outputs.
44. HTW has also demonstrated the ability to attract additional resources, and increase capacity as needed, to take part in collaborative work programmes such as on emerging technologies for the Midlands and Wales Advanced Therapy Treatment Centre.
45. Stakeholders gave universal feedback that HTW is a high-functioning organisation which is well-managed and well-respected. There was also positive feedback for its work on Covid-19 related technologies.

Suggestions for improvement

46. The HTW organogram shows an appropriate skill mix and clear management arrangements. As the organisation expands, the senior and principal researcher roles will need increasing leadership and management competencies. The current balance between programme and technical functions would benefit from review. This is because:
    a. The recently-developed standard operating procedures will need dedicated resource for both embedding and routine operation in production of core outputs;
    b. Oversight of the sheer breadth of activities started or planned would be suited to a programme or business manager-type role. This would have a range of potential benefits:
        i. Enable more of the Director's time to be spent on strategic planning and engagement;
        ii. Provide leadership for the programme team and day-day HTW management including troubleshooting guidance development issues;
        iii. Deputising for the Director on governance functions such as finance and HR;

iv. Providing effective coordination of disparate activities such as: maintaining and monitoring work plans arising from the multiple MoUs in place; supporting business case development for ad-hoc activities, ensuring that the impact on core business is critically reviewed, that additional work is fully funded, and that staff committed to projects can be effectively backfilled.

47. A remarkable range of activities has been undertaken by HTW in its start-up phase. These have contributed to the organisation's profile and credibility but not all are sustainable at the current level. An annual business planning cycle should be established, starting for 2021/22 and building on the 'vision for 2020' described in the 2018/19 annual report. A business plan comprising of 4-6 programme (strategic) objectives, 4-6 activity-based targets (based on the standard topic briefing and guidance outputs) and small number of other objectives, would have a range of potential benefits:
    a. Annual review and agreement of HTW priorities with Welsh Government which could be asked to approve the plan and associated resources. The plan could then form the basis of key performance indicators for the Director's quarterly reports to the Executive Group/Welsh Government;
    b. The business plan's objectives and targets could form the basis of individual staff appraisal aims;
    c. The risk register could be focussed on the plan's objectives and targets;
    d. An annual business plan for 2021/22 would provide a period of consolidation, allowing significant progress to be made on strategic planning for 2022 and beyond to start.

Review question 7 – balance between identification, appraisal and adoption functions

48. The review question addresses a challenge that no HTA agency has yet successfully solved, of how best to rapidly and efficiently identify innovative health technologies with a sufficiently mature evidence base to support recommendations for adoption, and to measure their impact. For topic identification, the documentary evidence demonstrates a strong multi-component approach combining use of HeathTech Connect (and active contribution to its development), wider surveillance, national stakeholder engagement and topic calls. HTW has taken innovative approaches to this (see also paragraph 9) which are likely to be increasingly possible at lower cost and broader reach through the digital transformation of its operations.
49. The 17 pieces of published guidance cover a diverse range of technologies (appendix 4); 7 (30%) make recommendations for adoption in 1 or more patient groups or indications; the remainder promote further research or are not recommended. Research recommendations may help inform funding priorities in

relevant Health and Care Research Wales programmes but there is no current mechanism for this.

50. There was strong and consistent feedback from stakeholders for a focus on producing more guidance and that prioritising an increase in guidance throughput would have the biggest impact on HTW's visibility and impact. This view prevailed notwithstanding the challenges and importance of measuring the impact which depends on a 'critical mass' level of output. Stakeholders also valued the HTW guidance 'brand', based on local decision-making in a Welsh-focused context but advised remaining vigilant to not duplicate output from NICE or other agencies, and to devote sufficient capacity to promote NICE's health technology guidance recommendations. Stakeholders welcomed the future direction to develop outputs for appropriate digital technologies and on process and methods development for social care topics.
51. Stakeholders also gave strong and positive feedback on HTW's co-ordinating role on adoption audit development, including the NICE Liaison Group. Further brief considerations on the adoption function are in paragraphs 11-12.
52. Stakeholders also welcomed the launch of HTW's Scientific Advice Service (SAS) and recognised its potential impact to enabling technology developers to generate relevant evidence which could support future guidance recommendations. Stakeholders gave clear feedback on 2 aspects of the SAS: that provision of the META tool should attract a comparable charge to that made by other franchisees (see also paragraph 35); and that the companies accessing the service may be taking a global market view beyond the Welsh or NHS market and that the service should be developed in this context. The HTW Industry User Group is well placed to guide SAS development.

