The Strategy Unit.

Integrated IAPT (IAPT-LTC) Early Implementers Local Evaluation Support Guide

Version 1, July 2017

NHS
Midlands and Lancashire
Commissioning Support Unit

Version Control

Version Number	Purpose / Changes	Author	Date
V0.1	Initial Draft	Mike Woodall, Jagdeep Panesar	20/07/17
V0.2	Draft with suggested amendments from NHS England	Mike Woodall, Jagdeep Panesar, Stephanie Lietz	27/07/17
V1.0	Version for publication	Mike Woodall	31/07/17

Contents (1)

Contents (2)

Contents (3)

Background (1)

This guide was developed to provide a useful set of resources to help Integrated IAPT (IAPT-LTC) Early Implementer sites design and implement their local evaluations. The purpose of the local evaluations is to explore the impact of the integrated IAPT service and to provide evidence of the benefits achieved locally, to inform commissioning and further roll-out. They will also provide useful evidence to support the national impact evaluation as findings locally are likely to be available sooner and may include additional metrics and detail that will not be included in the national evaluation.

The approach should be pragmatic and the scope determined locally, defined jointly by providers and commissioners. So do consult with your commissioners and develop an approach that works in your local context and is feasible. A number of approaches are introduced in this guide, both quantitative and qualitative methods. Which approach you choose will depend on a number of factors, such as the type of information required to inform commissioning and local availability and capacity to undertake the analysis required.

Background (2)

There are 4 sections along with a set of references and useful links to support further learning. The section are:

1. Evaluation Design
2. Data Sharing and Information Governance
3. Data Linkage
4. Healthcare Utilisation Metrics

The guide is part of a wider package of support provided by The Strategy Unit at Midlands & Lancashire CSU that is being offered to Wave 1 and Wave 2 Early Implementer sites to support the development of your local evaluations. The support package covers data quality for the integrated IAPT data submission, information governance, data linkage, healthcare utilisation metrics and evaluation design. A set of regional workshops were also provided alongside individual site support that can be accessed using the details on the contact page at the end of this guide.

The Strategy Unit.

Evaluation Design

NHS
Midlands and Lancashire
Commissioning Support Unit

Introduction

This section provides an overview of some of the methods that may be useful for conducting local evaluations of the Integrated IAPT services. Careful consideration has been given to the methods that are included in this guide in order to introduce approaches that are feasible. Most importantly providers and commissioners should agree on what success looks like before deciding how to evaluate the service implementation, to ensure the evaluation provides the level of evidence required to support the commissioning process.

The topic of evaluation is wide and ever expanding. The intention for this guide is to provide you with the basic grounding in the theory of evaluation and the practical steps you need to take to be able to conduct your own evaluation. This guide also contains references to useful resources if you wish to learn more about evaluations.

If you need further support on designing your evaluation or on how to conduct the analysis for your evaluation then additional advice is available (see Contact Details).

What is your Theory of Change?

What is your theory of change? (1)

Evaluation is needed to understand the difference your service makes (and how) so that informed decisions can be made about the future of your service. It helps you to provide evidence that your service is making a difference and also helps you to improve your service.

In order to be evaluated, programmes must therefore clearly articulate what they are setting out to achieve and how change is expected to happen. A range of approaches are available in achieving this clarity; the most commonly accepted is the use of a logic model.

1: What is the rationale for your intervention?

> This is the justification for doing what you propose to do. It might be expressed in terms of problems and/or opportunities – and what might happen if you do nothing.

2: Given your rationale, what impacts are you ultimately trying to achieve?

> This might seem quite high-level, but here you should think about the ultimate impacts you aim to see for patients / staff / local services (etc). You should express this using language that suggests change, e.g. ‘increased x’, ‘reduced y’.

What is your theory of change? (2)

3: What immediate / specific outcomes will be necessary for you to achieve this?

Still thinking in terms of improvements for patients / staff / services, what changes are needed in order for your ultimate impacts to be achieved? For example, if you ultimately want to reduce avoidable acute activity, then you might want to see a decrease in the number of people attending Accident & Emergency (A&E). Again, the language of change is important in expressing outcomes.

4: To achieve these outcomes, what will you do differently?

This is more practical: what activities will you implement? This need not be a detailed list; you just need a sense of the main interventions you will use to achieve the outcomes you have just described. The question of how you expect change to be brought about is also important: how (and why) do you think your activities will lead to the desired outcomes? So, to continue the A&E example, you might propose to provide people who regularly attend A&E with a particular type of therapy, which may help those people manage their anxiety better, and therefore leading to less reliance on A&E services.

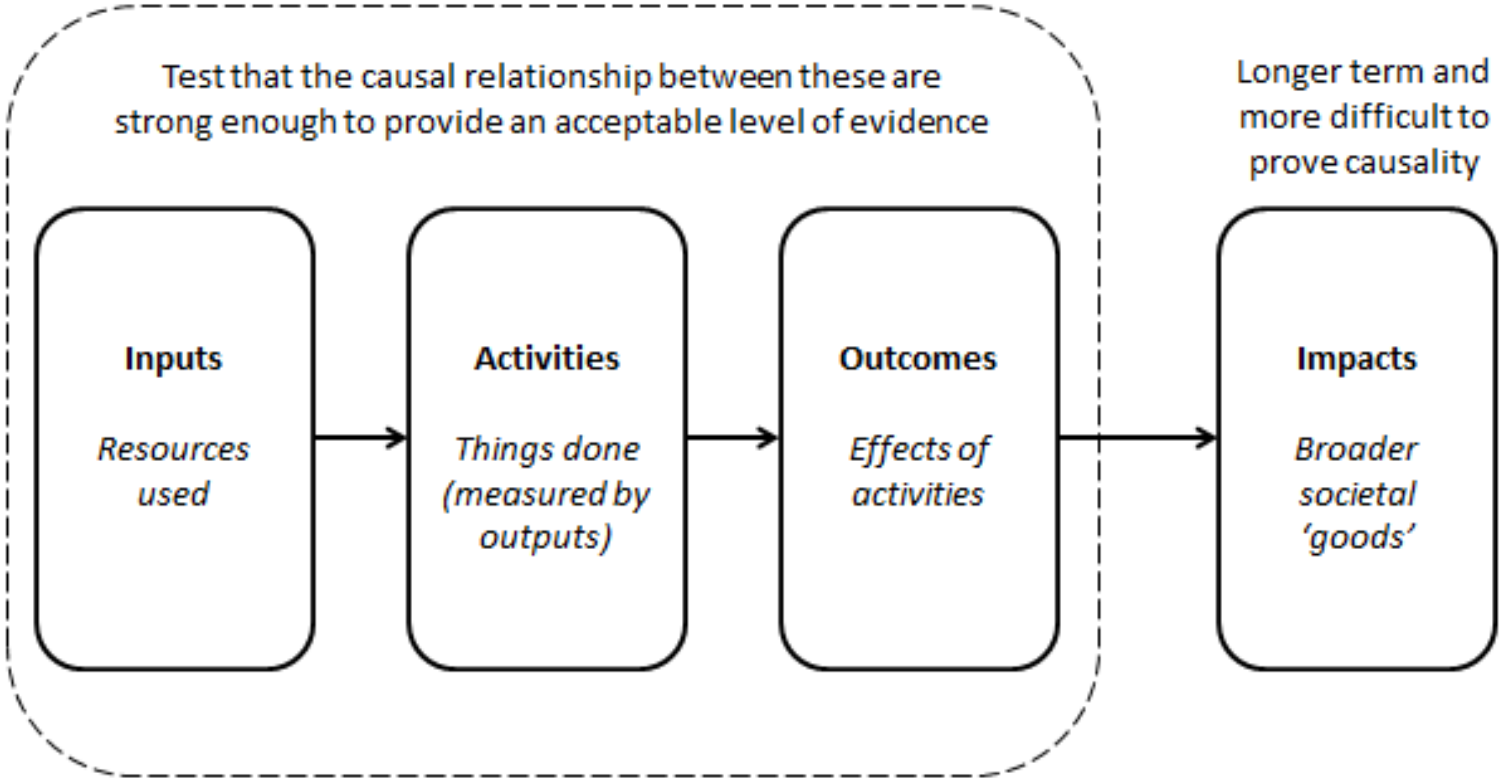
5: What resources do you have to do this?

What is available to implement the activities you have just described? This may be in terms of specific / programme funding; it may also mean 'in-kind' contributions from partners.

How do you expect your activities to achieve the desired results?

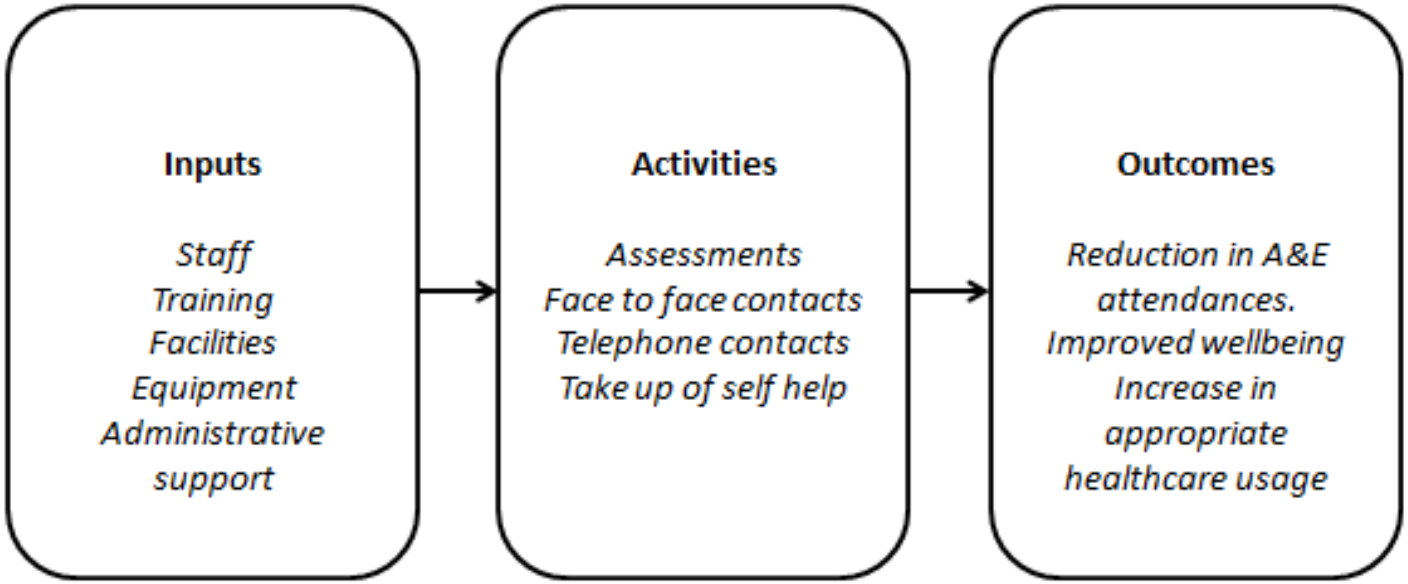
Having described your theory of change, you can use a logic model template as shown below. Logic models provide a clear description of the theory behind your service, which you can then use as a framework for gathering evidence (to test the theory).

