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Research & Evaluation Framework

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Introduction

This Research and Service Evaluation Framework is developed by Technology Enabled Care (TEC) Cymru's research and evaluation team and is based upon the team's own knowledge and experiences. The framework has six sections:

- **Section 1:** What is Research & Service Evaluation?
- **Section 2**: What is Quality Improvement?
- **Section 3**: TEC Cymru's Four-Step Phased Approach
- **Section 4**: Using Mixed Methodologies
- **Section 5**: Using Patient & Public Involvement (PPI)
- **Sections 6**: Useful Links & Templates

The framework provides 'hyperlinks' throughout for additional information and points of reference.

1. What is Research & Service Evaluation?

Why use a Research and Evaluation Framework?

This framework has been created to support anyone undertaking a digital transformation in the use of research and service evaluation methods to inform decision making, justification, and to measure whether value has been achieved.

Historically, many projects and services have been undertaken without an approach to research and service evaluation, resulting in a lack of evidence, lessons learned, and documentation of their success (or failure) to inform future investment.

This framework will be shared, tested and iterated over time with digital transformation teams – it is a work in progress!

What is Research & Service Evaluation?

Research and service evaluation are often discussed in very similar ways, in that they both adopt similar methodologies to collect data and seek to answer a question. However, they are very different disciplines, with different aims, design, focus, motives and end-results, and therefore it is important to distinguish between the two to avoid confusion and complement overlap. As shown below in Table 2.

The Health Research Authority in the UK has a useful online decision-making tool to help people determine if their work sits under a research or service evaluation umbrella—see here.

A helpful definition of research is: *“Research involves the attempt to extend the available knowledge by means of a systematically defensible process of enquiry.”* (Clamp et al., 2004).

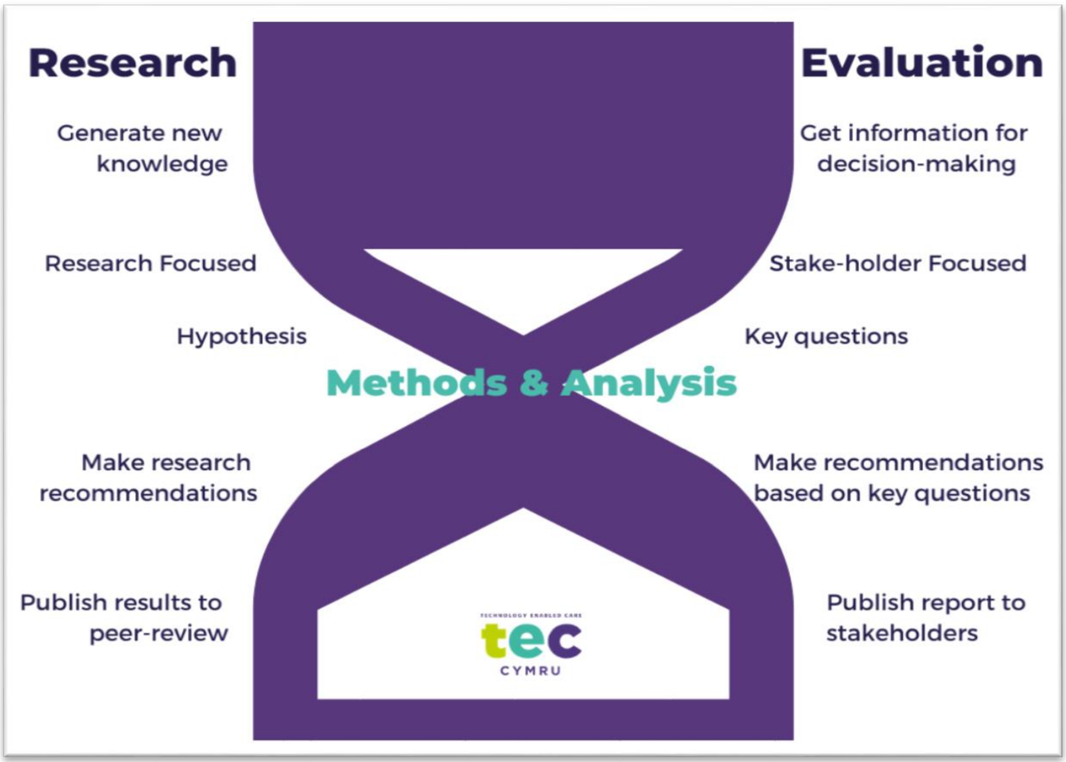
A helpful definition of evaluation is: *“Evaluation is a systematic assessment of the design, implementation and outcomes of an intervention”* (Magenta Book, 2020).

Table 2: Research & Evaluation

Research	Evaluation
To ‘prove’	To ‘improve’
To test theory and produce generalizable knowledge and findings (representative of populations)	To judge merit or worth of a single intervention/programme or model (representative of programme)
Scientific inquiry based on intellectual curiosity and expertise	Policy or intervention/programme interests of stakeholder paramount
Questions originate with expertise and disciplines	Questions originate with key stakeholders & primary intended ‘users’ of findings
Advances broad knowledge and theory	Provide information for decision making on specific intervention/programme
Controlled setting (e.g., people, timelines, resources)	Non-controlled setting Conducted within changeable settings (e.g., people, timelines, resources)
Quality & importance judged by peer-review & research expertise	Quality & importance judged by stakeholders & ‘users’ of findings to take action/make decisions
Ultimate test of ‘value’ is contribution of knowledge / to prove	Ultimate test of ‘value’ is usefulness to improvement
Did it work? (hypothesis)	Is it working? (key questions)

Research and service evaluation are similar, yet mutually independent. They share similar steps in their process and can complement each other well. As shown below in Diagram 1, the difference occurs at the start and finish of the process, whereas the similarities sit within the core (methods/analysis).

Diagram 1: Research & Evaluation Similarities and Differences



The aim of research is often focused on producing generalizable knowledge, which is empirical, theoretical, and controlled by the researchers (non-bias on findings). The aim of service evaluation is generally focused on specific and applied knowledge and aims to draw evaluative conclusions about quality or worth, and is controlled by those funding or commissioning the evaluation (more bias on findings). Evaluation has two main uses – accountability to funders and stakeholders by providing evidence of a project's overall impact and cost effectiveness; and learning by identifying what can be improved to gain greater understanding of a project and develop evidence for future projects.