Suggestions for improvement

53. HTW has already carried out significant time and cost utilisation work to understand, prioritise and balance its identification, appraisal and adoption functions. Further work would be helpful to quantify the **proportion** of time spent, particularly by researchers, on core functions (identification, appraisal, adoption) and other activities (training, international work, publications). This could support business planning on priority objectives and targets with the highest impact for the Welsh health and care system (see also paragraph 50).
54. In common with other HTA agencies which evaluate non-medical technologies, a significant amount of HTW researcher time is committed to topic identification, work up of proposals and initial evidence assessment. HTW keeps these processes under review and the Assessment Group model for decision-making on topic progression is good. Future options which may improve the efficiency or impact of pre-guidance topic workup include:
    a. Asking topic proposers, or otherwise making an early decision, on the preferred output. This could help routing considerations which might include a technical evidence assessment (for decision-making by another organisation), an early awareness evidence-focussed briefing (see point b) or guidance recommendations;

b. Revising the content and branding of the current TER as HTW ‘advice’ (eg by placing the conclusions at the start) rather than a technical evidence summary. Comparable SHTG and NICE outputs may be suitable models;
c. Seeking feedback and suggestions from Assessment Group members on potential improvements in the efficiency of the current process, such as whether including more work-up could be done by the team before first presentation, or whether additional or different information in the presented evidence would accelerate decision-making;
d. Formalising systems for earlier liaison with NICE and other agencies to share confidential information on topics of common interest, for which there is willingness and interest in all organisations. Checks are currently done by reviewing published topic selection decisions which are limited by the respective organisations’ process for publishing this information. This could usefully form a workstream based on the HTW-NICE and HTW-SHTG MoUs.

55. Options to increase the potential throughput and impact of guidance include:
    a. Considering at an earlier stage whether topics represent disinvestment cases (potentially requiring an adapted topic selection and evaluation process and methods) or (more conventionally) new and novel technologies which displace current standard care. Existing links with the Value Based Health Care programme are a good opportunity to explore how HTW could support disinvestment initiatives;
    b. Adapting published NICE medical technologies, diagnostic and relevant technology appraisal guidance, all of which are subject to planned increases in throughput, through a light-touch process for publication as HTW recommendations. Early examples suggest that the SHTG adaptation product, which is based on published EUnetHTA methodology, may be a suitable model. This work also could usefully form a workstream using the HTW-NICE and/or HTW-SHTG MoUs;
    c. Reviewing current topic selection and prioritisation criteria to make an earlier decision on progression of multiple technology evaluations (which account for 12 of HTW’s 17 published guidances) because these take longer, are more resource intensive and the uptake is potentially more difficult to measure.

Acknowledgements

I thank the Health Technology Wales team for dedicated and committed support for the review which they did in a friendly and highly efficient way. I also thank them for their openness in the various discussions. I am also grateful to external stakeholders who gave their views freely and enthusiastically.

The views expressed in the report are mine alone. This was a high-level review with wide-ranging objectives and where there was a large amount of documentary evidence on which to draw. A rapid review of the evidence informed the commentary and recommendations in the report but a detailed summary of all of the evidence gathered was outside the scope of the review. Any resulting errors or omissions as a result are also my sole responsibility.

Declaration of interests

I provide paid consultancy services to health technology companies but have no current projects on technologies under active consideration by HTW. In a previous role as a NICE senior manager, I took part in early stakeholder discussions with Welsh Government representatives on the options appraisal arising from the Access to Medical Technologies in Wales report.