More detail on logic models and how to develop them for your evaluation can be found at https://midlandsandlancashirecsu.nhs.uk/images/Logic_Model_Guide_AGA_2262_ARTWORK_FINAL_07.09.16_1.pdf



Logic Model example content

These are some of the inputs, activities and outcomes you would expect to see in a Logic Model.



It may not be possible to directly link all your inputs to activity, such as administrative support, therefore in these instances try to establish a methods to fairly apportion indirect inputs to activity (e.g. equal % of WTE/£ to each activity).

Selecting measures

A clearly articulated logic model provides a useful map for selecting the indicators that will be measured along the process for change during implementation and for evaluation.

The acronym **SMART** is a widely used and useful rule of thumb to ensure that indicators used are:

- **S**pecific: to measure the information required as closely as possible
- **M**easurable: to ensure that the information can be readily obtained
- **A**ttributable: to ensure that each measure is linked to the project's efforts
- **R**ealistic: to ensure that the data can be obtained in a timely fashion, with reasonable frequency, and at reasonable cost
- **T**argeted: to the objective population (also comparative population)

The Healthcare Utilisation Metrics section of this report details smart measures that may be useful for your local evaluation.

Defining the evaluation question (1)

Once you have your logic model it then becomes easier to define the specific hypothesis that you would want to test. This should include an appropriate counterfactual where possible (what would have happened without the new Integrated IAPT service). There are different methods that can be used and this will need to be agreed locally at the start of the evaluation to avoid using multiple methods until one provides the required outcome.

Effect of ***the intervention***

Relative to ***not having the intervention***

On ***X***

Measured as ***X***

Amongst ***people that have been exposed to the intervention***

Against ***people that have not been exposed to the intervention***

Defining the evaluation question (2)

Once you have your logic model it then becomes easier to define the specific hypothesis that you would want to test.

Effect of ***Integrated IAPT service***

Relative to ***no Integrated IAPT service****

On ***healthcare utilisation***

Measured as ***A&E attendances***

Amongst ***people that have been seen by Integrated IAPT services***

Against ***people that have not been seen by Integrated IAPT services****

**These can be identified using matching methods. You will need to obtain access to external datasets therefore please refer the Data Sharing and Information Governance section of this guide.*

Defining the evaluation question (3)

The Strategy Unit.

You can also define your question to fit a 'Before and After' study by comparing a persons activity before the intervention against their activity after the intervention and assuming changes are related to the integrated IAPT service.

Effect of ***Integrated IAPT service***

Relative to ***no Integrated IAPT service***

On ***healthcare utilisation***

Measured as ***A&E attendances***

Amongst ***people that have been seen by Integrated IAPT services after the completion of their treatment***

Against ***people that have been seen by Integrated IAPT services before the start of their treatment***

What is an Evaluation

What is an evaluation?

There are many definitions of evaluation, one of which is – ***the process of judging something's quality, importance, or value***

An evaluation has to be specifically designed to address the question(s) being asked and the nature of the intervention being evaluated.

Robust evaluation tells us not only whether an intervention worked, but also why and how – allowing us to learn lessons for spreading successful interventions and developing new ones.

Evaluation that is done inadequately, or not done at all, can render an intervention at best a wasted effort, with little or no evidence of the impact of the intervention. At worst, evaluation can lack credibility, especially if there is a bias towards emphasising success and ignoring failure, which can undermine efforts to improve patient care.

There are many types of evaluation, two of the most common approaches are summative and formative. There are no rules about which to choose but you should consider the following.

1. What you and the intervention team hope to learn from the evaluation.
2. What the different stakeholders' needs are.
3. How long you have to carry out the evaluation and what your budget is.

Types of evaluation and purposes (1)

Evaluation Type	Definition	Conditions	Uses
Formative	Evaluation during early implementation phase to help identify how best to modify/improve services. Can identify if improvements have been achieved on an on-going basis	This approach is useful if the program is not fully developed and expected to evolve on a regular basis. Mainly in circumstance where new interventions are being tested	Inform on delivery, identify areas for improvement
Summative	Evaluation at end of program to sum up whether goals have been achieved and how benefits compare to costs	This approach is useful if the intervention and the environment in which it is carried out are unlikely to change over the period of analysis	Inform whether to expand, continue or end program

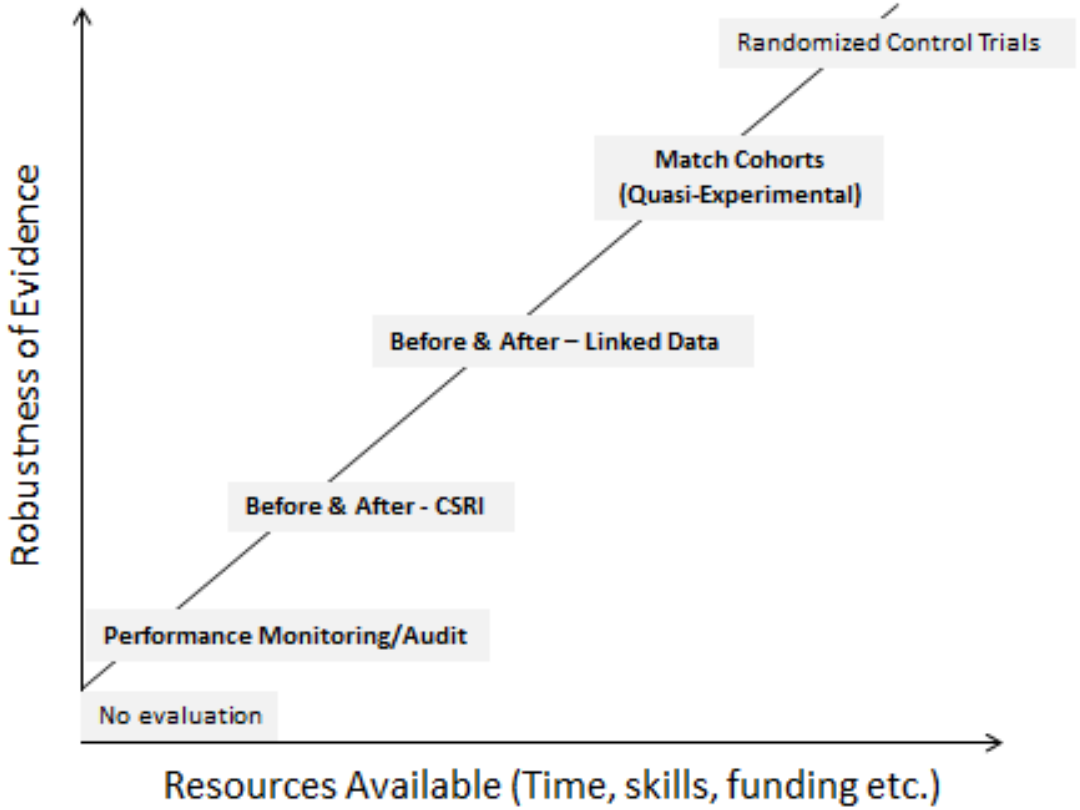
Types of evaluation and purposes (2)

The table below illustrated 3 different methods of which you could adopt to evaluate the impact your services are having on outcomes.

Type	Diagram	Summary	Advantages	Drawbacks & Limitations
Quasi-experiment	T1 Tx 	Random assignment of subjects is not possible, so a comparator is used – subjects alike 'in all important respects', but not a 'true' control group (known as a 'comparison group')	■ Does not have the same level of ethical challenges of RCTs ■ 'Natural experiments' often possible and cheaper – e.g. some areas get service before others	■ How to match the groups? What are the important characteristics you will control for? ■ More room for other things to cause changes because randomisation is missing
Interrupted time series / before and after	T1 Tx 	A comparator is not available, so a single cohort over time is used. Measures are taken at several points over time (or, in the simplest version, 'before and after') and the evaluator looks for changes.	■ Typically feasible practically and ethically ■ Allows the project / evaluator to design and collect information at relatively low cost	■ A range of factors outside the project could cause the observed change (e.g. seasonal effects) ■ Often the case that the right data aren't collected before the intervention began
Single point in time, no comparisons	T1 Tx	No data available for 'before', so you measure 'after' only (and ask participants to hypothesise about what would have happened in the absence of the project)	■ Easy, quick etc ■ Can use assumptions to estimate impact	■ Any reported change could be caused by a wide range of 'other' factors; also relies upon the imagination / memory of key participants

Resources vs. Robustness

The exercise of conducting evaluations can be resource intensive and complex tasks. Outlined below (in bold) are different approaches that can be taken, ranked in order of resources required and level of evidence they can provide. Each approach has its own strengths and limitations and no method is perfect. The advantages and limitations of 3 of these approaches are explored further in the next section.



Measuring Impact using Quantitative methods

Measuring impact (1) – Performance monitoring / audit

Performance monitoring

This uses data to try to determine the progress of a particular intervention or service against a set of targets or objectives. Data are usually collected and used at regular intervals to report progress to management teams, for example, number of people accessing services, number of contacts/therapies delivered. Data from performance measurement might be used to identify areas of concern in a service.

Audit

An audit is an investigation into whether a service or activity is in line with agreed standards, to see if and where improvements can be made. The standards used can be determined by the service providers themselves or externally. The knowledge produced by an audit usually applies only to the particular context in which it was conducted, meaning that it is not possible to conclude that the same effects would be seen elsewhere in different circumstances.

Measuring impact (2) - Before and after using Client Service Receipt Inventory (CSRI)

Before and after using Client Service Receipt Inventory (CSRI)

Example - compare primary care usage for patients before they were seen by your service and after to assess if your service resulted in reducing primary care usage

Measuring the impact

% of patients using primary care in the past 3 months **before** contact

vs.