To get the best out of a research and evaluation component of an intervention/programme, using both approaches can have many advantages, as standalone, they can have limitations, e.g., evaluation that is not research involves making judgements without systematic collection of data. Research that is not evaluation can take a lot of time and cost to design and prepare, and often unable to present any outcomes until the end of the process, which makes improvements along the way impossible. An example of an overlap methodology/analysis which complement each other well is a Four-Phased Quality Improvement (QI) Approach. This is discussed in the next sections.

For more information on 'what is evaluation' and 'what to consider when planning an evaluation', watch these short videos:

What is Evaluation?

What to consider when planning an evaluation?

2. What is Quality Improvement (QI)?

Quality Improvement (QI) is a systematic approach to improvement that uses specific methods and techniques to improve quality. The Health Foundation's publication "*Quality Improvement Made Simple*" is a helpful read for those who are new to this way of working and can be found here. Also, see how QI is being used in Wales here.

An essential part of the success and sustainability of QI is the way it is implemented, and the approaches used. The key elements to achieve the best outcomes are the combination of 'change' (the improvement), the 'method' (the approach/the tools) and paying close attention to the 'context' and 'environment' in which the change is taking place (the people/the place).

There are many types or 'brands' of QI to choose from, using a wide range of methodologies and approaches, but many share the following principles to ensure that the 'change' is successfully implemented. These include:

- Understanding the problem (and existing data).
- Understanding the processes, systems and pathways within the service.
- Understanding the demand, capacity & flow of the service.
- Understanding the best approach/tools to bring about 'change' e.g., patient/professional participation, clinical engagements, leadership.
- Measurement for improvement, often using statistical process control charts.
- Evaluating the impact of the 'change' through qualitative and quantitative measures.
- Understanding the psychology of change and how to lead a change
- Understanding the impact of complexity and the adaptations required to meet cultural and contextual differences.

However, how the implementation of the 'change' is managed will depend on the 'context' of the service, and this in particular needs careful consideration, and 'quality' checks throughout.

Six Dimensions of Improving Quality

The Institute of Medicine (IOM) suggests that improving quality in healthcare generally involves making it Safe; Effective; Patient-Centred; Timely; Efficient and Equitable.

Table 2 presents the six IOM dimensions and explains why they are considered primary priorities for any NHS intervention/programme and its Research & Evaluation component.

Table 2: Six Dimensions of Quality Improvement

SAFE:	Avoid harm to patients from care and services that is intended to help them.
EFFECTIVE:	Provide care and services based on robust evidence which produce clear benefit and improved outcomes.
PATIENT-CENTRED:	Establish equal partnerships between professionals and patients to ensure patients' needs and preferences are met, and their voices are heard.
TIMELY:	Reduces wait times and delays which may cause harm.
EFFICIENT:	Avoid wasting time, cost & resources.
EQUITABLE:	Provides care that does not vary in quality because of a person's characteristics – equal to all.

Please note: *To ensure that all the six QI dimensions are met, a four-phased research & evaluation approach (discussed in Section 3) would ideally be adopted, using mixed methodologies (discussed in Section 4) and patient and public involvement (PPI) (discussed in Section 5).*

Quality Improvement Approaches & Principles

There is a wealth of QI technical methodologies, many of which originated from use in the post war industry and have subsequently been adapted for use within healthcare. Despite the different names of the QI approaches, most approaches share underlying principles, and many QI methodologies use the same key tools, such as the simple Plan Do Study Act (PDSA) cycle that is described below. Some healthcare organisations choose to use a single systematic QI method, but most NHS organisations tend to choose the 'best fit' method for their context. In TEC Cymru some of the QI approaches and tools that are frequently used are also described below.

Experience-Based Co-Design

This is a QI approach to 'improving patient's experience' of services, through patients and professional partnership to design services or pathways.

Data is gathered through surveys, in-depth interviews, observations and groups discussions (e.g., focus groups) and are analysed to identify 'touch points' (or themes) – which are aspects of the service that are of significance. A link to the toolkit and useful instruction videos is here.

Model for Improvement (including PDSA)

This is a QI approach to 'continuous improvement' where changes are tested in small cycles that involves planning, doing, studying, acting (PDSA), before returning to the planning, and so on. A link to a how to guide is here.

Each cycle starts with ideas and theories which evolve into knowledge that can inform action and intends to produce positive outcomes. To do this, these cycles are linked with three key questions:

- What are we trying to accomplish?
- How will we know that a change is an improvement?
- What changes can we make that will result in improvement?

Any change that is proposed should also be explained, discussed and communicated with the team.

Statistical Process Control

Statistical Process Control is a measurement technique that is frequently used in QI to chart data over time. It can help to visualise natural variation (common cause variation) and variation that has a special cause i.e., is not a result of natural variation (special cause variation). The approach uses control charts that display boundaries for acceptable variation in a process.

Data are collected over time to show whether a process is within agreed quality control limits in order to monitor performance and can be used to measure the impact of improvement ideas.

Data & Measurement for Improvement

Measurement and gathering data are vital in any attempt to improve performance or quality and are essential to assess its 'impact'. It is worth noting, however, that measuring for improvement differs across research & evaluation.

- Measuring for research – tests whether the intervention 'works'

- Measuring for evaluation (or judgement) – helps key stakeholders gauge performance and to collate learning about the process.

When measuring for improvement in terms of QI, the learning develops through ‘processes’. As a result of a process, the key questions or hypothesis will change throughout the project (unlike traditional research). As a result, the data is considered ‘good enough’ rather than ‘perfect’. Instead of asking ‘does it work?’, QI asks, ‘how it works, for whom, under which circumstances and to what extent?’ Ultimately understanding ‘what will constitute success?’ It can be really helpful at the start of any improvement work to map out initial theories about how you will achieve the improvement aim, how you predict change will happen, and what inputs and outputs you expect. There are three useful tools to do this.

1. **Driver Diagram:** A driver diagram is a simple but effective tool that helps you to translate a high-level improvement aim into a logical set of underpinning goals (‘drivers’) and change ideas. It captures an entire project in a single diagram and also helps to provide a measurement framework for monitoring progress. An example of a driver diagram can be found here.