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Appendix 1: HTW 3 year progress review specification

HTW%20Review%20and%20Benchmark

Appendix 2: Evidence collection plan and documents reviewed

#	Review area	Documents pre-specified by generic description	Relevant documents identified and reviewed for evidence
1	HTWs general progress against the recommendations underpinning its establishment in the 2014 Welsh Government inquiry into 'Access to Medical Technologies in Wales'.	Business plan(s) Annual report(s) Minutes of meetings with Welsh Government sponsor team and any other external advisory/scrutiny groups. Impact Statements	Information supplied by HTW team: Annual Report 2018-2019 Director's Update Report 2019/20 Q4 FINAL* Director's Update Report 2020/21 Q1 FINAL* Director's Update Report 2020/21 Q2 DRAFT* Executive Group Minutes July 2020* Impact Statement 2018 Impact Statement 2019 Steering Group Minutes September 2018* Steering Group Minutes June 2019* Steering Group Minutes November 2019* --- **Additional evidence identified and retrieved during the review** https://www.healthtechconnect.org.uk/htw-case-study/ (2019) A Guide to Health Technology Assessment at HIQA (2016) AWMSG 2018-2023 strategy HTW Operating arrangements and terms of reference (March 2019) Developing the Health Technology Wales (HTW) Audit Function Report & Recommendations. February 2020 A Healthier Wales; our plan for health and social care. Welsh Government (2019) HTW Impact Evaluation Report (v0.2, October 2020) * Documents on planned roundtables*
2	The quality of HTWs appraisal function, its evidence review and Guidance outputs and their concordance with good practice in undertaking HTAs.	Written guide(s) to methods of topic identification, prioritisation, evidence gathering and synthesis and appraisal. HTW-NICE Memorandum of Agreement on Strategic Collaboration (announced 3 March 2020)	Full suite of SOPs, templates documents, template emails, tools and resources. HTW-NICE MOU* Appraisal panel agenda and papers 29 September 2020* Assessment group agenda and papers 6 October and 3 November 2020* PPI Standing Group papers 21 October* --- **Additional evidence identified and retrieved during the review** Sample of published and in-development guidance and Evidence Assessment Reports Sample of published Topic Exploration Reports EUnetHTA Core Model for HTA and its adaptation for Rapid Comparative Effectiveness Evaluation HTW Publication sign-off xl template

#	Review area	Documents pre-specified by generic description	Relevant documents identified and reviewed for evidence
3 4	The efficiency and productivity of HTWs rapid review model, benchmarked against national and international peer organisations (e.g. other HTA bodies). The return on the investment and value for money of HTW, benchmarked against national and international peer organisations.	Written guide(s) to processes of topic identification, prioritization, evidence gathering and synthesis and appraisal. and workplan(s) Terms of reference and minutes of Front Door Signposting panel, assessment group and appraisal panel. Budget, headcount and skill mix information. Analysis of outputs by type, number and complexity. Analysis of outputs by timeliness (against plan and stakeholder priority). Annual and monitoring reports (eg Board papers) of organisations with a similar purpose and scope and which contain budget and/or headcount and/or output information. Likely to include (but not limited to) NICE, SHTG, CADTH. Relevant EUnetHTA assessment models*	See also review area 2 AG Action Log January, Jun, Aug, Sep 2020* AG Minutes Jan & Jun 2020* Signposting Group Action Log 2018 and 2019* TOR for AP, AG and Signposting Group For headcount please see Director's Update Report Q2* HTW Finance update FY2020 Q1* Topic Tracker excel workbook & Work Programme update* INAHTA listserv enquiries --------------------- **Additional evidence identified and retrieved during the review** SHTG publications, workplan and process manuals EUnetHTA Other Topics Collaborative Assessment 23: Biodegradable rectum spacers to reduce toxicity for prostate cancer (July 2020). https://eunethta.eu/hta-core-model/ HIQA annual report 2018/19 and selected HTA outputs
5	The merit of building additional HTA capacity in Wales, through increased investment in HTW, compared with buying this capacity from external providers of analytical services	As for last para of #3 plus HTW workforce/budget/output information. NICE EAC contract tender information* Estimates of other external consultancy costs* Internal costing analysis of per-output costs	Business Case for additional resources (July 2020) * Time and cost of HTW activity (July 2020) * ---------------- **Additional evidence identified and retrieved during the review** NICE EAC tender documentation NICE Board papers and Senior Management Team minutes