% of the **same** patients using primary care in the past 3 months **after** contact

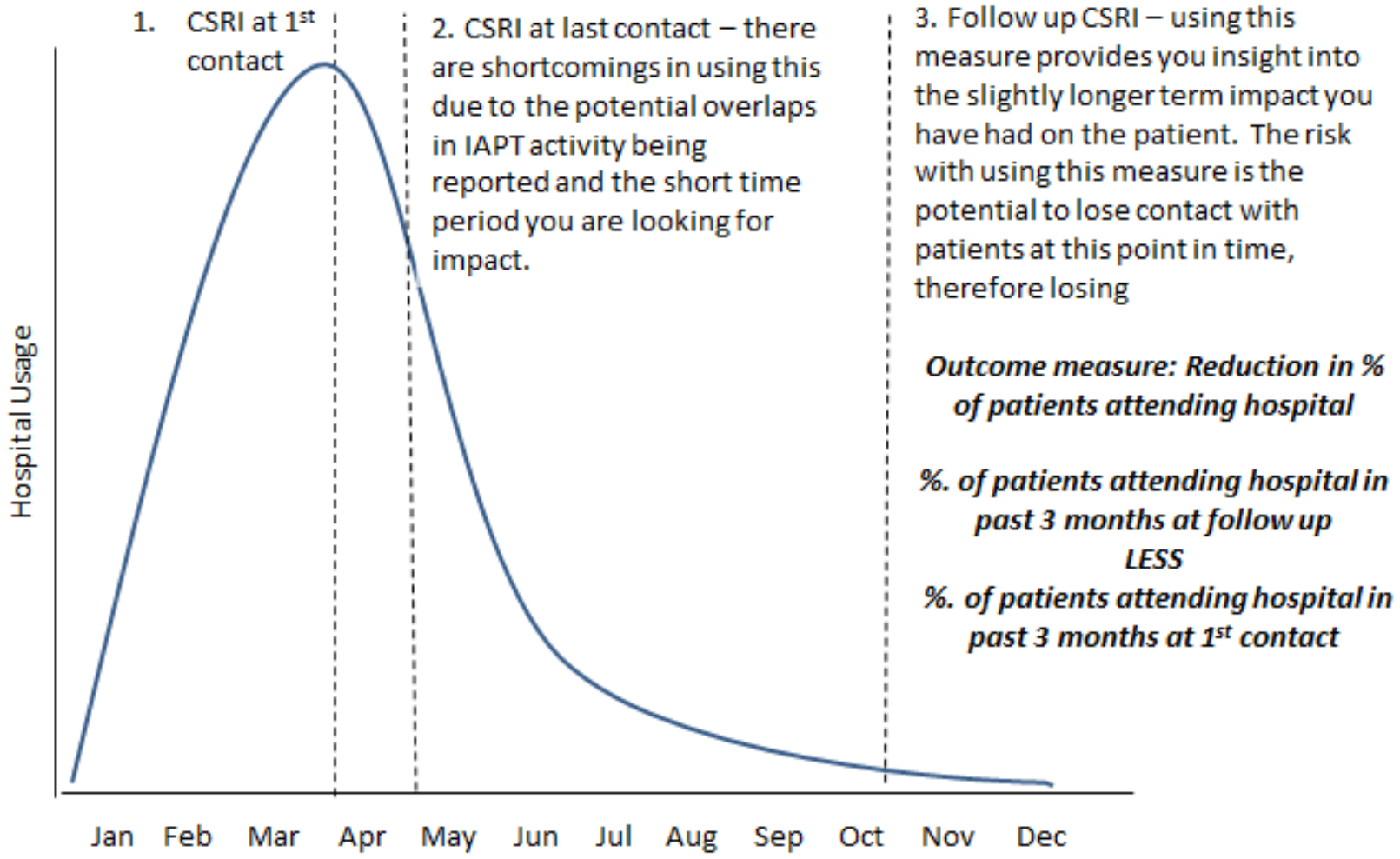
Advantages

Relatively cheap
No need to access and link new datasets
Instant access to data and reporting
Includes data on acute, primary care and community service use that may not be possible to source elsewhere

Limitations

Doesn't prove causality
Risk of losing follow up
Relying on patient reporting accurately
Regression to the mean

Measuring impact (3) - Before and after using Client Service Receipt Inventory (CSRI)



Measuring impact (4) – Before and after using linked datasets

Before and after using linked datasets, for example, IAPT and secondary care data. You can choose the time period to demonstrate the service had an impact. There is no set period and it will be dependent on local circumstances, such as the data available and commissioning time scales.

Example - compare secondary care usage for patients before they were seen by your service and after to assess if your service resulted in reducing secondary care usage

Measuring the impact

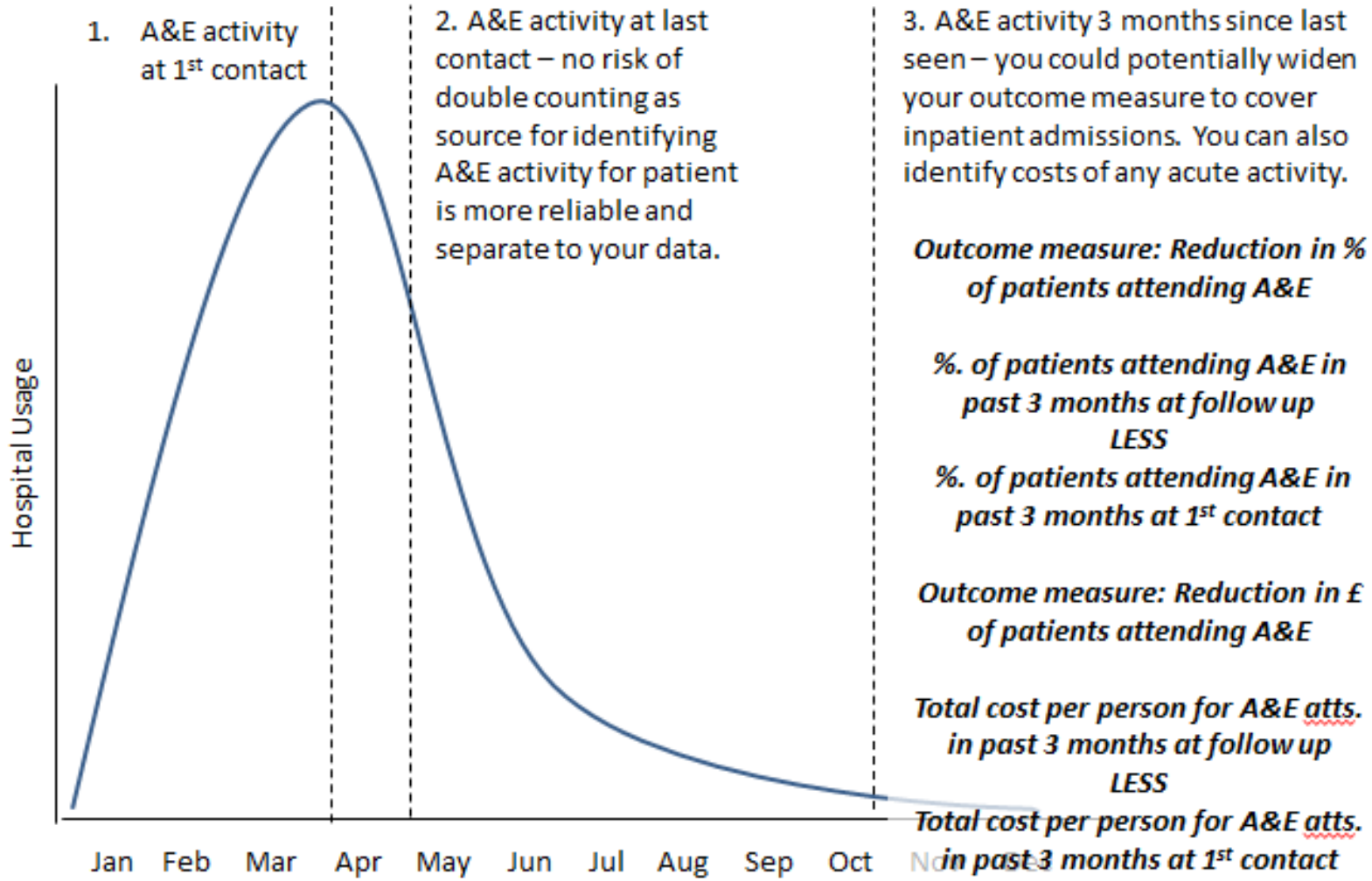
% of patients using secondary care in the past X months before contact

vs.

% of the same patients using secondary care in the next X months after contact

Advantages	Limitations
More reliable method for measuring usage	Doesn't prove causality
Can measure multiple outcomes	More resource intensive to obtain data
Can obtain more accurate costs	Regression to the mean
Can define your own timelines - longer term	Use reference costs which may not be a true reflection of cost

Measuring Impact (5) - Before and after using secondary care linked datasets



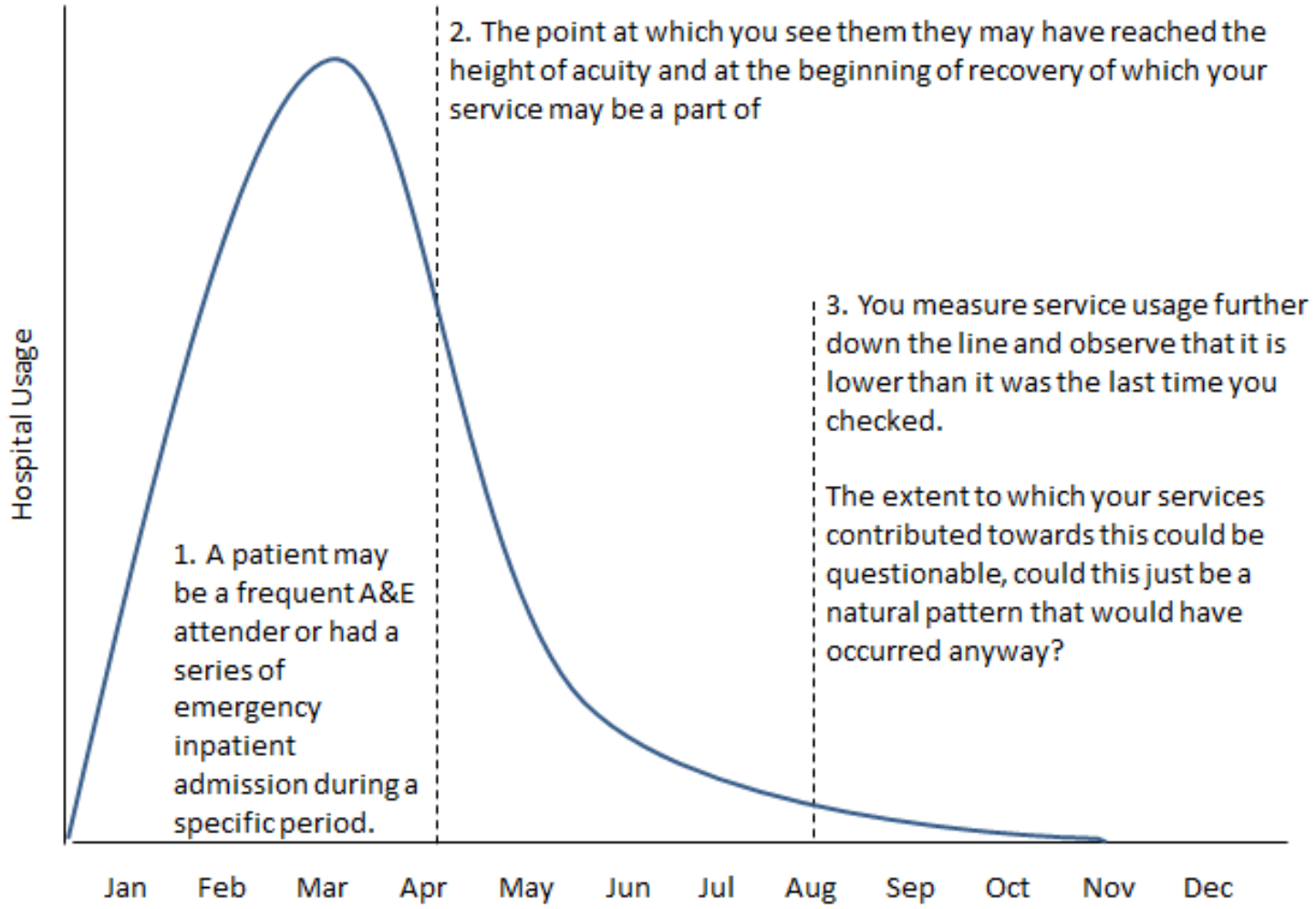
Regression to the mean (1)

The issue of 'regression to the mean' can occur whenever something which varies over time is measured once and is then measured again at a later point in time. Observations made at the extreme the first time round will tend to come back to the population average the second time round.