2. **Theory of Change Model**: A theory of change is a comprehensive description and illustration of how and why a desired change is expected to happen in a particular context. It makes explicit the underlying assumptions about the project you want to evaluate and provides a visual representation of how your project will lead to the desired impact. It articulates how you expect change to happen and helps to describe the enablers and mechanisms of change. It is also a useful tool to build stakeholder relationships, as you can develop a theory of change collectively using co-production. It can help you communicate your project in a clear and simple way, showing your thinking about what the hoped-for outcome will be. This in turn helps to identify your evaluation and data needs. *“Developing a ‘theory of change’ can be useful way of articulating and providing a visual representation of the links between the various activities of service and how this will lead to the long term outcomes it is trying to achieve”* (NPC Guide to Developing Theory of Change) – see here.

3. **Logic Model:** Logic models describe the relationship between a project’s inputs, activities, outputs, outcomes, and impacts. It can help you to see what you are putting into the project (the inputs), how the project uses the resources (the activities), what products are produced (the outputs), what change is predicted to be achieved as a result of this process (the outcomes) and the final intended and unintended changes that happened as a result of the intervention/programme (the impacts). A useful guide to developing a logic model can be found here.

This traditional QI approach does have limitations however, in that the ‘does it work?’ question still needs to be asked e.g., via a Randomised Controlled Trial. It is also important to measure change over time, using methods that make it possible to separate out improvement or deterioration, from the expected level of performance variations.

To do this, in TEC Cymru this process is split into ‘four phases’ across the time period of the intervention/programme. This is discussed in the next section.

To find out more on Quality Improvement approaches and principles see here.

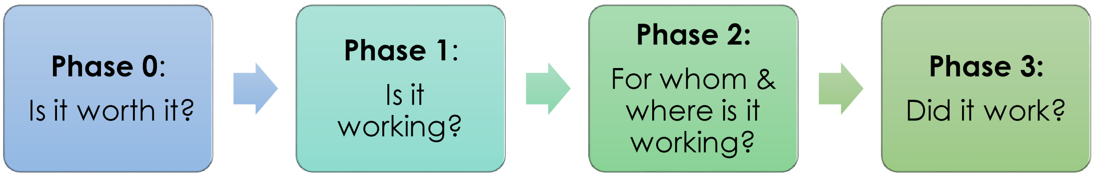
3. TEC Cymru’s Four-Step Phased Approach

What is TEC Cymru’s Four-Phase Approach?

TEC Cymru have developed a four-phase approach to their Research & Evaluation framework. This approach is tried and tested by TEC Cymru and is highly recommended as a robust method for data collection and analysis across a wide range of interventions/programmes.

In simple terms, **Phase 0** sets the stage; **Phase 1** and **Phase 2** captures data from adoption through to full implementation; and **Phase 3** tests it in its full form and determines long-term sustainability.

Phase Zero: ‘Is it worth it?’



The Phase Zero is the ‘discovery’ phase of any intervention/programme within TEC Cymru. This phase sets out to understand its rationale and objectives in order to determine its value and worth for TEC Cymru as a programme, and the need for time and resources spent on research and evaluation.

At this phase, evidence is sought, literature reviews are conducted, appropriate ethical approvals are applied for and baseline data is captured to understand the ‘public opinion’ on the proposed intervention/programme, by way of baseline survey capture, public consultations or via patient and public involvement (PPI) – (discussed in Section 5). Access to the Welsh e-library can be found here.

It is also important in this phase to consider *"The extent to which an activity or project can be evaluated in a reliable and credible fashion"* (OECD-DAC 2010; p.21) and to undertake an evaluability assessment. More information about how evaluability works and assessment templates can be found here. This can include structured engagement with stakeholders to clarify the goals of the intervention and how they might be achieved. It can be helpful to develop a driver diagram, logic model or theory of change to articulate a shared understanding of the work, which evaluation models will be used and to seek advice on whether or not an evaluation can be carried out at reasonable cost.

At the beginning of an intervention/programme, despite previous evidence and early baseline data capture, often very little is known about the targeted participant group required for the proposed intervention/programme, particularly in terms of the likely uptake of the intervention/programme, or its likely response or outcome. Therefore, at this point, very little is also likely to be known about the best method or approach to take to capture the best evidence from this targeted participant group.

From the perspective of TEC Cymru, it would be wasteful to spend several months on designing a flawless data collection method, instrument or measurement, and spending months applying for and awaiting the response of IRAS ethical approval to later realise that the participants were not willing to participate, or that the intervention/programme was to not demonstrate value/worth, and thus goes against the QIs dimensions (e.g., dimension 5 'efficiency' and dimension 1 'safety' by prolonging a service).

Due to this, TEC Cymru therefore suggest that if the intervention/programme has passed all necessary safety and quality checks, then holding its go-live/start date up due to research and evaluation delays may perhaps do more harm than good to its potential participants; but also, to go live without an evaluation component attached could do harm (or at least produce errors) to the evidence base.

TEC Cymru have therefore developed a four-phase approach to their Research & Evaluation strategy, which allows them as a team to determine the 'need' or requirements for further phases as they learn more and progress.

NOTE: *It is important to note that some of the phases or ethical approval applications will not be necessary for all types of interventions/programmes. This approach is merely an 'ideal guide' used by TEC Cymru.*

Phase 1: 'Is it working?'

By the time your intervention/programme reaches Phase 1, Phase Zero has led your team to believe that the proposed intervention/programme is of value and worth to the overarching intervention/programme and requires evaluation and research support.

At Phase 1 you merely want to know **'Is it working?'**

In TEC Cymru, Phase 1 often attempts to answer this question by simply capturing data from service users (patients/families/professionals) via basic live feedback surveys (often attached to the intervention), which aim to capture measures such as the **'use' and 'value'** of the intervention/programme.

Often within the NHS, all is required to capture Phase 1-type data is Service Evaluation approval from a local Research & Development (R&D) department to begin 'early doors' evaluation. As Phase 1 progresses, and more is learned about the participant groups, additional ethical approvals (e.g., IRAS) and more in-depth planning and resources can proceed for the progression of further phases if needed.

