Technoleg Iechyd Cymru
Health Technology Wales

Health Technology Wales

Adoption Audit Pilot Report 2021/2022

Executive Summary

- Health Technology Wales (HTW) has demonstrated that an annual audit assessing the adoption of HTW guidance is both feasible and acceptable. The audit has been designed in line with the recommendations made by the Adoption Audit Task and Finish Group[1] and can successfully discharge recommendation 5 of the 2014 inquiry into "Access to Medical Technologies in Wales" [3] .

- HTW engaged with a range of stakeholders and requested returns from each of the local health boards, Welsh Health Specialised Services Committee (WHSCC), and Welsh Ambulance Service NHS Trust. The audit response rate was encouraging with eight of the nine key organisations invited to participate providing either a full (five organisations) or partial (three organisations) responses. Procurement Services also provided all requested data and additional relevant topic experts provided input for all topics.

- Responses indicate that awareness of HTW guidance is high, that clarity of HTW guidance recommendations is good, and HTW guidance is having some form of impact in the majority of cases. These findings are particularly promising given that guidance published shortly after HTW's establishment is included in this audit.

- The approach used in the adoption audit was able to differentiate different levels of adoption and impact of HTW guidance. In some cases, there had been adoption or planned adoption of technology with HTW guidance having a clear impact on decision-making, (mechanical chest compression; faecal immunochemical testing; autologous haematopoietic stem cell transplantation). In other cases, there was an intention to adopt with a clear impact of HTW guidance but barriers to adoption were present (sacral nerve stimulation; gallium prostate specific membrane antigen-positron emission tomography (PSMA-PET)). Finally, in some cases there was limited adoption either due to queries around the clarity of HTW guidance and supporting evidence (cardiopulmonary exercise testing) or due to existing adoption of the technology and availability of alternatives (continuous glucose monitoring in pregnancy) prior to publication of HTW guidance and the availability of alternatives which were covered in subsequent HTW guidance.

- Responses to the adoption audit did not highlight funding as a factor where HTW guidance had not yet been adopted or adoption was not planned. Indeed, in some of these cases, local health boards had provided or agreed in principle funding for services to be delivered outside of Wales. Other barriers to adoption were cited, including difficulties in provision for small patient populations, need for internal prioritisation by other bodies, requirement for national investment to support technology, and lack of buy-in by clinical teams.

- Regular monitoring of the adoption of HTW national guidance has the potential to support multiple ambitions outlined in the health and social care policy agenda for Wales, document and maximise the return on the investment in HTW, and make Wales a leader in monitoring the impact of national guidance, both in the United Kingdom and internationally.

Proposed Future Directions

- HTW should now mainstream the adoption audit and ensure that necessary actions are taken to support an annual adoption audit report in future years. This process should include refinement of the adoption audit process in line with findings from the pilot and should ensure that it is appropriate for National Institute for Health and Care Excellence (NICE) medical technology guidance (in partnership with the Welsh NICE Health Network) and HTW's social care guidance (in partnership with Social Care Wales).
- Local health boards, WHSCC, and the specialist trusts should continue to work with HTW to support future adoption audit reports. This work should include discharging agreed actions around providing information on local audit processes and developing a community of practice to support adoption of guidance.
- Welsh Government should continue to support the HTW adoption audit as 'business as usual' and should confirm a timetable and publication framework for future annual reports. This work should include discussion of approaches to maximise the number of returns to ensure a complete picture of adoption in Wales can be provided. Welsh Government should also consider whether there are opportunities to support the adoption of HTW guidance and to resolve barriers to adoption that have been identified by the pilot.
- HTW should continue to work to identify additional stakeholders who can support adoption of guidance and ensure that the adoption audit process is as complete as possible.

Contents

List of abbreviations

Abbreviation	Full Text
ABUHB	Aneurin Bevan University Health Board
AHSCT	Autologous Haematopoietic Stem Cell Transplantation
BCUHB	Betsi Cadwaladr University Health Board
CGM	Continuous Glucose Monitoring
COVID-19	Coronavirus Disease
CPET	Cardiopulmonary Exercise Testing
CPR	Cardiopulmonary Resuscitation
CVUHB	Cardiff & Vale University Health Board
CTMUHB	Cwm Taf Morgannwg University Health Board
EDSS	Expanded Disability Status Scale
FIT	Faecal Immunochemical Testing
GUI	Guidance
HDUHB	Hywel Dda University Health Board
HTW	Health Technology Wales
LHB	Local Health Board
NICE	National Institute for Health and Care Excellence
MCC	Mechanical Chest Compression
PET	Positron Emission Tomography
PSMA	Prostate Specific Membrane Antigen
PTHB	Powys Teaching Health Board
SBUHB	Swansea Bay University Health Board
SNS	Sacral Nerve Stimulation
SOPOC	Single-Operator Per-Oral Cholangioscopy
WAST	Welsh Ambulance Services NHS Trust
WG	Welsh Government
WHSCC	Welsh Health Specialised Services Committee

1. Introduction

Health Technology Wales (HTW) was established in 2017 to provide a consistent and structured approach to assessment of non-medicine technologies in Wales as a result of a Welsh Government inquiry into "Access to Medical Technologies in Wales" [3]. The inquiry and subsequent recommendations highlighted that guidance produced by Health Technology Wales should have "Adopt or Justify" status and that the uptake of guidance should be audited to ensure equitable access to services. Health Technology Wales has become well established and after refining its approaches to identification and appraisal of medical technologies has turned to considering how the adoption of its national guidance can be best audited and monitored.

Adoption of HTW guidance is key to ensuring that there is access to evidence-based technologies and models of care and support and that their anticipated benefits are realised for people in Wales. Further, adoption of HTW guidance ensures that partners within industry can be confident that where they have embedded the collection of supporting evidence within development and demonstrated value of their products and services, innovations will become available within the health and social care system in Wales. It is therefore critical that HTW works to support adoption of guidance and audits the extent to which this has happened to assess the impact our work.

Over the past year, HTW has been working to develop an adoption audit process that includes reporting on adoption from relevant commissioning bodies, procurement services, local topic experts, industry and other partners, that can provide insights on adoption. This process has been informed by wide consultation to learn from approaches currently used by other bodies and ensure that engaging with the process would be feasible and acceptable for partners in Wales. The adoption audit process has now been piloted with a series of eight pieces of national guidance that have previously been published by HTW. The report presents the findings from this pilot of our adoption audit process and will be the first in a series of ongoing annual reports monitoring adoption of HTW guidance to be shared with Welsh Government and other stakeholders.