Regression to the mean is a particular challenge when an intervention is focused on particular types of patients (for example patients with high emergency care use). Say we look at people with frequent hospital admissions at present. On average, these individuals will have lower rates of unplanned hospital admissions in the future, even without intervention. So, if a therapist is working with patients who are currently having frequent A&E attendances, they may notice how the patients have fewer admissions over time. However, this reduction might well have occurred anyway due to regression to the mean, and it cannot necessarily be attributed to the input of the therapist. Regression to the mean occurs simply because after one extreme period, the next period is statistically likely to be less extreme.

The way to control for regression to the mean is to create a matched control group and look for differences between the intervention group and a similar control group. If you are using a before and after approach you can reflect that this may be an issue when writing up the caveats in the evaluation report.

Regression to the mean (2)



Measuring impact (6) – Difference in Difference

Difference in difference design, for example using linked IAPT and secondary care data

Example - compare the changes within the two groups relative to their baseline – and test whether the change in outcome found in the intervention group is greater than that found in the comparison group.

Measuring the impact

% change in secondary care usage X months **after** intervention introduced compared to X months **before** introduced amongst **service users (Case)**

vs.

% change in secondary care usage X months **after** intervention introduced compared to X months **before** introduced amongst **comparison group (Control)**

Advantages	Limitations
Provides a useful what if scenario	Requires technical expertise to conduct matching
Helps minimise regression to mean issue	May not be possible to find a strong match
More robust than before and after measure	May be other hidden factors that explain difference that can't be measured

Matching (1)

Retrospective matching is a way of creating a form of control group which can be used to evaluate whether changes in outcomes for people using a service were any different from what would have been expected anyway from usual care.

The main assumptions is that all things being equal between the two groups

……except only that one group participates in the program and the other does not

……then we can be sure that any difference in outcomes must be due to the program.

By using existing data (usually hospital data), outcomes can be followed (for example A&E attendances) for a group of patients receiving a new service or intervention. Using the same data, the characteristics of the patient and prior history before the start of the intervention can also be looked at, and individuals found who look very similar – but who did not receive the intervention.

The end result is that the impact of the intervention can be measured in terms of differences in the outcomes relative to the matched control group.

This method addresses the challenges of a simple time-trend analysis or before and after comparison, and delivers a much more robust evaluation to assess the impact on outcomes and costs over time. However, there are still limitations to this approach as identifying an appropriate matched cohort is difficult. Not all the factors required can be easily identified in all datasets (e.g. specific long term conditions) and therefore it may not be possible to include these in the matching process.

Matching (2)

There are a number of things to consider when selecting a matched group, such as:

Have very similar characteristics – types of characteristic typically used related to demographic and clinical characteristics such as age, gender, Index of Multiple Deprivation of local area or presence/absence of specific diseases. It is important to bear in mind that there will always be differences between people that cannot be measured.

Have similar potential to gain from intervention – some patients may have the potential to improve at a greater rate than others due to difference in level of acuity/severity in their conditions. Using prior hospital activity (1 month, 6 months, 3 years) as another characteristic for matching in addition to clinical and demographic characteristics can help to reduce this issue.

Not be exposed to other interventions with similar objectives – it is quite possible that people in your matched group may be service users of other services designed to achieve the same or similar outcomes as yours. Finding matched groups that are more local may help in that you will be familiar with the local context and what initiatives/services are in place. You can potentially omit patients using other services from this cohort.

There are methods that can be used ranging from manual identification or more complex and efficiently methods such as regression or propensity score matching to find matched groups. The complexity of the processes mean that considerable expertise is required to develop and run the matching algorithms.

Measuring impact (7) - Difference in Difference

A difference-in-difference approach compares the change in outcome within the intervention group to the change in the outcome within the control group, over two time points.

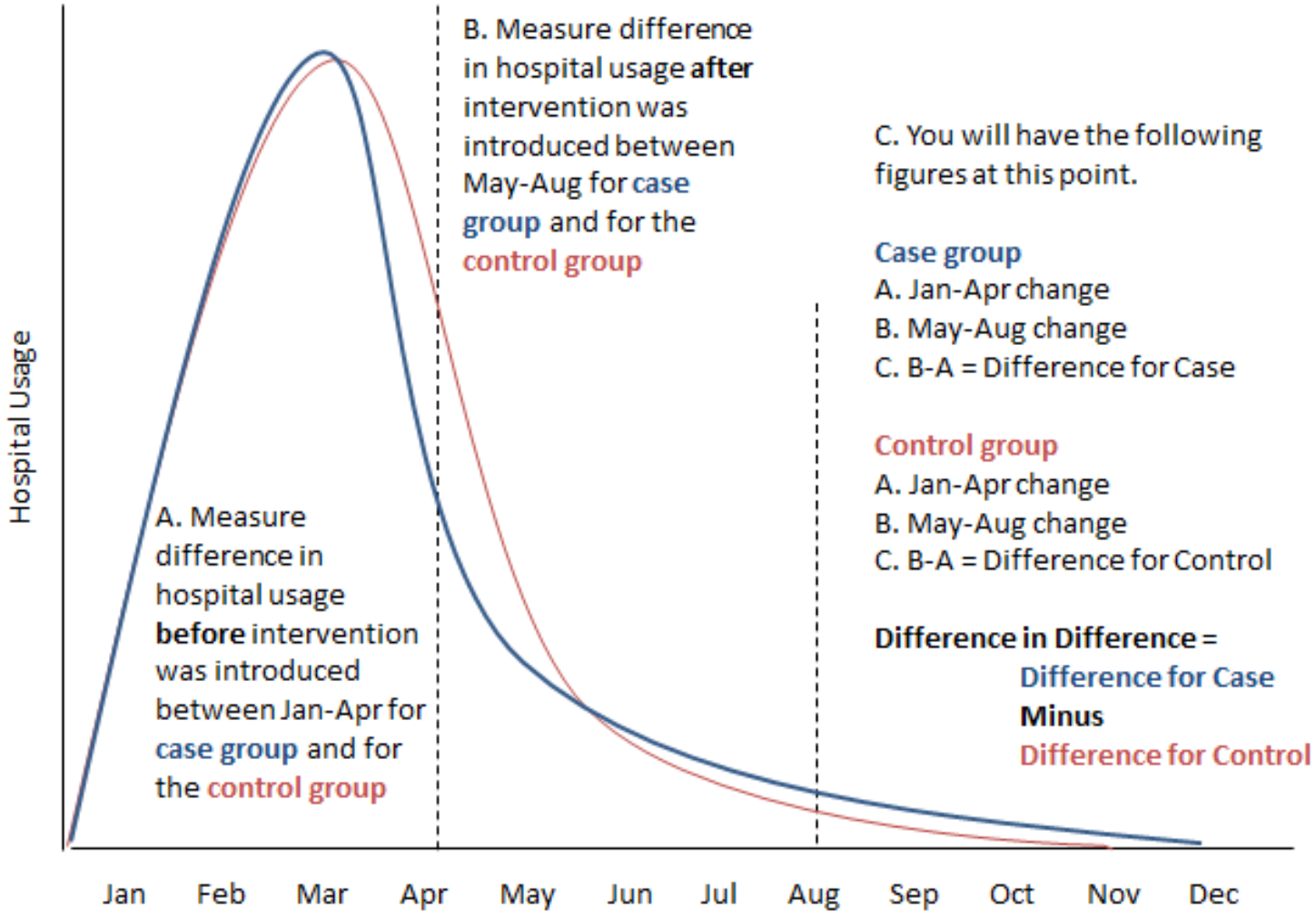
Despite matching there may remain slight underlying differences between the intervention and control groups, so it is generally better to compare the changes within the two groups relative to their baseline – and test whether the change in outcome found in the intervention group is greater than that found in the control group.

The table below gives an example of how a results table may look for a difference-in-difference analysis*. It illustrates that A&E attendances were reduced by 0.5 per person amongst your service users compared to the matched group.

	Your Patients			**Matched Cohort**			
	Before (a1)	After (b1)	Change (c1)	Before (a2)	After (b2)	Change (c2)	Effect (c1-c2)
A&E attendances per person	4	3	-1	4	3.5	-0.5	-0.5

*it is advisable to use confidence intervals when reporting results.

Measuring impact (8) - Difference in Difference



Costing Activity

There are a number of sources of cost data that can be applied to the activity data within local evaluations to evaluate the cost effectiveness of the integrated IAPT services. If you are using metrics derived from SUS data, each activity can be costed using the national Payment by Results (PbR) system. These costs can be compared between either before and after the IAPT intervention or between the case group and the control group depending on the method of evaluation you choose. It is likely that if you source SUS data from a DSCRO the activity will already be costed. More detail on the national PbR tariff can be found at https://improvement.nhs.uk/resources/national-tariff-1719/.

Other activities (Community, Ambulance, Primary Care) are often commissioned on a per capita or block basis and therefore each activity is not costed individually. For this activity it is possible to either use local unit costs (if available) or national reference cost data. There are 2 main sources of national reference costs which are:

- PSSRU Unit Costs of Health and Social Care 2016 - http://www.pssru.ac.uk/project-pages/unit-costs/2016/index.php
- NHS Reference Costs 2015-16 - https://www.gov.uk/government/publications/nhs-reference-costs-2015-to-2016

As the CSRI is based on aggregate data this will require either locally derived unit costs or national reference costs to be used as the basis for the economic evaluation. Example reference costs that can be used with the CSRI , based on the above sources, are available on page 151.

Qualitative methods

Qualitative methods (1)

Evidence is often collected in the form of a performance indicator, which enables you to present quantitative information. These indicators can be attached to any element of your Logic Model. You can also use your Logic Model to structure the collection of qualitative information. For example, you might want to use in-depth interviews with patients to find out what impact your services had. Here are some of the most common ways of collecting evidence. Qualitative methods can be used to measure both the impact of the new Integrated IAPT services and the process undertaken to implement these services.

Method - Case studies

Advantages - Can examine a situation in greater depth than other methods and show the context and process of change. At the individual level, they are useful to illustrate specific points and providing a 'human' element to reporting

Limitations - Generally tells individual / single organisational stories, difficult to generalise findings

Things to consider – Can be used to illustrate specific points, e.g. to show an improvement in a particular setting. Case studies are often best used in combination with other methods that can provide broader quantitative information.