From TEC Cymru experience, this phased approach allows for less waste, better planning, and provides a better understanding and awareness of the participant group, thus tailoring the next phases more appropriately. This ultimately improves the intervention/programme and its likely outcomes.

Phase 2: 'How is it working?'

By the time your intervention/programme reaches Phase 2, Phase 1 has led your team to believe it is working, but you are yet to understand **how it is working, for whom, under which circumstances and to which extent?**

In TEC Cymru, Phase 2 often attempts to answer this question by continuing to capture data from service users (patients/families/professionals) but by digging deeper. This is often via more in-depth feedback surveys which aim to capture measures around **'benefits and challenges'** of the intervention/programme and to begin to explore the longer-term **'sustainability'** of it.

TEC Cymru split their Phase 2 work into 3-6 month increments and refer to them as Phase 2a, b, c and so on. Ideally, TEC Cymru would suggest that Phase 2 would be an ongoing phase until the end of the intervention/programme to ensure there are no gaps in data capture moments/timeframes.

In addition, Phase 2 will seek to capture qualitative data to provide a richer understanding of its participant group, and the context for which the intervention/programme is based, e.g., via interviews and focus groups.

Phase 3: 'Did it work?'

By the time your intervention/programme reaches Phase 3, you should have a good understanding of your participant group and the context for which the intervention/programme is based. Phase 2 has led you to understand ***how it is working, for whom, under which circumstances and to which extent.*** But it's important to understand that this 'how' is still merely a judgment and still will not tell you if **it works**.

Phase 3 however, asks '**did it work?'**

Knowing if something officially **'works'** needs to be **'proven'**, and proof can only be derive from in-depth or experimental research testing measures such as **'efficacy and effectiveness'** e.g., cost or clinical effectiveness studies.

In TEC Cymru, Phase 3 often attempts to answer this question by working closely with service users and teams (relationships developed in Phases 1 & 2) to understand more specific areas of need and requirement for in-depth research. Then, reaching out and collaborating with others (e.g., academia, international experts) to apply for more advanced ethical approvals and conduct more in-depth or experimental research such as Randomised Controlled Trials (RCTs), cost effectiveness studies and more in-depth, research led qualitative approaches extending on specialised areas.

It is very important to note that, by the time you reach Phase 3, things need to shift up a gear and additional support and resources within your intervention/programme are needed.

For example:

- In Phases 1 and 2, key questions and requirements are generally based on intervention/programme 'remits' and 'must haves' (e.g., what the stakeholder has requested), Phase 3 however, operates more independently and as potential 'should haves' – in that it is now generating new knowledge which is distinctive and unique from original 'remits' (e.g., the unknown).

- Unlike the structure that Phases 1 & 2 allows, Phase 3 research requires the freedom and creativity of a research team to explore new themes that emerge from Phases 1 and 2, and therefore, at this point, need to be able to step outside of its original intervention/programme 'remit'. As you need to remember that there are likely to be newly emerging areas of interest and therefore unlikely to be in an original intervention/programme remit. In other words, if you attempt to 'restrict' natural data emergence and progression by preventing movement of 'intervention/programme remit change', you are potentially restricting true data findings which is the essence of research, and it is this essence that puts research over the top of evaluation in terms of error of judgement, non-bias, validity and reliability.

- If your intervention/programme is unable to support the requirements of Phase 3, it should not be labelled as Research & Evaluation, but rather as a Service Evaluation component of a intervention/programme only, as the evidence in Phases 1 & 2 is merely provide a judgement on 'how to improve' and not as 'proven to work'.

- *Remember:* to 'improve' conduct service evaluation and to 'prove' conduct research; and to do it the TEC Cymru way – do both!

4. Using Mixed Methodologies

To expand the evidence-base as far as possible on any type of phased research and evaluation component of an intervention/programme, adopting a mixed methods approach is highly recommended by TEC Cymru.

Stakeholders and research funders strive to ensure high quality and safety for the public (and within the NHS, more specific to their patients, families and professionals). A mixed methods approach can do this – it can explore all types of trends and practices across participant groups and context and provide stakeholders a more rounded analysis and understanding of the problems and solutions.

What is Mixed Methods Research & Evaluation?

Mixed methods is an approach used to collect and analyse both quantitative and qualitative data within the same study (e.g., the intervention/programme).

A mixed methods approach is appropriate for answering questions that neither quantitative nor qualitative could answer alone.

Mixed methods approaches require a focused mixing of methods in data collection, analysis and interpretation of the evidence.

The key word here is **'mixed'**.

The important step in the mixed approach is the data 'linkage' or 'integration' at each appropriate stage of the Research & Evaluation process.

Data linkage/integration enables the research team to seek out a more 'inclusive (or panoramic) view and understanding' of the context and perspectives through different types of lenses.

For example, in a mixed methods study, the quantitative data may provide knowledge on decisions, choices, change and outcomes, whereas the qualitative data provides the contextualised experiences attached to these measures, thus providing more in-depth information on the influential factors, triggers and true meaning associated to each of the measures. This type of mixed methods study can therefore provide an all-rounded understanding across the context and perspectives to answer a certain research question.

In other words, by using one method alone (e.g., a survey), can only partly answer a research question, but by using mixed methods, a fuller understanding is more likely to be captured, and therefore, more likely to answer the research question. If, as a researcher, you fail to answer the research question that you set out to answer, there will be a very high chance of producing significant gaps and misinterpretations in the data set, but also, there will be a need for more research in that area – ultimately producing a waste of time, resources and potentially additional external funding.

In addition, a mixed methods approach strengthens both the quantitative and qualitative methods allowing the research team to explore and compare diverse perspectives and uncover relationships that exist between the multifaceted key or research questions.

5. Using Patient & Public Involvement (PPI)

What is Patient & Public Involvement?

Patient and public involvement (or PPI for short) means actively working in partnership with patients and members of the public to plan, design, manage and carry out research and evaluation. This means that the research for a specific intervention/programme that is intended to improve or prove something for a patient or member of the public needs to be ‘with’ or ‘by’ them rather than ‘to’ or ‘for’ them.

The ‘involvement’ part of PPI is different to participation (e.g., taking part in research) and engagement (e.g., research dissemination).