#	Review area	Documents pre-specified by generic description	Relevant documents identified and reviewed for evidence
	(e.g. academic centres, consultants etc.).		
6	HTWs capacity and capability, both in terms of staffing and leadership, to respond effectively to future demands and the changing environment.	Business plan(s) Strategic plan(s) Any audit reports as part of host trust internal audit plan. HTW's Covid 19 work	Velindre Audit of HTW Final Report 2019* HTW COVID19 Impact Report AWMSG Five-year Strategy 2018–2023 Director's Reports to Welsh Government* Impact survey findings* ---------- **Additional evidence identified and retrieved during the review** HTW risk register* HTW organogram HTW-AWTTC MoU* HTW Impact Literature Review
7	Balance between HTWs identification, appraisal and adoption functions and whether current funding levels and allocations reflect the balance of functions and priorities.	As for 3 plus Impact Statements Cost analysis of first 10 pieces of HTW guidance (internal report) Industry User Group terms of reference and minutes	See 1 (2018 & 2019) Potential cost impact of HTW Guidance doc IUGC TOR and Action log* (Nov 2019 and Aug 2020) **----------** **Additional evidence identified and retrieved during the review** HTW SAS process* NICE business plan 20-21

* Denotes an unpublished internal HTW document that is not routinely available

Appendix 3: telephone interviewees

Stakeholder	Perspective
HTW Staff (N=6)	HTW (Leadership; Researchers; Project Office)
Association of British Healthcare Industry (ABHI)	Industry
MediWales	Industry
Welsh Government, Director	Government sponsor
Welsh Government, Policy Lead	Government sponsor
Patient & public involvement (PPI) expert	Patient and public involvement
Welsh Health Specialised Services Committee (WHSSC)	Health and care system
Clinician & HTW Appraisal Panel local health board member	Health and care system
Clinician & HTW Appraisal Panel local health board member	Health and care system
NICE facilitator	Health and care system
All Wales Therapeutics & Toxicology Centre	Health and care system
Social Care Wales	Health and care system
Academic & HTW Assessment Group member	HTA
NICE Technical Adviser	HTA
NICE Senior Technical Adviser	HTA
Invited for interview but did not respond or not available	
Value Based Health Care	Health and care system
Academic	HTA
Patient Access expert	Health and care system
Procurement	Health and care system

Appendix 4: summary of published HTW guidance

Date	GUI#	topic	Technology type	Single or multiple technology	Type of recn*
Feb-18	GUI001	Mechanical chest compression	device	multiple	3
Feb-18	GUI002	Corneal cross-linking	procedure	procedure	3
Apr-18	GUI003	Sacral nerve stimulation	procedure with device	multiple	2
Nov-18	GUI004	FreeStyle Libre flash glucose monitoring	device	single	2
Jan-19	GUI005	Fluorine- or gallium- prostate-specific membrane antigen positron emission tomography radiotracers	diagnostic	multiple	2
Jan-19	GUI005	Fluorine- or gallium- prostate-specific membrane antigen positron emission tomography radiotracers	diagnostic	multiple	3
Feb-19	GUI007	Faecal immunochemical test-based prediction tools	diagnostic	multiple	3
Mar-19	GUI008	Synovasure® Alpha Defensin Lateral Flow Test Kit	device	single	3
May-19	GUI009	Hand-held ultrasound devices	device	multiple	3
Sep-19	GUI010	Robot-assisted thoracic surgery	device/system	multiple	3
Oct-19	GUI012	Continuous Glucose Monitoring in Pregnancy	diagnostic	multiple	1
Dec-19	GUI013	Occipital nerve stimulation	procedure with device	multiple	3
Dec-19	GUI014	Multigrip upper limb prosthetics	device	multiple	3
Mar-20	GUI015	Single-operator per-oral cholangioscopy	procedure	multiple**	2
Jul-20	GUI016	Cardiopulmonary exercise testing	diagnostic procedure	multiple	4
Jul-20	GUI019	Autologous haematopoietic stem cell transplantation	procedure	procedure, no individual technology	1
Oct-20	GUI020	RADT	diagnostic	multiple	2
Oct-20	GUI024	TAVI	procedure with device	multiple	3

* key to recommendation category (n and % of 18 recs in 17 guidances): 1 - routine adoption (2, 11%); 2- conditional recommendation for adoption use and with research recommended (5, 28%); 3- not suppported/only in research or evaluation (10, 56%), 4 - unclear (1, 6%)

** single at time of evaluation