Qualitative methods (2)

Method - Community / large group consultations

Advantages - Get the views of large numbers of people, e.g. by voting on issues. Can raise awareness of your project amongst wider stakeholders

Limitations - Can be dominated by vocal minorities. Can be hard to 'manage' so that feedback is useful

Things to consider - Consider your location and timings. Be clear about what you want – perhaps have specific options to choose from. Give feedback wherever possible and provide refreshments

Method - Focus groups

Advantages - Can be used to explore areas of agreement and divergence / also to allow groups to come to a consensus on ways forward

Limitations - Needs good facilitation and may not gain individual feelings. Can be difficult to arrange

Things to consider - Think about the numbers involved and likely group dynamics. Have a set of key issues to work on and try to end by discussing ways forward. Having another person to take notes is helpful

Qualitative methods (3)

Method - In-depth interviews

Advantages - Can get a lot of rich and detailed information. It is possible to clarify and probe issues. Excellent where topics might be sensitive / difficult

Limitations - Time consuming. Interviewers need appropriate skills. Sometimes hard to interpret a lot of qualitative information

Things to consider - Clarify what the interviewee means in responses. Give the interviewee feedback on results. Be very clear about confidentiality and the basis and purpose of the interview before you begin

Method - Online message boards / other social media

Advantages - Can provide anonymity and allow people to share feelings that they may not do in a group or one-to-one setting

Limitations - Relies on access / skills in using technology

Things to consider - Need to ensure that the people accessing medium are the target audience.

Use a moderator to ask relevant questions to the target audience. You could also use a traditional comments box.

Things to look out for when designing your evaluation

Things to look out for when designing your evaluation (1)

The choice of overall evaluation design should be guided by consideration of the levels of resource vs. robustness of evidence. Whatever the approach taken, there are some common pitfalls and problems to be aware of, such as:

1. Waiting until the end of the project

- Evaluation should be integral to project design. By far the most common pitfall is waiting until the end before asking questions about the effect a project has had – by then it is invariably too late and staff, people, partners have moved on to the next thing!
- Integrate evaluation planning into project design. This is often best done as part of a project bid/plan – say what your project will achieve and how you will know if it has done so.

2. No means of measuring change

- Evaluation is concerned with change. One of the key questions asked by any evaluation is: what has changed as a result of this intervention?
- When you are deciding what information to collect for evaluation, you need to think about measuring change over time – typically starting with a baseline position and assessing change from there.

Things to look out for when designing your evaluation (2)

3. Trying to collect too much

- Collecting a massive array of data and then: not knowing what to do with it; and / or not being sure of its quality; and / or not knowing what it all means is perhaps the second most common pitfall of evaluation!
- Overall, you should aim to collect a few things well, rather than a lot of things badly. Start with a long list of things that it would be nice to have. Then reduce by thinking about what is practical to collect; will really tell you something; and will be useful when you report your results.

4. Reliance on one source

- When collecting evaluative information, the more you rely on one source the less sure you can be that you are right. This allows you to triangulate information.
- As far as is practical you should try to use a range of sources and combine qualitative and quantitative information.

Things to look out for when designing your evaluation (3)

5. Not investing enough

- There is no easy rule of thumb when considering the levels of resources to devote to monitoring and evaluation. Resources devoted to evaluation vary from a typically cited level of 5-10% of project resources, right up to more than the cost of the actual intervention in the case of some large-scale evaluations!
- The key when thinking about self-evaluation is to make information collection part of everyday project activity and to be clear about the responsibility for ensuring it is done.

6. Advocating, not learning

- Most people involved in a project are partial; they have reason to think that it is the right thing to do and are committed to doing it. This presents a challenge to self-evaluation: project staff can end up collecting evidence to support their view, rather than being neutral and curious.
- Follow the data and be prepared to find out that things have not worked the way you thought they would. It is important when approaching self-evaluation to be self-critical, clear and honest about what works and what does not.

Evaluation Summary

Summary

1. Create your logic model that explains the theory behind your services
2. Identify which parts of the model you can measure and how you will go about measuring these
3. Define the question you want to answer
4. Determine how you go about answering your question

    Be pragmatic about your options

    If you feel that the quantitative approach you adopt may be weak then supplement this with using qualitative methods too

    Consider timelines, resources, robustness required

    Most importantly agree on what success looks like with your commissioner before deciding how you will evaluate!

We can provide further advice to address your specific issues (see contact details).

The Strategy Unit.

Data Sharing and Information Governance

NHS
Midlands and Lancashire
Commissioning Support Unit

Introduction

This section provides information on the data sharing likely to be required for the early implementers and the information governance steps required to underpin this sharing. It is a follow on to the healthcare utilisation outcome metrics guide and can be used in conjunction to understand the datasets that need to be sourced to measure the selected metrics. The guide takes you through the process required to share data legally (as shown below) and details some of the challenges this may involve. It is recommended that providers and commissioners work together on this as it is likely both will be required to sign off access to the different datasets.

1. Undertake PIA
2. Decide on your legal basis
3. Create Data Sharing Agreement
4. Share data legally

If you need further support on information governance or data sharing for your evaluation then additional advice is available (see Contact Details).

Considerations for Data Sharing

There are a number of considerations to take into account when choosing the best option for data sharing and the Information Governance (IG) process that supports the sharing. These should all be picked as part of your Privacy Impact Assessment (PIA). The consideration are:

- What are the required datasets and sources?
- Who are the data controllers for each dataset?
- What is the legal basis for sharing?
- Is patient identifiable data required?
- Which organisation will be linking the datasets?
- What method is being used in the evaluation?
- Which organisation will be undertaking the evaluation?
- How will the data be transferred between organisations?
- How will the data be held securely by each organisation?

These considerations are answered in detail within this guide.

Privacy Impact Assessments

Privacy Impact Assessments

At the start of any data sharing project a Privacy Impact Assessment (PIA) should be undertaken by all the organisations involved in the data sharing. A PIA is a tool that is used to identify and reduce the privacy risks of projects, processes and systems. It was launched by the ICO in 2007 and mandated by the Cabinet Office as an outcome of the Data Handling Review of June 2008.

Although it is not currently a legislative requirement, it is mandated in the NHS through the NHS Digital Information Governance Toolkit and undertaking PIAs will become legislative next year with the introduction of the General Data Protection Regulation (GDPR).

Completing a PIA is worthwhile as it means you have done all the work and fact finding you need to transfer across into the associated Data Sharing Agreement. You should also have the agreement of all organisation to share their data at the end of this process which will speed up the signing of the DSA and the sharing of data. PIAs are generally split into 2 parts: a set of screening questions to determine if a full PIA is needed and the full PIA. A list of the questions is included on the next slide.

An example PIA from the North Staffordshire Early Implementer can be found on Yammer.
Access to the page can be requested by e-mailing ENGLAND.MentalHealth@nhs.net.

What is included in a PIA? (1)

- Pre-PIA Screening questions

    1. Will the project involve the collection of new information about individuals?
    2. Will the project compel individuals to provide information about themselves?
    3. Will information about individuals be disclosed to organisations or people who have not previously had routine access to the information?
    4. Are you using information about individuals for a new purpose or in a new way that is different from any existing use?
    5. Does the project involve you using new technology which might be perceived as being privacy intrusive? For example, the use of biometrics or facial recognition.
    6. Will the project result in you making decisions about individuals in ways which may have a significant impact on them? e.g. service planning, commissioning of new services
    7. Is the information to be used about individuals' health and/or social wellbeing?
    8. Will the project require you to contact individuals in ways which they may find intrusive?

What is included in a PIA? (2)

- If any of the screening questions have been answered "YES", then you will need to continue with the Privacy Impact Assessment Questionnaire (next page).
- As the IAPT Early Implementer Evaluations will require information about individuals be disclosed to organisations or people who have not previously had routine access to the information and is a new purpose for using the information they should have a full PIA

- PIA Questions

1. Description of data:
2. What is the justification for the inclusion of identifiable data rather than using de-identified/anonymised data?
3. Will the information be new information as opposed to using existing information in different ways?
4. What is the legal basis for the processing of identifiable data? If consent, when and how will this be obtained and recorded?
5. Who will be able to access identifiable data?

What is included in a PIA? (3)

6. Will the data be linked with any other data collections?
7. How will this linkage be achieved?
8. Is there a legal basis for these linkages? This may be the same basis as question 4 or may require an additional legal basis
9. What security measures will be used to transfer the data?
10. What confidentiality and security measures will be used to store the data?
11. How long will the data be retained in identifiable form? And how will it be de- identified? Or destroyed?
12. What governance measures are in place to oversee the confidentiality, security and appropriate use of the data and manage disclosures of data extracts to third parties to ensure identifiable data is not disclosed or is only disclosed with consent or another legal basis?
13. If holding personal i.e. identifiable data, are procedures in place to provide access to records under the subject access provisions of the DPA? Is there functionality to respect objections/ withdrawals of consent?
14. Are there any plans to allow the information to be used elsewhere either in the CCG, wider NHS or by a third party?

Legal Basis for Sharing Data

Legal Basis for Sharing Data (1)

In order to share data there must be a legal basis that allows the sharing of personal identifiable data between the parties. This must be a piece of legislation that states that you can process person confidential data for a given purpose/s.

It is important to find the most appropriate legal basis to match your purpose and local requirements as the legal basis you choose may impose restrictions on the provision of data (e.g. limitations on amount of data that can be accessed or processed). The legal basis can be pseudonymisation where there is a section 251 approval in place to allow an activity to take place without requiring consent to be gained as long as a certain process is followed. There is currently a Section 251 in place covering IAPT and acute SUS data and therefore additional applications are not required for these datasets, if requested by commissioners.

Legal Basis for Sharing Data (2)

For the purpose of the IAPT Early Implementer Evaluations the most likely legal bases are explicit consent and pseudonymisation as other options will either to be unavailable due to the purpose for sharing (e.g. implied consent can only be used for direct patient care), too restrictive (e.g. anonymisation does not the support person level data linkage required for the evaluation) or too time consuming (e.g. requesting a specific Section 251 approval for each local evaluation may take more time than is available for the evaluation).

This section details these 2 main options and how they can be applied to the local evaluations required for the IAPT Early Implementer sites.

For information, the legal basis for flowing IAPT data to NHS Digital is a commencement order, which is a type of Direction, issued by the Department of Health. It allows for IAPT MDS data to be collected by IAPT services and to flow to NHS Digital for analysis and reporting. The additional LTC/MUS data are covered by the Data Services for Commissioners Directions.

Pseudonymisation

Pseudonymisation is a procedure by which the most identifying fields within a data record are replaced by one or more artificial identifiers, or pseudonyms. There can be a single pseudonym for a collection of replaced fields or a pseudonym per replaced field. For the early implementers this is likely to mean that the NHS number is replaced by a pseudonym that is irreversible and any other identifiable data is either removed (e.g. name, full address) or replaced with less identifiable data (e.g. date of birth is replaced by age, postcode is replaced by postcode district or lower super output area (LSOA)).