Why is Patient & Public Involvement Important?

Involving patients and the public in research and evaluation strategies is very important to ensure that research design and management is relevant, and that its outcomes and outputs fit the needs of the intended audience (usually that of patients or members of the public).

PPI should be central to any Research & Evaluation intervention/programme and therefore, should sit centrally within each and every stage of its strategy, *and not just because* it is the ‘right thing to do’ – but input from lay people provides researchers with real life insight into what patients and the public ‘want’ and ‘need’ – which ultimately helps save time and resources on ‘getting it right’ for the user.

The majority of research funding streams require applicants to clearly demonstrate how they plan to involve patients and the public in their research process and will require clear justification for not using them. This is also applicable for publications, in that PPI is now mandatory for many peer-reviewed journal submissions.

In other words, by neglecting PPI, you may be putting funding opportunities and dissemination outputs at risk.

What is the Patient & Public Involvement Process?

Patients and members of the public can be, and ideally should be, involved at each and every stage of the research process. This can include a wide range of approaches from bringing PPIs into the central team or attending pre-existing groups of PPI and raising issues and questions. Some examples are:

- **Identifying and prioritising** (e.g., hold an initial meeting with PPIs to discuss the best strategies)
- **Designing & Managing** (e.g., attend a pre-existing PPI groups to discuss design of data collection, and follow-up meeting on amendments or next phase designs)
- **Patient & Public-Researchers** (e.g., conducting data collection and analysis)
- **Dissemination** (e.g., co-authorship on publications and presentations)
- **Implementing** (e.g., involved in rolling out an intervention/programme)
- **Monitoring & Awareness** (e.g., gather views on and improve PPI impacts)

TEC Cymru suggest using different approaches to a PPI approach, including having central PPI members such as TEC Cymru Young Person Representatives, and also an Ad Hoc approach, e.g., attending pre-existing PPI groups and reach out to existing contacts to raise issues and capture feedback ‘as and when’ needed.

6. Useful Links & Templates

NHS Health Board Service & Product Evaluation Application Forms
Contact your local R&D department for service or product evaluation application forms.

Integrated Research Application System (IRAS) Application Guidance
Follow link here

Information Governance & Data Protection Impact Assessments DPIA
Information Governance (IG) is a framework that brings together legal, ethical and quality standards that apply to the handling of information; it applies to all information and data especially sensitive and personal information. To find out more, contact your local Information Governance department.

TEC Cymru's Welsh/English Survey Design Example Template
Follow Link Here

TEC Cymru's Phase 1, 2 & 3 Reports, Publications & Presentations
Follow link here

TEC Cymru's Driver Diagram Example for Video Consulting Programme
See example copy attached p.18

TEC Cymru's Phase 0-2 Example Questions
See example copy attached p.19

TEC Cymru's PPI Contract (example of a TEC Cymru young person contract)
See example copy attached p.20-21

Further Reading and Helpful Links:

Clamp C, Gough S, Land L. Resources for Nursing: An Annotated Bibliography. 4th edn. London: Sage, 2004
http://www.nhsevaluationtoolkit.net/resources/case-studies/
https://www.betterevaluation.org/
https://www.informalscience.org/what-evaluation-0
https://www.rip.org.uk/resources/publications/evaluation-tools-and-guides/
https://www.nesta.org.uk/
https://www.wkkf.org/resource-directory/resources/2004/01/logic-model-development-guidehttps://www.gov.uk/government/publications/evaluation-in-health-and-wellbeing-guidance-summaries/evaluation-in-health-and-well-being-guidance-summaries
Evaluability Assessment | Better Evaluation
https://www.re-aim.org/about/what-is-re-aim/
https://www.gov.uk/government/publications/the-magenta-book
http://www.1000livesplus.wales.nhs.uk/sitesplus/documents/1011/Quality%20Improvement%20Guide%20-%203rd%20edition%20%28IQT%29%20WEB.pdf

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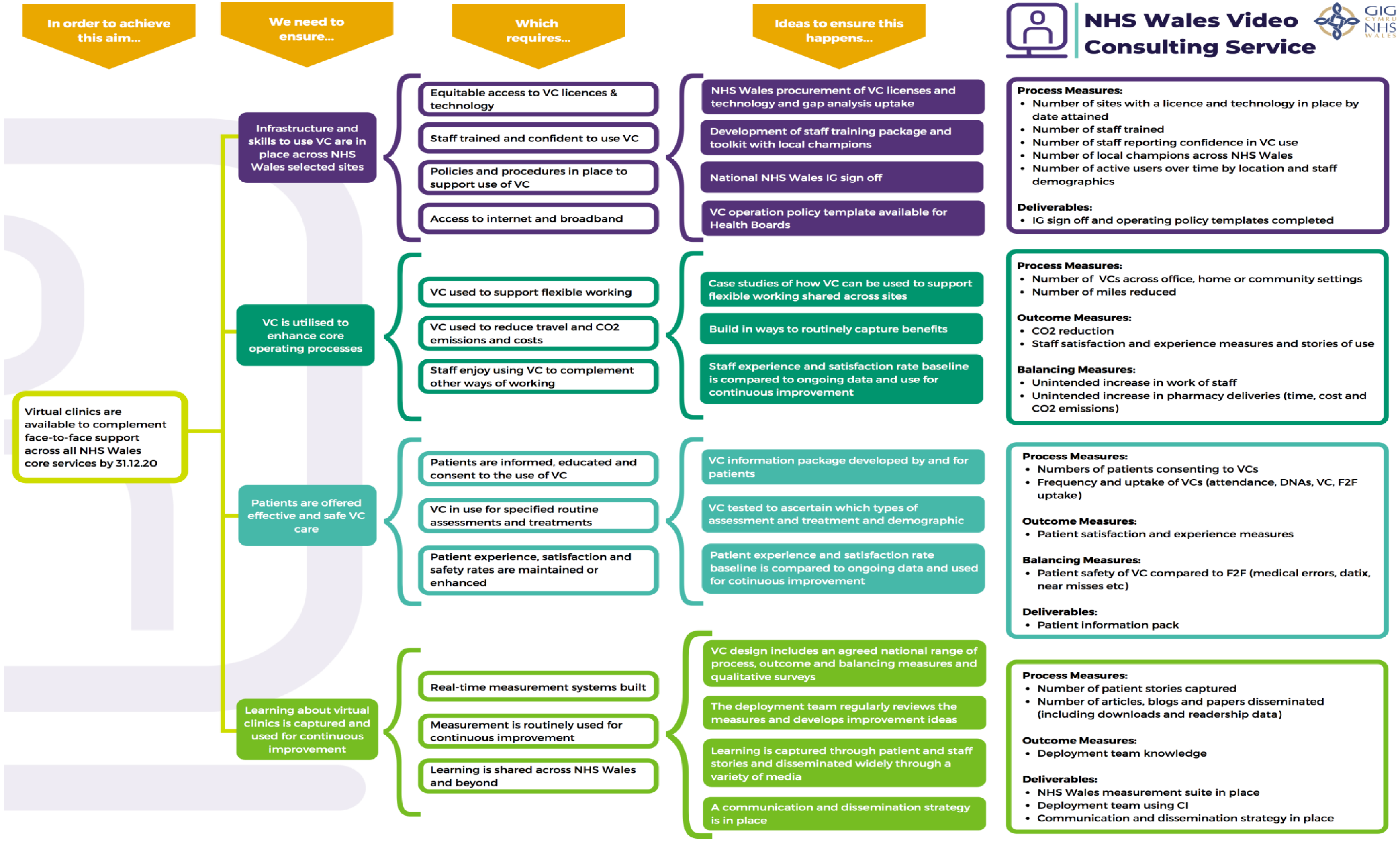