The report presents a summary of issues around adoption arising from response to the pilot and information on awareness, clarity and impact of HTW guidance on decision-making by relevant commissioning organisation. The purpose of this is to assess the extent to which HTW guidance has promoted innovation that improves care for people in Wales and also to support NHS partners to identify continuing variation in care and to work collaboratively to identify and design solutions.

More detailed information on responses for each of the eight guidance included in the pilot is also provided. A brief overview of the supporting methodology and example materials are available in the Appendix.

2. Summary of adoption audit findings

This pilot has allowed us to trial our adoption audit process with a series of previously published HTW guidance. The responses provided suggest that this process is appropriate to assess adoption of HTW guidance and provides valuable information that can help HTW refine our work and can help support wider assessments of how to further support adoption in Wales.

Over the past eighteen months, we have worked with each of the local health boards, specialised commissioning, and NHS trusts to develop relationships and ensure that our adoption work is feasible and acceptable. As a result of this work, we received at least partial responses from six

of the seven health boards, and from Welsh Ambulance Services NHS Trust (WAST) and Welsh Health Specialised Services Committee (WHSSC). The returns indicated that there was good awareness of HTW guidance, that the recommendations are generally clear, and that guidance is having an impact on decision-making. This is positive given that guidance included in this pilot was published in the early days of HTW's development and the pilot will help guide HTW's work by providing information on how awareness or clarity can be improved. For one of the guidance included in this pilot (single-operator per-oral cholangioscopy), a request for information was made to WHSCC based on our understanding of commissioning responsible. However, responsibility for commissioning remains with local health boards at present. We were not notified of this until shortly before the conclusion of the pilot so this guidance could not be included in figures reported below.

In some cases, responses clearly show that HTW guidance was adopted and had had a clear impact on decision-making (mechanical chest compression; faecal immunochemical testing; autologous haematopoietic stem cell transplantation). This was most evident for guidance on mechanical chest compression where HTW guidance supported decisions to reduce the number of devices purchased and use of specific criteria where the technology may have benefit. Evidence of impact on decision-making was also evident for other guidance, including on faecal immunochemical testing and autologous haematopoietic stem cell transplantation. Although in some of the cases, this impact may only have applied for some local health boards or not yet translated into access for patients due to lags with developing services.

In other cases, HTW guidance had been well received and there was an intention to adopt recommendations but barriers within the system could not be overcome (sacral nerve stimulation; gallium prostate specific membrane antigen-positron emission tomography (PSMA-PET)). A prime example of this was guidance for sacral nerve stimulation where most local health boards had not been able to develop services due to small patient numbers and a lack of expertise in their area. Respondents highlighted that consideration of regional or national provision would be beneficial and additional support would be needed for this to happen. Similarly, for guidance on PSMA-PET, there had been an intention to adopt guidance but a shortage of gallium isotopes and absence of manufacturing facilities in Wales meant that this has not been possible. Due to this, alternative approaches were being pursued.

Finally, there were some cases where HTW guidance appears to have had a limited impact. This may be because the technology already had widespread use prior to HTW guidance, for example continuous glucose monitoring in pregnancy. Alternatively, this may be due to guidance outlining that a technology shows promise but evidence was not sufficient to issue recommendations on routine adoption, for example cardiopulmonary exercise testing prior to major surgery.

Across cases where adoption had not been achieved, funding was not cited as a key barrier and there appeared to be a willingness from local health boards and other commissioning bodies to support business cases and provide funding for recommended technologies. In some cases where routine adoption had not been achieved, the local health boards had attempted to overcome barriers by referring to services in England and providing funding via these routes. Rather, barriers to adoption appeared to relate to issues that may need a strategic approach at the regional or national level and respondents were keen to support any developments that may come as part of highlighting this in the report.

Despite the success of the pilot, the absence of information from one of the local health boards and partial returns for several others has limited our ability to provide a full picture on adoption

of HTW guidance across Wales. HTW will continue to engage with stakeholders and work with Welsh Government to ensure that a full picture can be provided for future years.

2.1 Awareness of HTW guidance

For each of the guidance in the pilot, the nominated contact(s) for the relevant commissioning body were asked whether their organisation or relevant people within their organisation were aware of our guidance. Out of a total possible set of 31 responses, 22 responses across the seven included guidance were received. From these 22 responses, 15 (68%) responses indicated that there was awareness of guidance, five (23%) indicated that there was not awareness, one (5%) was unsure whether guidance was known of by their organisation, and one (5%) return did not provide an answer for this question. Given this pilot covers some of HTW's very first guidance, these numbers appear to be acceptable and indicate good awareness shortly after HTW's establishment.

Over the past four years, HTW has put an emphasis on developing partnerships across Wales and have increased the awareness of our guidance. Further as part of our adoption work, we have begun developing individual communications plans for each of the guidance to ensure that it reaches the relevant commissioners and other key stakeholders. Due to this, we anticipate in future years that awareness of our guidance at publication will be higher still.

Table 1. "Was your organisation aware of HTW guidance on this topic?"

Guidance for Local Health Boards				
	GUI003 SNS	GUI007 FIT	GUI012 CGM	GUI016 CPET
ABUHB	No return	Yes	No	No return
BCUHB	No return	No return	No return	No return
CVUHB	Yes	NA	Yes	No return
CTMUHB	No return	Unsure	No return	Yes
HDUHB	Yes	No	No	Yes
PTHB	Yes	Yes	Yes	Yes
SBUHB	No	Yes	Yes	No
Guidance for Welsh Ambulance Services NHS Trust (WAST)				
	GUI001 MCC	WAST does not have commissioning responsibility for other guidance in this report and were only asked for a return for GUI001		
WAST	Yes			
Guidance for Welsh Health Specialised Services Committee (WHSSC)				
	GUI005 PSMA	GUI019 AHSCT	WHSSC does not have commissioning responsibility for other guidance in this report and were only asked for a return for GUI005 and GUI019	
WHSSC	Yes	Yes		

AHSCT: autologous haematopoietic stem cell transplantation; CGM: continuous glucose monitoring; CPET: cardiopulmonary exercise testing; FIT: faecal immunochemical testing; PSMA: prostate specific membrane antigen; MCC: mechanical chest compression; SNS: sacral nerve stimulation

NA indicates that a return was provided but this question was not answered.