There are 2 options for pseudonymising your datasets. These are:

- Pseudonymisation on landing using the local Data Services for Commissioners Regional Office (DSCRO)
- Pseudonymisation at source using specialist pseudonymisation software such as Open Pseudonymiser (see link)

There are a number of datasets that can be provided by the DSCRO under S.251. These can be used without consent if it is not linked to local primary care data. Pseudonymisation needs to be applied carefully as it can give rise to re-identifying patients and if that is the case if there is no other legal basis then this is a breach of the Data Protection Act 1998. The main advantage of pseudonymisation is that it may be quicker to set up than obtain consent.

Data Services for Commissioners Regional Offices (DSCROs)

NHS Digital's responsibilities as set out in the Health and Social Care Act 2012 include the collection, analysis and presentation of national health and social care data. The Act also gave NHS Digital the powers to act as a safe haven and collect, hold and process personal confidential data (PCD) for purposes beyond direct patient care.

Directions from NHS England to NHS Digital establish the Data Services for Commissioners (DSfC) programme. The DSfC programme has established a number of regional processing centres, known as Data Services for Commissioners Regional Offices (DSCROs). These regional offices support the information needs of commissioners with the provision of appropriate data controls. There is no current arrangements to allow the transfer of data from DSCROs to providers.

DSCROs perform their services with staff from commissioning support units (CSUs) who are seconded into the NHS Digital and work with data in the regional processing centres. Staff follow strict rules on accessing, analysing and processing data. The powers granted to the organisation by the Health and Social Care Act 2012 mean that staff are operating within the approved legal framework. The service allows clinical commissioning groups (CCGs), local authority public health teams and specialised commissioners to plan and commission those healthcare services in their local area and nationally using the services provided through the DSCROs. Depending on local contracting arrangements there may be an additional cost for the DSCRO to process and link the IAPT data.

Pseudonymisation on Landing

Pseudonymisation on landing is the process where clear (patient identifiable) data is shared with the DSCRO who pseudonymise the data before making it available for linkage and analysis. It needs to be true pseudonymisation on landing (within "black-box" – no identifiable data accessible by processor) and the outputs (whether aggregated or at patient level) still need to be handled in a secure environment given the risk of re-identifying patients when linking information together.

Once the data is matched identifiers (NHS Number, Date or Birth, Postcode, etc.) need to be stripped out so only pseudonymised data is available for analysis. Data for any person who has opted out of data sharing should also not be shared. This method still requires Data Sharing Contract and Data Sharing Agreements to be in place.

For early implementer sites, this means that clear Integrated IAPT data can be shared by providers with the DSCRO for them to pseudonymise using the same process and key used for the other datasets they hold (SUS and possibly local flows for community, ambulance and mental health activity). The data would then need to flow to commissioners for data linkage who would be able to create an aggregate dataset for providers to analyse if required. This would allow early implementers to link the data using the common pseudonym whilst reducing the risk of re-identification. This method is not appropriate for Primary Care data sharing unless consent has been given by the individual and when it was given is recorded.

Pseudonymisation at Source (1)

Pseudonymisation at source is the process where the same pseudonymisation software (such as Open Pseudonymiser) with a unique key for the project is applied to pseudonymise all datasets before they are shared. This creates a unique identifier (usually based on the NHS Number) for each person that is consistent across all datasets, and can therefore be used for data linkage, but is not identifiable. All identifiable should be removed (e.g. name) or replaced with a less specific value (e.g. date of birth replaced by age).

There needs to be a separation between the organisation providing the key and the organisation providing the data linkage to ensure there is no ability to re-identify. Essentially this means if any organisation has access to the key, their pre-pseudonymised dataset and the linked dataset they have the ability to identify patients. It is not enough to say that organisations will not try to re-identify any individual, steps should be taken to remove this possibility as much as it practicable.

Organisation providing the linkage must have strict controls and not be able to re-identify individuals. Pseudonymised outputs (whether aggregated or at patient level) need to still be handled in a secure environment given the risk of re-identifying patients when linking information together. This method still requires Data Sharing Contract and Data Sharing Agreements to be in place.

Pseudonymisation at Source (2)

For early implementers this would mean that the Integrated IAPT data would be irreversibly pseudonymised by the service providers before it is shared with the organisation undertaking the linkage. Separate healthcare utilisation data (e.g. SUS data) would then be irreversibly pseudonymised with the same key by the organisation holding the data (e.g. DSCRO). The pseudonym will be based on the NHS Number and all other identifiable data will be removed or replaced by non-identifiable data (e.g. date of birth replaced with age). The pseudonyms would then be used to match individuals in all the datasets.

To ensure this is true pseudonymisation at source the key cannot be shared with the organisation(s) undertaking the data linkage and / or analysis (i.e. if the CCG is undertaking the linkage and analysis of the datasets they should not be able to access the pseudonymisation key). This method relies on each organisation supplying data to have a good level of validated NHS Number recording before pseudonymisation to ensure the linkage creates exact matches.

Section 251

- Section 60 of the Health and Social Care Act 2001 as re-enacted by Section 251 of the NHS Act 2006 allows the Secretary of State for Health to make regulations to set aside the common law duty of confidentiality for defined medical purposes.
- The Regulations that enable this power are called the Health Service (Control of Patient Information) Regulations 2002. Any references to 'section 251 support or approval' actually refers to approval given under the authority of the Regulations. The HRA took on responsibility for Section 251 in April 2013, establishing the Confidentiality Advisory Group (CAG) function.
- Section 251 came about because it was recognised that there were essential activities of the NHS, and important medical research, that required the use of identifiable patient information – but, because patient consent had not been obtained to use people's personal and confidential information for these other purposes, there was no secure basis in law for these uses.
- Section 251 was established to enable the common law duty of confidentiality to be overridden to enable disclosure of confidential patient information for medical purposes, where it was not possible to use anonymised information and where seeking consent was not practical, having regard to the cost and technology available.
- The relevant section 251 approval for the IAPT Early Implementers is CAG 2-03(a)/2013 which allows DSCROs to provide pseudonymised IAPT and SUS data to Accredited Safe Havens (ASHs).

Consent

- Consent will be required for any data that will be linked to primary care data or is coming into the organisation in identifiable format to then be pseudonymised. Most multi-agency sharing is done on a consent basis and there are two type of consent: Implied and Explicit, however, only explicit consent can be used in these circumstances as the data is being used for a secondary purpose rather than direct patient care.
- Explicit consent must be fully informed and freely given but it can be removed at any time. It does not have to be written but the timing of the consent must be recorded. Consent can obtained at the time of sharing or via a high level communications campaign (such as care.data). The best option for the IAPT early implementer providers will be to build the consent process into the current process for enrolling patients into the service.
- The main advantage is the data can be used for the purpose requested but the disadvantage is that consent can be withdrawn at any point and processes would need to be put in place to deal with any withdrawn consent.
- Explicit consent will be required by early implementers using primary care data to derive healthcare utilisation metrics. It will also be required for other datasets where pseudonymisation is not possible (e.g. if NHS Number collection is poor then additional data will need to be shared for matching and it is unlikely that pseudonymisation would work effectively).

Data Sharing Agreements

Data Sharing Agreements (1)

Data Sharing Agreements (DSAs) set out a common set of rules to be adopted by the various organisations involved in a data sharing operation and can form part of a contract between organisations. The content of your DSA will be informed by your responses to the PIA and should be straightforward to agree between all organisations if they have all signed up to the PIA. There are a number of DSA templates available (see useful resources for links to some examples) if you do not have a template locally. The DSA should detail the following:

- Purpose for sharing data
- The organisations that will be involved in the data sharing
- Data items to be shared including a detailed data specification, the scope of what will be shared to ensure it is proportionate and a process to ensure accuracy of data
- Legal basis for sharing
- Access and individuals' rights

Data Sharing Agreements (2)

- Retention and deletion processes
- Technical and organisational security arrangements, including for the transmission of the data and procedures for dealing with any breach of the agreement
- Procedures for dealing with Data Protection Act or Freedom of Information Act access requests, or complaints or queries
- Timescale for assessing the ongoing effectiveness of the data sharing initiative
- Procedures for dealing with the termination of the data sharing initiative

Data Sharing

Data Sharing

Once you have undertaken your PIA, have an agreed legal basis for sharing and have a DSA signed by all parties you can legally share your data for the evaluation. This process will involve sharing the pre-defined datasets for a specific purpose between the Data Controller(s) and the Data Processor(s). The transfer of the data will need to be done using a secure method with pseudonymised data wherever possible. Once the data is received by the Data Processor it should be held in a pseudonymised form but treated with the same security levels of identifiable data.

The details of the datasets shared by each Data Controller, the purpose for which the data is being shared, the transfer process and the security processes for holding the data will be include in the DSA.

This section provides additional information to help the Early Implementer sites design and document these processes for sharing data to support local evaluation.

Datasets \ Sources

There are a number of datasets that can be sourced to support the local evaluation. The selection will be based on the healthcare utilisation outcome measures selected and the method used for evaluation (see the Healthcare Utilisation Metrics section on this guide). You will need to be specific about the data items required (demographic, activity, cost data, etc.) and the scope of each dataset (what time period do you need, do you need activity for patients who have not received an IAPT service to act as controls in your evaluation).

Below is a list of the most likely datasets (and potential source(s)) that will required for the local evaluation.

- National datasets
    - Local source of IAPT Dataset (IAPT Provider(s))
    - Secondary User Service (SUS) acute inpatient, outpatient and A&E data (DSCRO)
- Local data flows
    - GP Practice data (GP Practices / DSCRO)
    - Ambulance data (Provider(s) / DSCRO)
    - Community services data (Provider(s) / DSCRO)
    - Mental Health services data (Provider(s) / DSCRO)

Potential Issues Sourcing Data (1)

The Strategy Unit.

There are a number of potential issues you may encounter when sourcing data for your local evaluation and below are some suggestions on mitigate these issues.

Issue	Solution
Identifying the best source of each dataset	Check what datasets are held by your local DSCRO. They will hold data on acute activity (SUS) that can be linked but may also but other datasets may be held by other provider organisations
Ensuring the datasets can be linked correctly.	If possible it is better to source all datasets separately and then link the datasets yourselves, using a pseudonymised NHS Number, as part of the local evaluation. If the data is linked by the DSCRO or another organisation then you will need to define precisely how it is linked and the outputs needed for the local evaluation.
Ensuring you have the right Information Governance (IG) solution in place to share the data	See IG options described earlier in this section
Some local datasets may not include individual activity costs	More information on costing activity can be found in the evaluation design section (see page 37)

Potential Issues Sourcing Data (2)

Issue	Solution
There are no national data definitions for some datasets (including Primary Care and Ambulance data)	Ensure any local datasets you have a specification that includes any lookups for any coded data. If you are sourcing the same data from multiple organisations it will be helpful to develop a standard data specification and template to ensure you source all the fields required in the right format and the data is comparable across organisations.
Sourcing Primary Care data as the data controllers for Primary care data are each GP practice and an extraction service is required to source the data	If a Primary Care dataset is already extracted locally with an established data sharing process you may be able to put in additional data sharing agreements and then pseudonymise this dataset for your evaluation. Where this is not in place it is likely to be a time consuming process to get all the practices to sign data sharing agreements and there may be an additional cost for the extraction service.