NHS Wales Video Consulting Service

In order to achieve this aim...

Virtual clinics are available to complement face-to-face support across all NHS Wales core services by 31.12.20

We need to ensure... / **Which requires...** / **Ideas to ensure this happens...**

Infrastructure and skills to use VC are in place across NHS Wales selected sites

- Equitable access to VC licences & technology
- Staff trained and confident to use VC
- Policies and procedures in place to support use of VC
- Access to internet and broadband

- NHS Wales procurement of VC licenses and technology and gap analysis uptake
- Development of staff training package and toolkit with local champions
- National NHS Wales IG sign off
- VC operation policy template available for Health Boards

Process Measures:
- Number of sites with a licence and technology in place by date attained
- Number of staff trained
- Number of staff reporting confidence in VC use
- Number of local champions across NHS Wales
- Number of active users over time by location and staff demographics

Deliverables:
- IG sign off and operating policy templates completed

VC is utilised to enhance core operating processes

- VC used to support flexible working
- VC used to reduce travel and CO2 emissions and costs
- Staff enjoy using VC to complement other ways of working

- Case studies of how VC can be used to support flexible working shared across sites
- Build in ways to routinely capture benefits
- Staff experience and satisfaction rate baseline is compared to ongoing data and use for continuous improvement

Process Measures:
- Number of VCs across office, home or community settings
- Number of miles reduced

Outcome Measures:
- CO2 reduction
- Staff satisfaction and experience measures and stories of use

Balancing Measures:
- Unintended increase in work of staff
- Unintended increase in pharmacy deliveries (time, cost and CO2 emissions)

Patients are offered effective and safe VC care

- Patients are informed, educated and consent to the use of VC
- VC in use for specified routine assessments and treatments
- Patient experience, satisfaction and safety rates are maintained or enhanced

- VC information package developed by and for patients
- VC tested to ascertain which types of assessment and treatment and demographic
- Patient experience and satisfaction rate baseline is compared to ongoing data and used for cotinuous improvement

Process Measures:
- Numbers of patients consenting to VCs
- Frequency and uptake of VCs (attendance, DNAs, VC, F2F uptake)

Outcome Measures:
- Patient satisfaction and experience measures

Balancing Measures:
- Patient safety of VC compared to F2F (medical errors, datix, near misses etc)

Deliverables:
- Patient information pack

Learning about virtual clinics is captured and used for continuous improvement

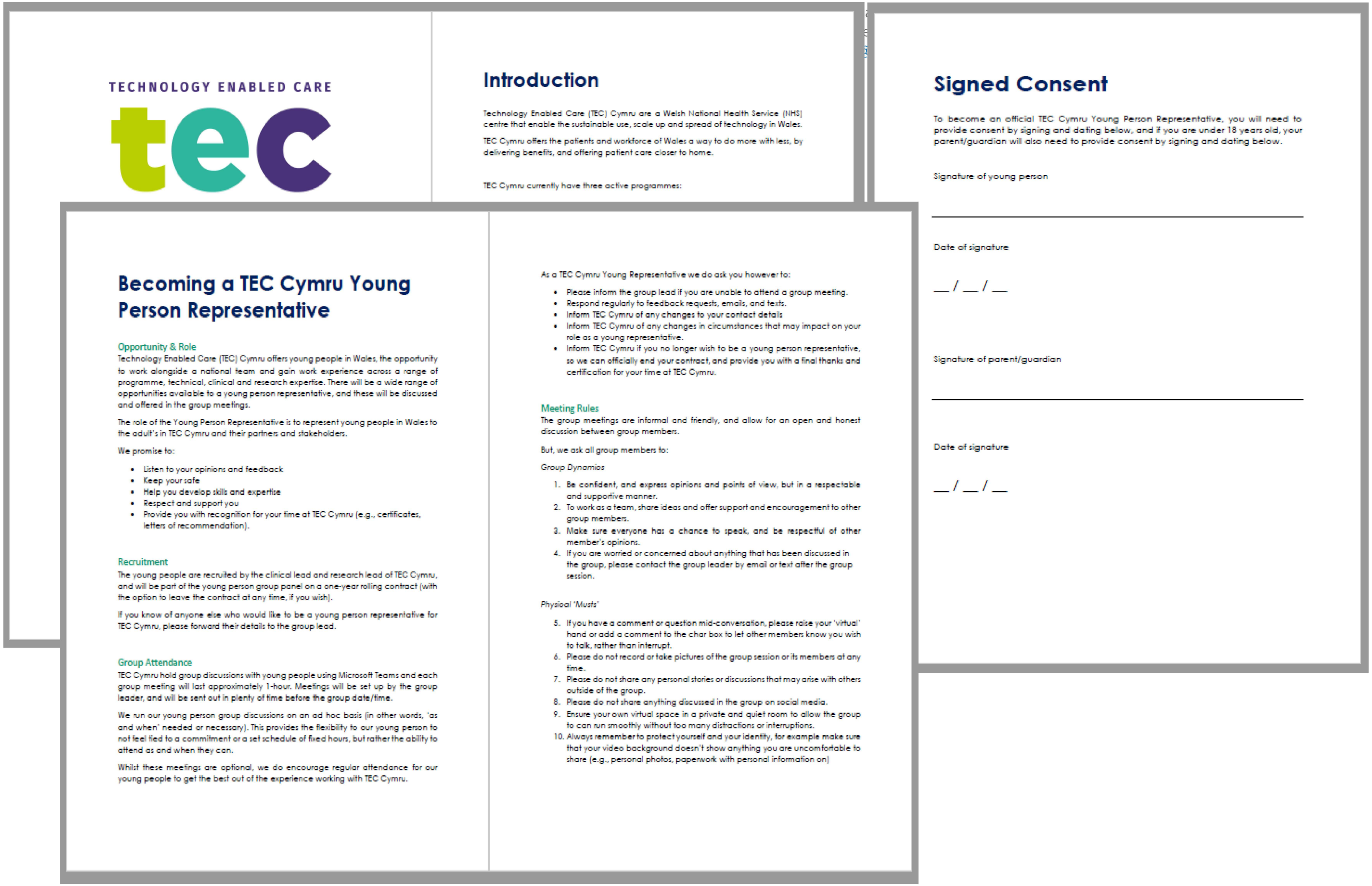
- Real-time measurement systems built
- Measurement is routinely used for continuous improvement
- Learning is shared across NHS Wales and beyond