2.2 Clarity of HTW Guidance

Nominated contacts were also asked whether the recommendation(s) in the guidance was clear. Out of a total possible set of 31 responses, 22 responses across the seven included guidance were received. From these 22 responses, 15 (68%) responses indicated that guidance was clear, four (18%) indicated that it was not clear, and three (14%) did not provide an answer for this question. In general, it appears that HTW guidance is clear.

Responses suggested that guidance on cardiopulmonary exercise testing (HTW guidance 016) and autologous haematopoietic stem cell transplantation (HTW guidance 019) had problems with clarity. Specific issues for these guidance are discussed in more detail below.

Table 2. "Was the recommendation in the guidance clear?"

Guidance for Local Health Boards				
	GUI003 SNS	GUI007 FIT	GUI012 CGM	GUI016 CPET
ABUHB	No return	Yes	NA	No return
BCUHB	No return	No return	No return	No return
CVUHB	Yes	NA	Yes	No return
CTMUHB	No return	Yes	No return	Yes
HDUHB	Yes	NA	Yes	No
PTHB	Yes	Yes	Yes	Yes
SBUHB	No	Yes	Yes	No

Guidance for Welsh Ambulance Services NHS Trust (WAST)		
	GUI001 MCC	WAST does not have commissioning responsibility for other guidance in this report and were only asked for a return for GUI001
WAST	Yes	

Guidance for Welsh Health Specialised Services Committee (WHSSC)			
	GUI005 PSMA	GUI019 AHSCT	WHSSC does not have commissioning responsibility for other guidance in this report and were only asked for a return for GUI005 and GUI019
WHSSC	Yes	No	

AHSCT: autologous haematopoietic stem cell transplantation; CGM: continuous glucose monitoring; CPET: cardiopulmonary exercise testing; FIT: faecal immunochemical testing; PSMA: prostate specific membrane antigen; MCC: mechanical chest compression; SNS: sacral nerve stimulation

NA indicates that a return was provided but this question was not answered.

2.3 Impact of HTW guidance

Nominated contacts were also asked how much of an impact HTW guidance had within their organisation. This question was aligned with approaches for monitoring impact used in other similar initiatives. Out of a total possible set of 31 responses, 22 responses across the seven included guidance were received. From these 22 responses, six (27%) reported that guidance had no impact, eight (36%) that guidance had minor impact, six (27%) that guidance had moderate impact, and one (5%) that guidance had a major impact. One (5%) return was provided that did not answer this question.

The reasons given for the responses varied and there appeared to be a lack of uniformity in criteria used by respondents. Of note, guidance was often noted as having no impact because

the local health board was already providing access to the technology or provision was not their responsibility (i.e. for Powys Teaching Health Board (PTHB)). Considering this, it seems positive that even early HTW guidance is having an impact on decision-making in the vast majority of instances and has had a moderate or major impact in several cases.

Table 3. "How much of an impact did this HTW guidance have in your organisation?"

Guidance for Local Health Boards				
	GUI003 SNS	GUI007 FIT	GUI012 CGM	GUI016 CPET
ABUHB	No return	Minor	No impact	No return
BCUHB	No return	No return	No return	No return
CVUHB	Moderate	NA	Moderate	No return
CTMUHB	No return	No impact	No return	Minor
HDUHB	Minor	No impact	No impact	Minor
PTHB	Moderate	Moderate	Minor	No impact
SBUHB	No impact	Minor	Minor	Moderate

Guidance for Welsh Ambulance Services NHS Trust (WAST)		
	GUI001 MCC	WAST does not have commissioning responsibility for other guidance in this report and were only asked for a return for GUI001
WAST	Moderate	

Guidance for Welsh Health Specialised Services Committee (WHSSC)			
	GUI005 PSMA	GUI019 AHSCT	WHSSC does not have commissioning responsibility for other guidance in this report and were only asked for a return for GUI005 and GUI019
WHSSC	Minor	Major	

AHSCT: autologous haematopoietic stem cell transplantation; CGM: continuous glucose monitoring; CPET: cardiopulmonary exercise testing; FIT: faecal immunochemical testing; PSMA: prostate specific membrane antigen; MCC: mechanical chest compression; SNS: sacral nerve stimulation

NA indicates that a return was provided but this question was not answered.

3. Detailed information for guidance in the pilot

3.1 Mechanical chest compression (HTW Guidance 001)

3.1.1 Background

HTWs very first guidance was on the use of mechanical chest compression for use by the ambulance services to treat adults with out-of-hospital non-traumatic cardiac arrest. Key details and the guidance recommendation are below:

Technology:	Mechanical chest compression devices
Products:	LUCAS System (Jolife AB/Stryker); AutoPulse Resucitation System (ZOLL Medical)
Population:	Out-of-hospital non-traumatic cardiac arrest
Topic Proposer:	Welsh Ambulance Services NHS Trust (WAST)
Publication date:	February 2018

HTW advises that the routine adoption of mechanical chest compression devices across the ambulance service is not currently supported by available evidence

This recommendation was supported by high quality randomised controlled trials and meta-analyses that did not show benefit for two different forms of mechanical chest compression device when compared with manual CPR. Supporting evidence also suggested mechanical chest compression devices were not cost effective when used across the ambulance services. Please see HTW GUI001[4] for full details of the guidance and supporting HTW Appraisal Panel discussions.

3.1.2 Audit Findings

To support the adoption audit, the nominated contact for WAST provided information on adoption of this guidance and Procurement Services provided data relevant to purchasing of mechanical chest compression devices from identified manufacturers. A topic expert from the Emergency Medical and Retrieval Services was also contacted but did not provide a response.

WAST reported that guidance was discussed at clinical forums within the trust and helped decision-making. As a result, HTW guidance discouraging routine deployment was adopted and led to a large reduction in planned purchasing of mechanical chest compression devices. WAST did note that there were circumstances where use of mechanical chest compression devices may be beneficial and some use has continued if it fits within specific criteria. These criteria are: 1) where ongoing resuscitation during transportation to hospital is needed; 2) where rescuer fatigue or too few rescuers means prolonged resuscitation cannot be supported; 3) for difficult extractions where continuous resuscitation is not possible without a device. Use of mechanical chest compression under these criteria is reviewed after each episode. The criteria align with issues noted by experts in the HTW evidence appraisal report and guidance documentation.