Purpose for Data Sharing (1)

In order to share data between organisations you will need to be specific about the purpose for which you are sharing data. This will be picked up as part of the PIA process and then be reflected in and Data Sharing Agreement(s). Below is an example of a purpose for sharing from the North Staffordshire Data Sharing Agreement that could be tailored for each early implementer site:

"The purpose of the information sharing agreement is to allow the impact of the integrated IAPT service to be measured and the resulting data to be used by:

a) Providers responsible for the direct care of their patients. They will be allowed to see identifiable data from the integrated IAPT report for both evaluation of clinical effectiveness and for direct care purposes.

b) North Staffordshire CCG, Stoke on Trent CCG and Midlands and Lancashire CSU (processing on behalf of North Staffordshire and Stoke on Trent CCGs) will use the data for other purposes in anonymised form only. This data is not Personal Confidential Data and will not identify the patient. This will be used for the evaluation of cost savings and development of business case.

Data will not be shared with any other organisation or named individual not explicitly referred to within this agreement.

Purpose for Data Sharing (2)

The integrated IAPT service data will be made available to the service in order to support them to evaluate the impact of their service i.e. to monitor the frequency of attendances to Accident and Emergency (A&E) or the numbers of Non-Elective (NEL) admissions. The report will also review contacts with other parts of the emergency / unplanned care pathway (e.g. ambulance call outs).

These individuals will have long term conditions, multiple co-morbidities, possibly frail and vulnerable, and are at risk of requiring urgent unplanned intervention."

Data Controllers

The Data Protection Act (DPA) defines the "data controller" as a person who (either alone or jointly or in common with other persons) determines the purposes for which and the manner in which any personal data are, or are to be processed. In practice this is likely to be the Caldicott Guardian of the organisation that holds the data and they will be required to sign off both the PIA and DSA.

The data controllers for the relevant datasets will be:

- IAPT Data – Local IAPT Provider(s)
- SUS Acute Data – DSCRO
- Primary Care Data - Each GP Practice
- Local Community, Mental Health and Ambulance - either the DSCRO if they already hold this data or each provider if sourced directly

Data Processors

The Data Protection Act 1998 (DPA) has the following definition:

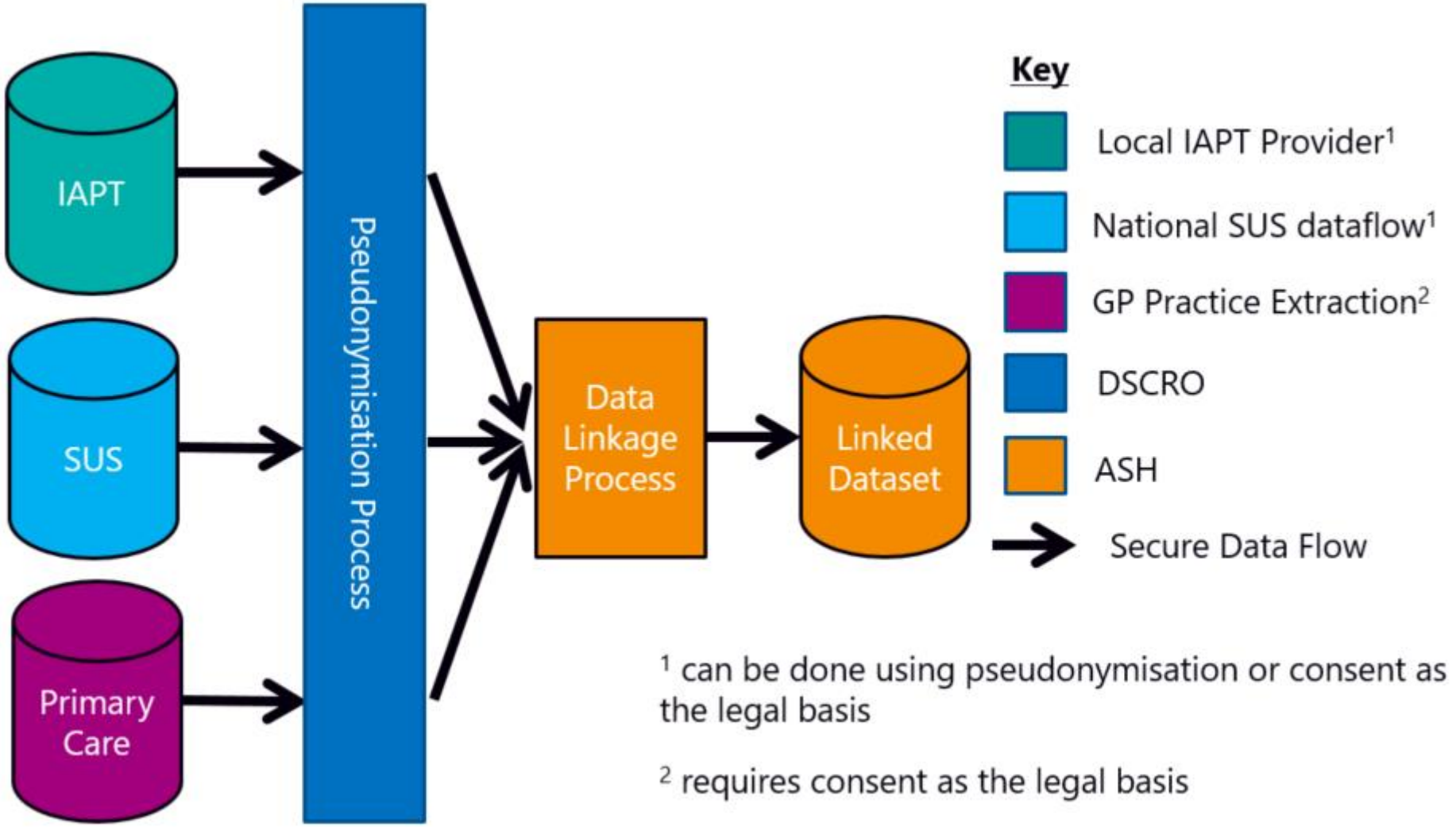
- The "data processor", in relation to personal data, means any person (other than an employee of the data controller) who processes the data on behalf of the data controller.
- "Processing", in relation to information or data means obtaining, recording or holding the information or data or carrying out any operation or set of operations on the information or data, including—
    a) organisation, adaptation or alteration of the information or data,
    b) retrieval, consultation or use of the information or data,
    c) disclosure of the information or data by transmission, dissemination or otherwise making available, or Data controllers and data processors
    d) alignment, combination, blocking, erasure or destruction of the information or data
- For the purpose of the Integrated IAPT evaluation the data processor(s) will be the organisation(s) who undertakes the data linkage and / or the analysis. This could be the IAPT provider, CCG or a CSU and there are implications for how the data can be shared depending on who is selected as the data controller. For example, if the CCG or CSU are an Accredited Safe Haven (ASH) then the current 251 covers the sharing of the required datasets between the DSCRO and an ASH.

Data Sharing Options

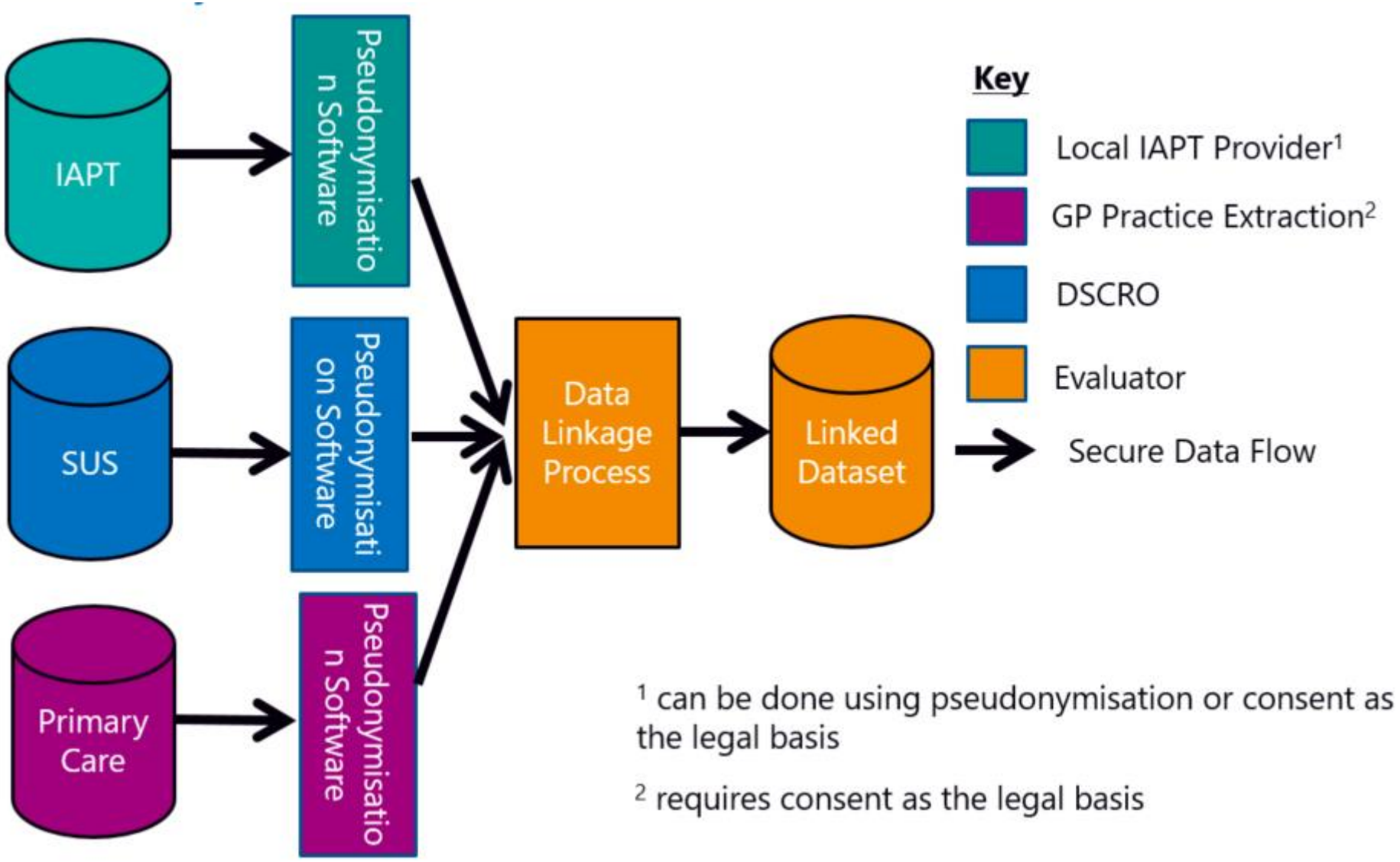
There are 3 main data sharing options that can be used by the early implementers (although other options may be more appropriate locally) and each will require a specific legal basis. The most appropriate option will be based on which organisation is undertaking the analysis for the evaluation (the data controller), how data is being shared (clear to be pseudonymised on landing or pseudonymised at source), the legal basis for sharing and any local arrangements. The main options are:

- **DSCRO to Accredited Safe Haven (ASH) –** the current Section 251 allows data to be pseudonymised by a DSCRO and shared with an ASH in pseudonymised form. ASHs are generally commissioning organisations and locally will be easy to identify as they will be any organisation that is currently receiving pseudonymised SUS data from the DSCRO.
- **Direct sharing between providers –** this would involve data being shared with the IAPT provider for analysis. This would need to use consent as the legal basis as each provider organisation has access to the clear NHS Number and therefore would have the ability to identify the patients in other datasets.
- **DSCRO \ Provider to third party –** depending on who the third party undertaking the analysis is and their ability to access clear data. Consent is always an option to share data with a third party but you may also be able to use pseudonymisation at source if the third party has no access to the key used to create the pseudonym and each dataset has good NHS Number coverage.