- VC design includes an agreed national range of process, outcome and balancing measures and qualitative surveys
- The deployment team regularly reviews the measures and develops improvement ideas
- Learning is captured through patient and staff stories and disseminated widely through a variety of media
- A communication and dissemination strategy is in place

Process Measures:
- Number of patient stories captured
- Number of articles, blogs and papers disseminated (including downloads and readership data)

Outcome Measures:
- Deployment team knowledge

Deliverables:
- NHS Wales measurement suite in place
- Deployment team using CI
- Communication and dissemination strategy in place



TECHNOLOGY ENABLED CARE

tec

Introduction

Technology Enabled Care (TEC) Cymru are a Welsh National Health Service (NHS) centre that enable the sustainable use, scale up and spread of technology in Wales.

TEC Cymru offers the patients and workforce of Wales a way to do more with less, by delivering benefits, and offering patient care closer to home.

TEC Cymru currently have three active programmes:

Becoming a TEC Cymru Young Person Representative

Opportunity & Role

Technology Enabled Care (TEC) Cymru offers young people in Wales, the opportunity to work alongside a national team and gain work experience across a range of programme, technical, clinical and research expertise. There will be a wide range of opportunities available to a young person representative, and these will be discussed and offered in the group meetings.

The role of the Young Person Representative is to represent young people in Wales to the adult's in TEC Cymru and their partners and stakeholders.

We promise to:

- Listen to your opinions and feedback
- Keep your safe
- Help you develop skills and expertise
- Respect and support you
- Provide you with recognition for your time at TEC Cymru (e.g., certificates, letters of recommendation).

Recruitment

The young people are recruited by the clinical lead and research lead of TEC Cymru, and will be part of the young person group panel on a one-year rolling contract (with the option to leave the contract at any time, if you wish).

If you know of anyone else who would like to be a young person representative for TEC Cymru, please forward their details to the group lead.

Group Attendance

TEC Cymru hold group discussions with young people using Microsoft Teams and each group meeting will last approximately 1-hour. Meetings will be set up by the group leader, and will be sent out in plenty of time before the group date/time.

We run our young person group discussions on an ad hoc basis (in other words, 'as and when' needed or necessary). This provides the flexibility to our young person to not feel tied to a commitment or a set schedule of fixed hours, but rather the ability to attend as and when they can.

Whilst these meetings are optional, we do encourage regular attendance for our young people to get the best out of the experience working with TEC Cymru.

As a TEC Cymru Young Representative we do ask you however to:

- Please inform the group lead if you are unable to attend a group meeting.
- Respond regularly to feedback requests, emails, and texts.
- Inform TEC Cymru of any changes to your contact details
- Inform TEC Cymru of any changes in circumstances that may impact on your role as a young representative.
- Inform TEC Cymru if you no longer wish to be a young person representative, so we can officially end your contract, and provide you with a final thanks and certification for your time at TEC Cymru.

Meeting Rules

The group meetings are informal and friendly, and allow for an open and honest discussion between group members.

But, we ask all group members to:

Group Dynamics

1. Be confident, and express opinions and points of view, but in a respectable and supportive manner.
2. To work as a team, share ideas and offer support and encouragement to other group members.
3. Make sure everyone has a chance to speak, and be respectful of other member's opinions.
4. If you are worried or concerned about anything that has been discussed in the group, please contact the group leader by email or text after the group session.

Physical 'Musts'

5. If you have a comment or question mid-conversation, please raise your 'virtual' hand or add a comment to the char box to let other members know you wish to talk, rather than interrupt.
6. Please do not record or take pictures of the group session or its members at any time.
7. Please do not share any personal stories or discussions that may arise with others outside of the group.
8. Please do not share anything discussed in the group on social media.
9. Ensure your own virtual space in a private and quiet room to allow the group to can run smoothly without too many distractions or interruptions.
10. Always remember to protect yourself and your identity, for example make sure that your video background doesn't show anything you are uncomfortable to share (e.g., personal photos, paperwork with personal information on)

Signed Consent

To become an official TEC Cymru Young Person Representative, you will need to provide consent by signing and dating below, and if you are under 18 years old, your parent/guardian will also need to provide consent by signing and dating below.

Signature of young person

Date of signature

__ / __ / __

Signature of parent/guardian

Date of signature

__ / __ / __

Example Questions Phase 0-2

Phase Zero asks 'is it worth it?'
To answer the question, TEC Cymru often capture existing data by way of conducting:

- Literature Reviews
- Systematic or Meta-Analysis Reviews

This existing data capture would provide a broad understanding of the question asked, but less likely to know if it is worth it in a specific local area, for example.