WAST also noted that deployment of mechanical chest compression may have increased during the COVID-19 pandemic due to increased levels of fatigue during resuscitation in full personal protective equipment. This suggests that in this case their decision-making informed by both HTW guidance and other considerations left appropriate flexibility for this to occur.

Data provided by Procurement Services are consistent with information on purchasing provided by WAST.

3.2 Sacral nerve stimulation (HTW Guidance 003)

3.2.1 Background

HTW's third guidance was on sacral nerve stimulation for people with faecal incontinence that cannot be controlled with conservative management. Key details and the guidance recommendation are below:

Technology:	Sacral nerve stimulation devices
Products:	Interstim System (Medtronic); r-SNM System (Axonics)
Population:	People with faecal incontinence that cannot be controlled with conservative management
Topic Proposer:	Consultant Colorectal Surgeon, Cardiff & Vale University Health Board
Publication date:	June 2018

> HTW guidance is that the available evidence supports the use of sacral nerve stimulation to treat faecal incontinence, only where the condition has not responded to conservative management.
>
> Sacral nerve stimulation should only be offered to people with faecal incontinence in line with the criteria outlined in the National Institute for Health and Care Excellence Clinical Guideline 49 (Faecal incontinence in adults: management)[2].

This recommendation was support by evidence from randomised controlled trials and crossover studies that sacral nerve stimulation reduced the number of faecal incontinence episodes experienced by participants and evidence that it has the potential to be cost-effective where conservative treatment has not been of benefit. Please see HTW GUI003[5] for full details of the guidance and supporting HTW Appraisal Panel discussions.

3.2.2 Audit Findings

To support the adoption audit, the nominated contact for each of the local health boards was provided adoption audit questionnaires, the topic proposer was also contacted as an additional topic expert and data was requested from procurement. Four of the local health boards provided returns for this topic (Cardiff & Vale University Health Board (CVUHB), Hywel Dda University Health Board (HDUHB), Powys Teaching Health Board (PTHB), Swansea Bay University Health Board (SBUHB)) and data was provided by Procurement Services. Aneurin Bevan University Health Board (ABUHB), Betsi Cadwaladr University Health Board (BCUHB), and Cwm Taf Morgannwg University Health Board (CTMUHB) did not provide returns for this topic. The additional topic expert provided information based on their clinical expertise as part of their return for CVUHB. The questionnaires and data requests provided to each of these sources are provided as full examples in the methodology section.

Available returns from the local health boards highlighted that they were aware of the guidance and supportive of the recommendation. The return for CVUHB stated that a specialist service has been developed and that patients who have not benefitted from conservative management are now able to access sacral nerve stimulation, in line with guidance. However, HTW guidance on its own was not sufficient for this to happen and there was resistance due to the cost of developing the service. HBUHB and SWBUHB indicated that they supported the guidance and would like suitable patients to receive SNS but have not been able to develop a service due to the lack of infrastructure and specialist expertise and the low number of patients under the care of the local health board. PTHB indicated that due to the nature of their services, delivering SNS would not be an option but they have considered HTW guidance and are able to refer patients out of county to receive this service if needed. They are also to provide non-surgical remote stimulation.

Returns indicated that local health boards were aware of the service being available in CVUHB but that that service did not have capacity to accept patients from other parts of Wales. This meant that they have needed to explore referrals to sites in England with varying success. Several of the returns highlighted that a regional or national approach to commissioning this service would allow this guidance to be adopted but initial approaches to specialist commissioning had not been successful and there was a sense that people were unsure how this type of initiative could be supported.

Data from Procurement Services are consistent with the information provided by the local health boards. In addition, data suggests that ABUHB have taken a similar response to other local health boards and have made at least some referrals for SNS to services in England.

3.3 PSMA-PET (HTW Guidance 005)

3.3.1 Background

HTW's fifth guidance was on gallium- or fluorine-prostate-specific membrane antigen (PSMA) positron emission tomography (PET) radiotracers in the investigation of recurrent prostate cancer. Key details and the guidance recommendation are below:

Technology:	Prostate-specific membrane antigen (PSMA) positron emission tomography (PET) radiotracers
Products:	Gallium or Fluorine
Population:	Patients with suspected recurrent prostate cancer
Topic Proposer:	Director of Wales Research and Diagnostic PET Imaging Centre, School of Medicine Cardiff University.
Publication date:	December 2018

> ^{68}Ga PSMA PET is recommended if the service can be delivered at no greater cost than current standard care.
>
> The adoption of ^{18}F PSMA PET for the diagnosis of recurrent prostate cancer is not supported by the evidence

This recommendation was supported by evidence showing that ^{68}Ga PSMA PET has a higher sensitivity and specificity than other imaging modalities. However, there are important caveats

to the recommendation regarding cost due to the lack of evidence on comparative effectiveness compared to other tracers and uncertainty in the economic evidence. ^{18}F PSMA PET was not recommended due a lack of evidence. Please see HTW GUI005[6] for full details of the guidance and supporting HTW Appraisal Panel discussions.

3.3.2 Audit Findings

To support the adoption audit, the nominated contact for Welsh Health Specialised Services Committee was provided with and returned the adoption audit questionnaire. Several additional topic experts were contacted to provide supporting information and one provided a response.

WHSCC indicated that they were aware of the guidance as commissioners of PET scanning in Wales. HTW guidance was considered during development of PET commissioning policy, providing additional evidence that reinforced the pre-existing direction of travel. WHSSC indicated that they intended to adopt the guidance. However, there is a worldwide shortage of gallium isotopes and ^{18}F continues to be currently in use at all three scanning sites in Wales.

The response from the topic expert supported this account and stated that use of ^{68}Ga would not be feasible without a government-led national investment in manufacturing of radiopharmaceuticals, as has happened in Scotland. The expert also suggested that the field is rapidly changing and stated ^{18}F is appropriate for use going forward, which would be in line with other sites in the UK and across Europe.

3.4 Faecal immunochemical testing-based prediction tools (HTW Guidance 007)

3.4.1 Background

HTW's seventh guidance was on faecal immunochemical test-based prediction tools for the assessment of people presenting to primary care with symptomatic bowel disease. Key details and the guidance recommendation are below:

Technology:	Faecal immunochemical testing (FIT)-based prediction tools
Products (FIT tests):	HM-JACKarc system (Kyowa Medex/Alpha Laboratories Ltd)
	FOB Gold system (Sentinel/Sysmex, Sentinel Diagnostics)
	OC-Sensor (Eiken Chemical Co./ MAST Diagnostics)
	RIDASCREEN Hb and Hb/Hp test (R-Biopharm)
Prediction tools:	COLONPREDICT; FAST
Population:	People with lower gastrointestinal symptoms who may be appropriate for colonoscopy
Publication date:	February 2019

HTW supports the adoption of FIT as recommended by NICE Diagnostic Guidance 30 but proposes that a prospective and structured evaluation of the clinical and cost benefits of combining FIT with the prediction tools FAST and COLONPREDICT be incorporated into the implementation strategy in NHS Wales.

This guidance reiterated the approach recommended by NICE and due to uncertainty in evidence relating to the additional benefit of prediction tools recommended they be incorporated into implementation with evaluation. Please see HTW GUI007[7] for full details of the guidance and supporting HTW Appraisal Panel discussions.

3.4.2 Audit Findings

To support the adoption audit for this topic, the nominated contact for each of the local health boards was provided questionnaires, along with several topic experts. We did not make a data request to procurement for this topic due to more limited information being held for services provided in primary care. We received a response from six of the local health boards (ABUHB, CTMUHB, CVUHB, HDUHB, PTHB, SBUHB) with the respondent for CVUHB also providing an additional perspective based on their work with the National Endoscopy Programme. BCUHB did not provide returns for this topic.

ABUHB indicated that they adopted the approach recommended by NICE after publication of HTW guidance. This contact reported that the HTW guidance had been helpful in countering resistance to implementation of the NICE recommendations and it now appears to have reached a steady state across primary care. However, they reported that prediction tools had not been introduced due to the uncertainty in the evidence and awareness that evaluations were underway elsewhere in Wales. CTMUHB also indicated that they were monitoring developments on prediction tools and had focused on delivering a service in line with HTW and NICE guidance. HDUHB indicated that they were unaware of guidance when published but became aware later when reviewing pathways. The response suggested that they had implemented FIT within secondary care and use in primary care is still in development. This was partly due to there being a lack of and due to lack of laboratory capacity for processing of tests but also related to attempts to develop a unified pathway for all symptomatic patients. SBUHB indicated that FIT had not been implemented in primary care but there was currently a business case under consideration. This response also indicated that a priority was embedding FIT and use of prediction tools would only be considered after this was in place. PTHB indicated that they rely on services commissioned by other local health boards in Wales and NHS trusts in England but they have encouraged these services to adopt this recommendation.

The topic expert was able to provide a perspective for both CVUHB and the National Endoscopy Programme. They highlighted that the recommendation from NICE has now largely been adopted within CVUHB but there is continuing variation in application across local health boards and across primary and secondary care services within local health boards. Evaluation of prediction tools has been led by the National Endoscopy Programme in conjunction with support from local health boards and analysis of data is currently underway. In general, the topic expert stated that HTW guidance had had a major impact by reducing resistance based on uncertainty regarding the evidence base.

3.5 Continuous glucose monitoring (HTW Guidance 012)

3.5.1 Background

HTW's twelfth guidance was on continuous glucose monitoring (CGM) in pregnant women with type 1 diabetes. Key details and the guidance recommendation are below:

Technology:	Continuous glucose monitors
Products:	Enlite Sensor (Medtronic), Eversense sensor (senseonices Holdings, distributed by Roche), G6 sensor (Dexcom)
Population:	Pregnant women with type 1 diabetes
Topic Proposer:	Consultant in Diabetes, Cardiff and Vale UHB and National Clinical Lead for Diabetes in Wales
Publication date:	October 2019

HTW Guidance: The case for adopting continuous glucose monitoring in pregnant women with type 1 diabetes is supported by the evidence.

This recommendation was supported by a series of randomised controlled trials that showed that continuous glucose monitoring led to improvements in maternal glycaemic control and reduction in the incidence of pre-eclampsia and reduction in neonate hypoglycaemia. Further, economic evidence suggested cost-savings due to reductions in neonatal intensive care admission. Please see HTW GUI012[8] for full details of the guidance and supporting HTW Appraisal Panel discussions.

3.5.2 Audit Findings

To support the adoption audit for this topic, the nominated contact for each of the local health boards was provided questionnaires, along with several topics experts. We received a response from five of the local health boards (ABUHB, CVUHB, HDUHB, PTHB, SBUHB) and one local expert. We also received data from Procurement Services on purchasing of CGM devices and related items. BCUHB and CTMUHB did not provide returns for this topic

CVUHB and HDUHB indicated that they were already routinely using CGM prior to the HTW appraisal and have continued to do so since. HDUHB indicated that this was despite lack of awareness of the HTW guidance. SBUHB highlighted that they are aware of the HTW guidance but there is variability across pregnancy services within the board. At one site, CGM has been routinely used since before the publication of HTW guidance but at another site, monitoring is usually completed with Libre 2 sensors that have been made available since publication of HTW guidance on flash glucose monitoring (FGM). ABUHB indicated that they were not aware of HTW guidance on this topic. This local health board indicated that they use CGM in select patients with hypoglycaemia unawareness or difficult to control Type 1 diabetes but not as a routine response. They suggest that they have had success with flash glucose monitoring as a routine approach and noted that the lack of comparative effectiveness evidence on the approaches means it is difficult to conclude that routine adoption of CGM is justified. PTHB indicated that pregnant women with type 1 diabetes are referred to out of county consultant-led services and their response did not indicate whether they were aware of use of CGM in these services.

The additional topic expert supported these accounts and indicated that they strongly agreed that CGM for pregnant women with type 1 diabetes had been routinely adopted in Wales. They indicated that this technology was already in use in some centres but the guidance reinforced the evidence and may have encouraged other centres to embrace its use.

Data from Procurement Services are consistent with the information provided by local health boards and suggest that CGM was in use prior to HTW guidance and has continued since. From procurement data, it is possible to see that CGM devices are also in use in both BCUHB and CTMUHB. However, it is not possible to assess with procurement data whether use of CGM across the local health boards was in relation to the relevant population for this guidance (i.e. pregnant women with type 1 diabetes).