If this is needed, then the next step in Phase 0 would then run baseline consultations, such as:

- Consultations (e.g., with professionals, clinicians, stakeholders)
- Patient/Public Involvement (PPI) group discussions
- Baseline Surveys
- Process Mapping Exercises.

The types of questions asked in Phase Zero may include:

1. What is the understanding of the proposed intervention/programme? (As a broad view, and local view).
2. Do they think the proposed intervention/programme would add use and value in that area?
3. Do they think the proposed intervention/programme would deliver benefits to the public/patients/professionals?
4. Do they see any significant challenges or barriers that would clearly outweigh the potential values or benefits?
5. For whom, under which circumstances and to what extent do they think the proposed intervention/programme would provide value and benefits?
6. Do they think the proposed intervention/programme would work?

These scoping questions aim to determine the next steps taken in the TEC Cymru phased approach. In other words, what other questions need asking?

Phase 1 asks 'is it working?'
To answer the question, TEC Cymru often capture existing data by way of conducting:

- Live Surveys (e.g., attached to intervention)
- Retrospective Surveys (e.g., request additional feedback)
- Interviews

The types of questions at this phase will be looking to measure **'use and value'** of the intervention/programme that is being evaluated.

The types of questions that would be asked in Phase 1 would be:

1. Rate the quality or value of the intervention/programme (using a star scale from excellent to poor).
2. What type of technology/device for example, was used to access the intervention/programme (using drop-down list).
3. Have you used the intervention/programme before, and if so, how many times?
4. Would you use the intervention/programme again? Probe for additional feedback as to 'why'.
5. Did the intervention/programme do something as an addition to a traditional method (e.g., a digital intervention may prevent the need for a face-to-face appointment).

6. What type of clinical setting or reason are you using the intervention/programme for? (using drop-down list)
7. Request for a 'few' demographic questions – e.g., age, gender, Health Board.
8. Any other comments?

Phase Two asks 'who is it working for, under which circumstances and to what extent?'
To answer these questions, TEC Cymru often capture existing data by way of conducting similar approaches to Phase 1, just more in-depth.

- Live Surveys (e.g., attached to intervention)
- Retrospective Surveys (e.g., request additional feedback)
- Interviews & Focus groups

The types of questions at this phase will be looking to measure **'benefits, challenges & sustainability'** of the intervention/programme that is being evaluated. The types of questions that would be asked in Phase 2 would be:

1. Rate the quality of the intervention/programme (using a star scale from excellent to poor).
2. What type of technology/device for example, was used to access the intervention/programme (using drop-down list).
3. Did you experience any difficulties or challenges using the intervention/programme? (Perhaps use a matrix format, and list difficulties/challenges to select from, and their level of severity).
4. Did you experience any advantages or benefits using the intervention/programme? (Perhaps use a matrix format, and list advantages/benefits to select from, and their level of severity).
5. Have you used the intervention/programme before, and if so, how many times?
6. Would you use the intervention/programme again? Probe for additional feedback as to 'why'.
7. Did the intervention/programme do something as an addition to a traditional method (e.g., a digital intervention may prevent the need for a face-to-face appointment).
8. What type of clinical setting, professional or reason are you using the intervention/programme for? (using drop-down list)
9. Request more in-depth demographic questions – e.g., age, gender, ethnicity, household income, disability, Health Board and Local Authority,
10. Has the intervention/programme impacted on your clinical outcomes?
11. Any other comments?
12. Provide an opportunity for participants to take part in further research such as a follow-up interview (e.g., provide a contact email at the end of the survey for keen participants to reach out to you).

Please note: TEC Cymru will always recommend a mixed methods approach. Therefore, even in surveys, add lots of free-text 'comment' options to allow for additional individuality and opinion to be expressed by your participants. This narrative will likely provide rich and meaningful data that drop-down and tick boxes cannot do alone.

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Meet the Team

Gemma Johns, Research & Evaluation Lead

Gemma is TEC Cymru's Research and Evaluation Lead, who manages a team of Research Assistants across three programmes in TEC Cymru.

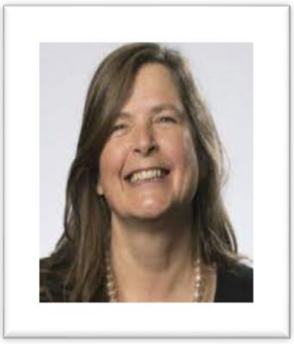
Gemma has a keen interest in the interface between health and social care and digital innovation. Gemma is also doing a PhD in Medical Sociology at Bristol University.

For more information about the framework or TEC Cymru's research & evaluation, please email Gemma at: Gemma.Johns3@wales.nhs.uk

Professor Alka Ahuja MBE, Consultant Psychiatrist & National Clinical Lead

Alka is a Consultant Child and Adolescent Psychiatrist at Aneurin Bevan University Health Board. Alka is the National Clinical lead for the Welsh Government Technology Enabled Care Programme. She is the incoming Vice chair of the Child and Adolescent Faculty of the Royal College of Psychiatrists and the Public Education lead, Royal College of Psychiatrists in Wales. Also a Visiting Professor at University of South Wales and an Honorary Professor at Cardiff University.

She has expertise in qualitative research methodology and her areas of special interest include neurodevelopmental disorders including autism and ADHD, user and carer involvement in healthcare services and employment of digital technology in healthcare. Twitter: @AlkaSashin



Anna Burhouse, Director of Quality Development Northumbria Healthcare NHS FT

Anna trains and coaches staff from the NHS across the UK to lead complex quality improvement work and to scale and spread innovations.

Anna is a qualified coach, Health Foundation Improvement Fellow, Ashridge Business School alumni in Leadership for Improvement and an Honorary Senior Research Fellow at the University of Bath Centre for Healthcare Innovation and Improvement and Chair of the Engagement and Involvement Advisory Board at The Health Improvement Science Institute at Cambridge University.

Alongside her work in improvement Anna maintains her clinical practice as a Consultant Child and Adolescent Psychotherapist in the NHS working with young people to innovate new approaches to wellbeing. Twitter @annaburhouse