3.6 Single-operator per-oral cholangioscopy (HTW Guidance 015)

HTW's fifteenth guidance was on single-operator per-oral cholangioscopy (SOPOC) for the evaluation and treatment of hepato-biliary-pancreatic disorders. Key details and the guidance recommendation are below:

3.6.1 Background

Technology:	Single-operator per-oral cholangioscopy (SOPOC)
Population:	People with hepato-biliary-pancreatic disorders
Topic Proposer:	Welsh Health Specialised Services Committee (WHSSC)
Publication date:	January 2020

Single-operator per-oral cholangioscopy (SOPOC) shows promise for the evaluation and treatment of hepato-biliary-pancreatic disorders, but the evidence is insufficient to support routine adoption. SOPOC should instead be considered for the following populations:

1. For the diagnosis of indeterminate strictures, where conventional ERCP is inconclusive or inappropriate.

2. For the therapeutic removal of difficult bile duct stones, where conventional ERCP methods are unsuccessful or inappropriate.

Please see HTW GUI015[9] for full details of the guidance and supporting HTW Appraisal Panel discussions.

3.6.2 Audit Findings

To support this guidance, we contacted the nominated contact for WHSCC and additional topic experts. WHSCC responded to this request and provided information that WHSCC currently commission hepatocellular surgery and that they may take on commissioning of pancreatic surgery in the future, but to date this has fallen to local health boards. This information was provided shortly before preparation of this report and there has not been time to approach contacts from the local health boards to assess adoption. Therefore, information for this guidance is limited to the received response from one of the topic experts and from procurement.

The topic expert indicated that SOPOC has been routinely adopted for the indication in the guidance for cases that they were aware of. They indicated that there has been some use for other populations that were not included in the recommendation. The expert highlighted that HTW guidance has made funding of referrals straightforward but building a case for investing in additional equipment remains difficult.

Data from Procurement Services suggests that devices to support SOPOC have begun to be used in ABUHB since publication of this guidance. However, it is not possible to assess whether use is for the recommended population or whether AHUHB is providing services to other local health boards.

3.7 Cardiopulmonary exercise testing (HTW Guidance 016)

3.7.1 Background

Key details and the guidance recommendation are below:

Technology:	Cardiopulmonary exercise testing (CPET)
Products:	Specific products not identified (ergometer or treadmill)
Population:	Patients undergoing major intra-abdominal surgery
Topic Proposer:	Consultant Anaesthetist, Cardiff and Vale University Health Board
Publication date:	July 2020

Cardiopulmonary exercise testing (CPET) shows promise when used to inform decision-making prior to major intra-abdominal surgery. The evidence shows that the use of CPET in addition to standard risk assessment improves the identification of patients at increased risk of surgery related morbidity and mortality and facilitates the planning of peri-operative care. The evidence therefore partially supports the adoption of CPET for people undergoing major intra-abdominal surgery.

Please see HTW GUI016[10] for full details of the guidance and supporting HTW Appraisal Panel discussions.

3.7.2 Audit Findings

To support the adoption audit for this topic, the nominated contact for each of the local health boards was provided questionnaires, along with several topic experts. We received a response from four of the local health boards (CTMUHB, HDUHB, PTHB, SBUHB) and two local experts. ABUHB, BCUHB, and CVUHB did not provide returns for this topic. It is important to note that guidance for this topic noted that CPET shows promise and that evidence partially supports adoption but did not recommend routine adoption of CPET. The returns below should be interpreted in this light and decisions not to implement CPET would be consistent with the content of our guidance.

CTMUHB provided a response that related to only one of their three sites for which this guidance would be relevant. They indicate that prior to guidance their site had already integrated CPET for

their biggest intra-abdominal surgeries but no more specific detail on surgery type was available. HDUHB and SBUHB indicated that they are not currently using CPET for major intra-abdominal surgery. SBUHB suggested it is used for abdominal aortic aneurysm but has not been extended for use with other types of major intra-abdominal surgery, including colorectal surgery. However, there are plans for evaluation of CPET with a wider group of patients in development. HDUHB indicated that through the pandemic they have been risk-stratifying patients with tools other than CPET and this had been seen as acceptable with low rates of major complications. PTHB indicated that they do not undertake major abdominal surgery so this guidance would not be applicable and they had not discussed it in a relevant forum due to lack of expertise.

Two additional experts responded from CVUHB that did not provide a response from their nominated contact. These experts both indicated that CPET was used for the majority of patients at their site prior to HTW guidance and this approach has continued. They noted that some patients having major intra-abdominal surgery, such as younger patients needing non-cancer surgery and patients having hysterectomies, do not receive CPET.

Two of the responses for this guidance noted that the wording was not clear and were unsure whether it supported implementation or not or whether it supported additional research. One of the responses added that the evidence base appeared mixed and this had presented challenges for developing consensus between clinicians.

3.8 Autologous haematopoietic stem cell transplantation (HTW Guidance 019)

3.8.1 Background

HTW nineteenth guidance was on autologous haematopoietic stem cell transplantation to treat people with previously treated relapsing remitting multiple sclerosis. Key details and the guidance recommendation are below:

Technology:	Autologous haematopoietic stem cell transplantation (AHSCT)
Population:	People with previously treated relapsing remitting multiple sclerosis
Topic Proposer:	Welsh Health Specialised Services Committee (WHSSC)
Publication date:	August 2020

> The evidence supports the routine adoption of autologous haematopoietic stem cell transplantation (AHSCT) for people with relapsing-remitting multiple sclerosis (RRMS), in patients who have recurrence of symptoms despite previous treatment with disease modifying therapies (DMTs).

This recommendation is supported by evidence suggesting AHSCT increases progression-free survival, slows onset of disability, and improves quality of life. Economic evidence also suggests that AHSCT is more effective and less costly for people with highly active remissions. Please see HTW GUI019[11] for full details of the guidance and supporting HTW Appraisal Panel discussions.

3.8.2 Audit Findings

WHSSC proposed this topic to HTW and were engaged with the appraisal prior to development of the guidance. In their response for the adoption audit, they state that adopting HTW guidance on AHSCT was recommended as a high priority in their internal processes and funding was approved in early 2021. Development of a commissioning policy is ongoing and assessments are still being made on whether there is sufficient capacity to deliver a service in Wales or whether there would be a need to commission from providers in England. WHSCC state that the final policy should be available in summer 2022.

Responses from the two topic experts are in line with the response from WHSCC and state that development of a service to provide AHSCT is underway but this has not yet been commissioned. The responses highlight that this process has been slow and patients have not been able to access the treatment in the interim, despite the option of referring to services in England.

Regarding the clarity of HTW guidance, WHSCC noted in their response that members of their expert advisory group felt that the wording of the guidance was not a good descriptor of the eligible population. Rather than recurrence of symptoms, it was felt that a relapse confirmed by clinical or radiological evidence of inflammatory activity or by Expanded Disability Status Scale (EDSS) score would be more appropriate.

4. Proposed Future Directions

Potential actions emerging from the HTW adoption audit pilot are outlined below according to the relevant organisation.

Rationale	Actions
For Health Technology Wales	
• Responses indicated that the pilot adoption audit process was feasible and acceptable. The audit methods yielded valuable information to contextualise adherence to the 'Adopt of Justify' status accorded to HTW guidance.	• HTW should mainstream the adoption audit and ensure that necessary actions are taken to support an annual adoption audit report in future years • HTW should also refine the adoption audit methodology to ensure it is fit for purpose to assess the uptake of NICE medical technology guidance (in partnership with the Welsh NICE Health Network) and HTWs social care guidance (in partnership with Social Care Wales).
• The response rate for the audit was respectable but missing returns mean there is an incomplete picture of adoption in Wales. In some cases, this may have been due to nominated contacts in the local health boards and HTW both approaching local experts and uncertainty around which form is appropriate.	• HTW should continue to engage with each of the local health boards, specialised commissioning, and specialist trusts to ensure that relationships to support the adoption audit report are further developed and maintained. • HTW should adapt adoption audit processes to ensure that the roles of nominated contacts in commissioning bodies and additional experts is clear and relevant information is returned.

Rationale	Actions
• Generally, there was good awareness of HTW guidance, the guidance was clear, and was having at least some impact in Wales. Despite these positive findings, there was some lack of awareness, poor clarity, or lack of impact in some cases. There also appeared to be variable understanding of the intention of the impact question.	• HTW should continue to develop our communications strategies to ensure that guidance is disseminated and there is early awareness after publication. HTW should also consider additional avenues for disseminating guidance across key national peer groups and policy leads. • HTW should investigate further the two pieces of guidance felt not to offer sufficient clarity to identify specific improvement suggestions. • HTW should ensure that the purpose of the impact question is clarified for future iterations of supporting materials for the adoption audit
For local health boards, specialised commissioning, and specialist trusts	
• Pump-priming funding provided to Local Health Boards (LHBs)/Trusts was successfully deployed to facilitate development of local processes to support audit of HTW and other guidance.	• LHBs, WHSCC, and the specialist trusts should provide a simple descriptor of their locally agreed HTW audit process, as agreed as part of the funding they received to develop their local approach. • LHBs, WHSCC, the specialist trusts with support from HTW should continue to develop a community of practice (e.g. via the Welsh Audit Management and Tracking software user group) to share intelligence and continually refine and improve processes to support adoption of guidance. • LHBs, WHSCC, the specialist trusts and HTW should work together to identify topics from priority areas that are likely to have strong stakeholder interest and wide support for adoption of guidance.
For Welsh Government	
• Reponses indicated that the pilot adoption audit process was feasible and acceptable. The audit methods yielded valuable information to contextualise adherence to the 'Adopt of Justify' status accorded to HTW guidance.	• Welsh Government (WG) should work with HTW to support mainstreaming of the adoption audit as a business as usual activity. • WG should confirm a timetable and publication framework for future annual reports.
• The response rate for the audit was respectable but missing returns mean there is an incomplete picture of adoption in Wales	• WG should work with HTW and other partners to discuss approaches to maximising returns. This could be through a number of approaches, such as, encouraging engagement through national peer groups or other ways of formalising requirements to provide returns including making reference to the adoption audit in integrated medium term plan

Rationale	Actions
• Return on the investment in HTW appears to be high, in terms of utility and adoption of the national guidance prepared. However, in some cases adoption is variable across Wales or has not been achieved and there is scope to improve on this.	• WG should consider whether an All-Wales strategy for adoption of innovative technologies would be beneficial and reduce variations in access after national guidance is published. This could include consideration of whether novel or existing funding mechanisms could incentivise adoption of technologies • WG should consider whether they can help resolve barriers to adoption of HTW guidance identified in this report. This may include exploring regional or national approaches to commissioning, supporting the development of infrastructure to support use of technology. • WG should consider whether commissioners can be encouraged to ensure that adoption is not delayed by internal processes and that duplication of decision-making in different settings is avoided as far as possible.
Other	
• It appeared that there were significant barriers to conducting further resource or collection of real world evidence where this was advised within guidance.	• HTW should work with WG, Health and Care Research Wales, and others to facilitate signposting to research and evaluation funding sources where HTW has indicated that further research or collection of local 'real world evidence' is advisable.
• The adoption audit pilot was based on engagement with a wide range of stakeholders. However, there may be additional stakeholders who could help strengthen adoption of HTW guidance.	• HTW should work with WG, clinical networks, and other to explore how adoption could be supported by a wider range of stakeholders. The HTW Stakeholders' Forum may be an appropriate

Actively monitoring the adoption of medical technologies with supportive evidence that clearly demonstrates care system and citizen benefits has, until now, been a critical missing step in ensuring an all-Wales approach to the routine and equitable adoption of and access to clinical and cost-effective care technologies. The HTW adoption audit pilot has evidenced that this is both feasible and acceptable. It firmly embeds HTW in the Welsh life science ecosystem with a central role to support innovation and investigate the value and impact that advances in medical technology offer. Further, it actively supports and reinforces multiple ambitions outlined in the health and social care policy agenda for Wales, specifically: ensuring prudent care[12]; recognising the central role of technology[3]; enhancing the wellbeing of citizens[13, 14]; demonstrating the socioeconomic duty[15]; transforming care services[16, 17]; encouraging a whole systems approach[17]; and fostering a learning health and care system[18].

HTW has previously demonstrated the significant positive impacts that adoption of its national guidance offers[19]. Squaring the circle to ensure that the high-quality guidance produced by HTW and NICE is fully utilised and adopted discharges the policy ambition to achieve this set out in

the 2014 inquiry into access to medical technologies[3] and maximises the return on the investment in Health Technology Wales. Finally, it places Wales in the vanguard of these efforts both across the United Kingdom and internationally.

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Appendix I: Methodology

Health Technology Wales has developed the pilot process used in this audit with a wide range of partners. This has allowed us to learn from approaches used by other organisations in Wales and to work with nominated contacts from each of the local health boards and other commissioning bodies. These contacts were provided by each local health board and other commissioning body at the request of the All Wales Medical Directors Peer Group and were nominated due to their work on a relevant committee that supports the adoption of guidance or other innovations.

Eight guidance to be used in pilot were selected from a wider set of guidance that have been published previously. These guidance were selected to ensure that the pilot sample reflected the varied nature of technology within HTWs remit to allow us to test whether our process was appropriate. In particular, we aimed to select guidance that have different funding responsibility (e.g. local health boards, WHSCC) different types of technology (e.g. devices, diagnostics) different areas of health, and different guidance outcomes (i.e. routine adoption, not for routine adoption).

After the eight guidance were selected, adoption audit plans to be used in the pilot for each were developed. This included considering who the relevant commissioners to contact would be, whether procurement would hold useful data to indicate adoption, and which additional topic experts may be able to provide a wider picture. According to this plan, a series of questionnaires and procurement data requests were developed for each of the guidance and provided to relevant contacts. Examples of these materials for guidance on sacral nerve stimulation are available in full below.

Over the coming years, other HTW guidance published prior to this pilot will be audited retrospectively. In future, adoption audit plans will be developed prospectively and will be reviewed by the HTW Appraisal Panel at the time guidance is agreed. Further materials will then be developed and they will be included in the adoption audit after an appropriate period of time to allow adoption has passed.

Overarching timelines for the HB / Trust audit return were as follows:

27/11/2020:	Deadline for Medical Director nominations for HB / Trust contacts
09/12/2020:	Introductory email to HB contacts
15/01/2021:	Planned Stakeholder Forum meeting (cancelled due to C19)
07/05/2021:	Meeting with HB / Trust contacts to discuss process
04/11/2021:	Funding support offer to HB/ Trust contacts, deadline 13/12/2022
24/11/2021:	Questionnaires sent out, deadline 18/02/2022
07/12/2021:	Invite to feedback/progress meeting on 13/01/2022 (meeting cancelled due to C19, individual sessions offered)
07/01/2022:	First reminder for response sent
04/02/2022:	Second reminder for response sent
22/02/2022:	Follow up email to any non-responders (further individual follow up as required)

Appendix II: Full adoption audit materials for sacral nerve stimulation (HTW guidance 003)

Adoption audit questions for nominated contacts in each local health board

As the nominated lead for the adoption audit for your organisation, we would be grateful if you could provide information for the following questions.

Where possible, we would be grateful if you could attach appropriate supporting information to your response. For example, service specification and/or commissioning policy, findings of internal audits, etc.

Awareness of guidance		
1. Was your organisation aware of HTW guidance on sacral nerve stimulation?	*Yes* *No* *Unsure*	*Comments:*
2. Was the recommendation in the guidance clear?	*Yes* *No*	*Comments:*
3. Did your organisation intend to adopt the recommendation from HTW guidance on sacral nerve stimulation?	*Yes* *No* *Unsure* *Not relevant (proceed to Q11)*	*Comments:*
4. If your organisation did not intend to adopt this HTW guidance, what was the justification for this?	*Comments:*	
Response to guidance		
5. Was a business case developed to support funding in response to this HTW guidance?	*Yes* *No* *Unsure*	*Comments:*
6. Did service specifications and/or commissioning policy change in response to this HTW guidance?	*Yes* *No* *Unsure*	*Comments:*
7. Other than changing service specifications and commissioning policy, did your organisations take	*Yes* *No*	*Comments:* *If yes please provide details*

other actions in response to this HTW guidance?	*Unsure*	
8. Has your organisation audited use of sacral nerve stimulation devices in response to HTW guidance?	*Yes* *No* *Unsure*	*Comments:* *If yes please provide details*
9. To what extent would you agree with the following statement: Use of sacral nerve stimulation to treat faecal incontinence has been routinely adopted in your organisation, only where the condition has not responded to conservative treatment.	*Strongly Agree* *Agree* *Neutral* *Disagree* *Strongly disagree*	*Comments:*
10. Sacral nerve stimulation can also be used for populations who have not yet tried, or not yet failed conservative management. The HTW guidance for this technology recommended that it is only used in populations who have failed conservative management. Are you aware of use of sacral nerve stimulation for populations outside of this recommendation?	*Yes* *No* *Unsure*	*Comments:* *If yes please provide details*
Impact of guidance and feedback		
11. How much of an impact did this HTW guidance have in your organisation?	No impact (not considered) Minor impact (considered but did not inform decision making) Moderate impact (considered and had moderate impact on decision making)	*Comments:*

	Major impact (considered and had major impact on decision making)	
12. Do you have any other comments or reflections on this guidance?	*Comments:*	

Adoption audit questions for topic experts

Due to your involvement as an expert during the Evidence Appraisal, we would be grateful if you would be able provide information on the following questions:

1. To what extent would you agree with the following statement: Use of sacral nerve stimulation to treat faecal incontinence has been routinely adopted in Wales, only where the condition has not responded to conservative treatment.	Strongly Agree Agree Neutral Disagree Strongly disagree	*Comments:*
2. Sacral nerve stimulation can also be used for populations who have not yet tried, or not yet failed conservative management. The HTW guidance for this technology recommended that it is only used in populations who have failed conservative management. Are you aware of use of sacral nerve stimulation for populations outside of this recommendation in Wales?	Yes No Unsure	*Comments:* *If yes please provide details*
Impact of guidance and feedback		
3. How much of an impact did this HTW guidance have in Wales?	No impact (not considered) Minor impact (considered but did not inform decision making) Moderate impact (considered and had moderate impact on decision making) Major impact (considered and had major impact on decision making)	*Comments:*
4. Do you have any other comments or reflections on this guidance?		

Request for procurement data

We would be grateful if you could provide time series data for the following:

If this data is not held, please do let us know.

Technology Name:

Sacral Nerve Stimulation Devices

Indication and Setting:

Faecal incontinence and Colorectal Surgery

Known systems or products:

Interstim System (Medtronic)

r-SNM System (Axonics)

Data items[1]:

Monthly spend by HB

Monthly volume / usage by HB

Time period[2]:

From June 2017 to June 2019 (guidance issued in June 2018)

Notes:

[1] HTW will provide an annual report to Welsh Government and NHS Wales on adoption of our guidance. HTW is conscious of the commercial sensitivities surrounding spend and volume of use of technologies and the ability to calculate unit costs from this data. HTW will assess whether spend or volume of use provides the best indicator of adoption and will include only one of these indicators in reports, which may be publicly available

[2] HTW is aware that time trends in procurement have been disrupted by the pandemic. In this case, the time trend ends early enough for this to not be considered a risk.