Linking IAPT and Physical Health Data using a DSCRO



Linking IAPT and Physical Health Data using Pseudonymisation at Source



Data Transfer Options

All data sourced will need to be transferred securely between organisations and details of how this will happen recorded in the PIA and DSA. The most appropriate option will depend on the size of files that are being transferred, access to the individual systems and local best practice. The main options for data transfer are:

- NHS Mail – Patient identifiable can be transferred via NHS Mail if the e-mail is encrypted. Data can be shared with non-NHS Mail accounts using the encryption guidance - https://s3-eu-west-1.amazonaws.com/comms-mat/Training-Materials/Guidance/encryptionguide.pdf. The maximum attachment size for all emails is 35MB and therefore this method cannot be used for larger files.
- NHS Secure File Transfer – Files can be transferred via the NHS Secure File Transfer (SFT). This is a web application that can be accessed at https://nww.sft.nhs.uk/sft/upload1. The service is on the N3 network and is therefore not appropriate if organisations are unable to access a N3 enabled terminal. The maximum file is 1GB and therefore this method cannot be used for larger files.
- Local secure web portal – local organisations may have the own secure web portal that can be used to transfer data. There may be local best practice processes that require organisations to use their own secure web portal for all data transfer.

Data Security

Data for analysis should be pseudonymised and held with the same level of security as if it were patient identifiable data. This means it should be held in a secure location with access limited to those people working on the evaluation. The organisation undertaking the analysis should be IG Toolkit Level 2 Compliant to ensure they have right training and processes in place across the organisation.

The security arrangements should be detailed in the DSA and should include the process for granting access to the data as well as how the data will be held securely by the Data Processor. An example can be seen in the example from the North Staffordshire Early Implementer which is available on the IAPT Early Implementers Yammer page. Access to the page can be requested by e-mailing ENGLAND.MentalHealth@nhs.net.

The Strategy Unit.

Data Linkage

NHS
Midlands and Lancashire
Commissioning Support Unit

Introduction

This section covers the process for linking the datasets once they have been shared for the local evaluation. The process requires careful coordination between partners and attention to detail from analysts. This section takes you through the practicalities of conducting data linkage and the issues that may arise.

This section covers the following:

- What is required to link person level data
- The data linkage process
- Tracking outcomes across linked datasets
- How to track data over time
- Common data quality issues and solutions

If you require further advice on this topic then additional support is available (see Contact Details).

What is required to link person level data?

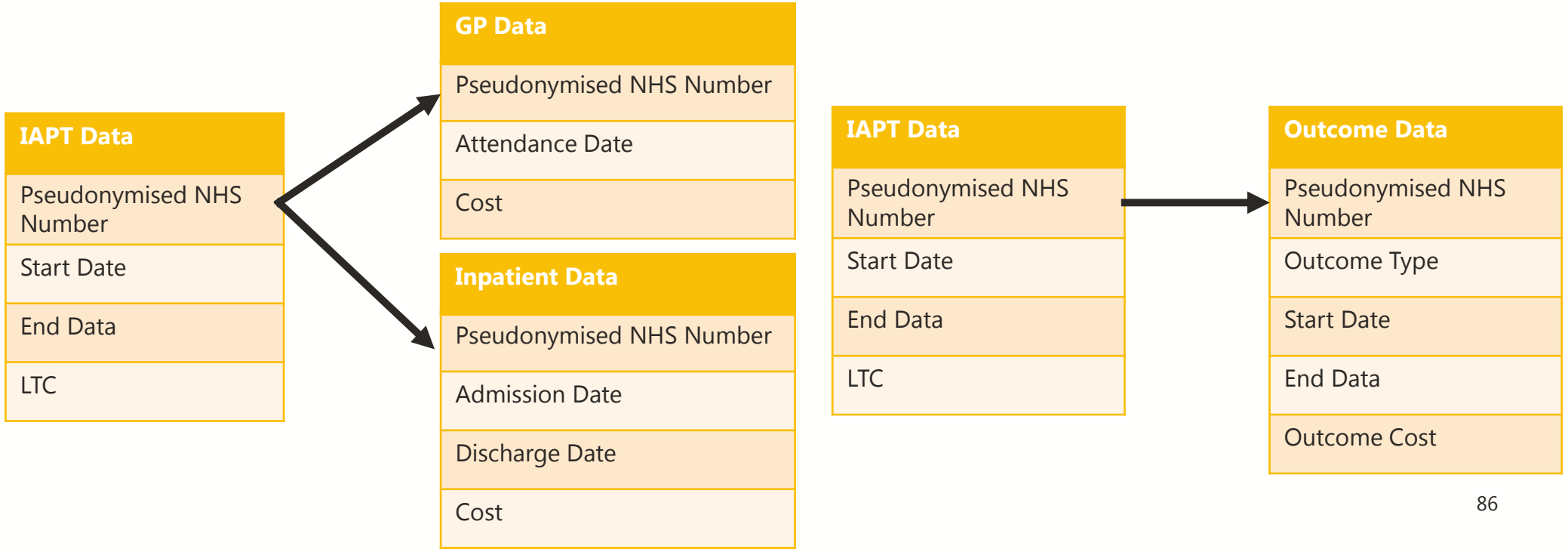
There are a number of factors that need to be in place to allow you to link person level data for local evaluations, such as:

- Data that is routinely collected at a person level
- High quality data is required from all partners to ensure the data can be linked
- A consistent Identifier in all datasets (e.g. NHS Number) that can be used for matching individuals
- An agreed IG Framework including a legal basis to share each dataset, a defined purpose as to why the data needs to be shared and Data Sharing Agreements signed by all parties (see Information Governance section)
- An understanding of who will be undertaking the data linkage. If the data is linked in the DSCRO then you will need to specify how this should be done and the outputs you require.
- Senior buy-in from each partner to unblock any data sharing and information governance issues

The data linkage process

Linking datasets is relatively straightforward and requires you to have a single consistent identifier (pseudonymised NHS Number) in each dataset. This identifier can linked using joins within a database. The way the data is linked will depend on the evaluation method but should at least include all records in the healthcare utilisation dataset for every person in the IAPT dataset (i.e. every person who had an IAPT appointment in the period you are evaluating). There are a number of issues that can occur when linking datasets and more information on these is available on page 91.

If you are tracking outcomes from more than dataset you will need to link them separately unless you can create a single table containing all outcomes (see examples below).



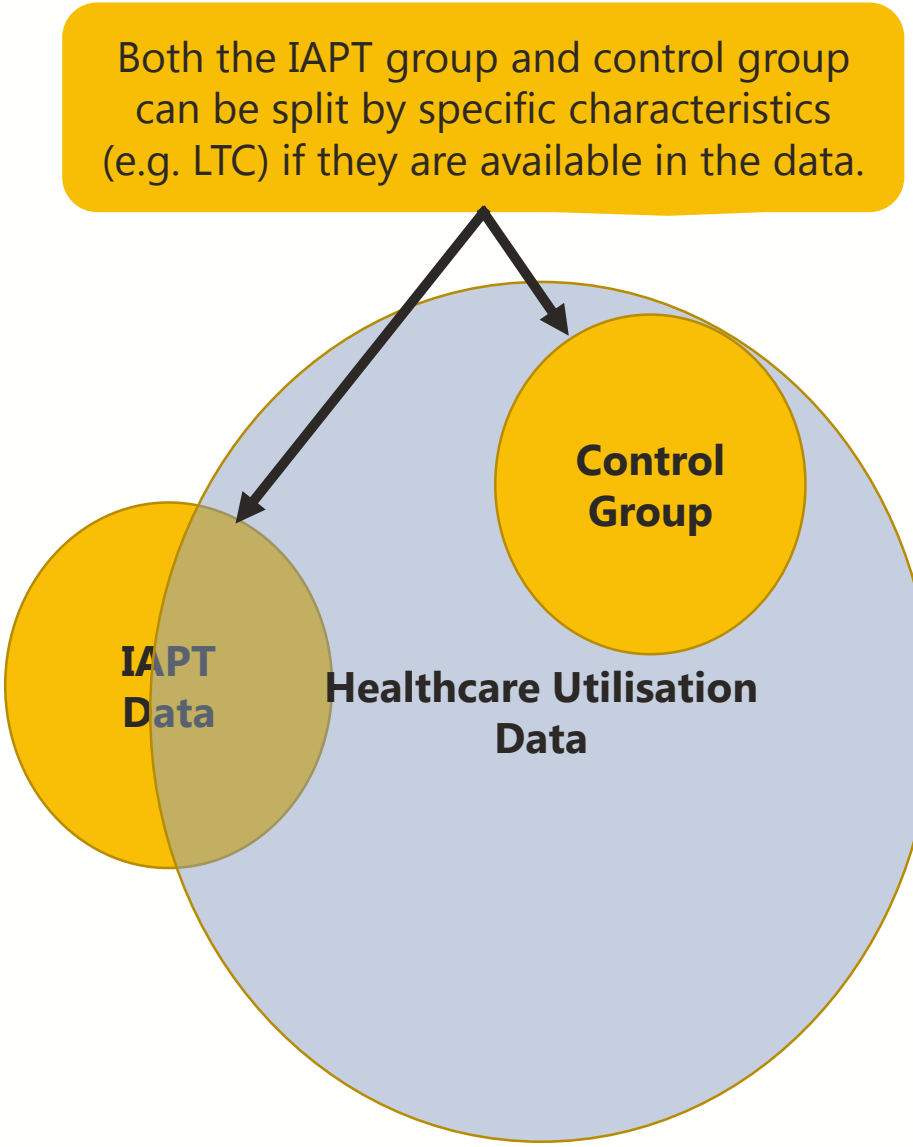
Tracking outcomes across linked datasets

In order to track outcomes across the linked datasets you need to be able to identify the overlaps in the datasets. Particularly you need to identify the health care utilisation data for those people who had IAPT appointments in the period you are evaluating.

You will need healthcare utilisation for at least 3 months before the first IAPT appointment and 3 months after the last IAPT appointment. These periods may be extended based on the assumptions you have made about the impact of your service.

If you are undertaking a matched cohort study you will also need healthcare utilisation for people who did not have an IAPT service to identify and evaluate a control group.

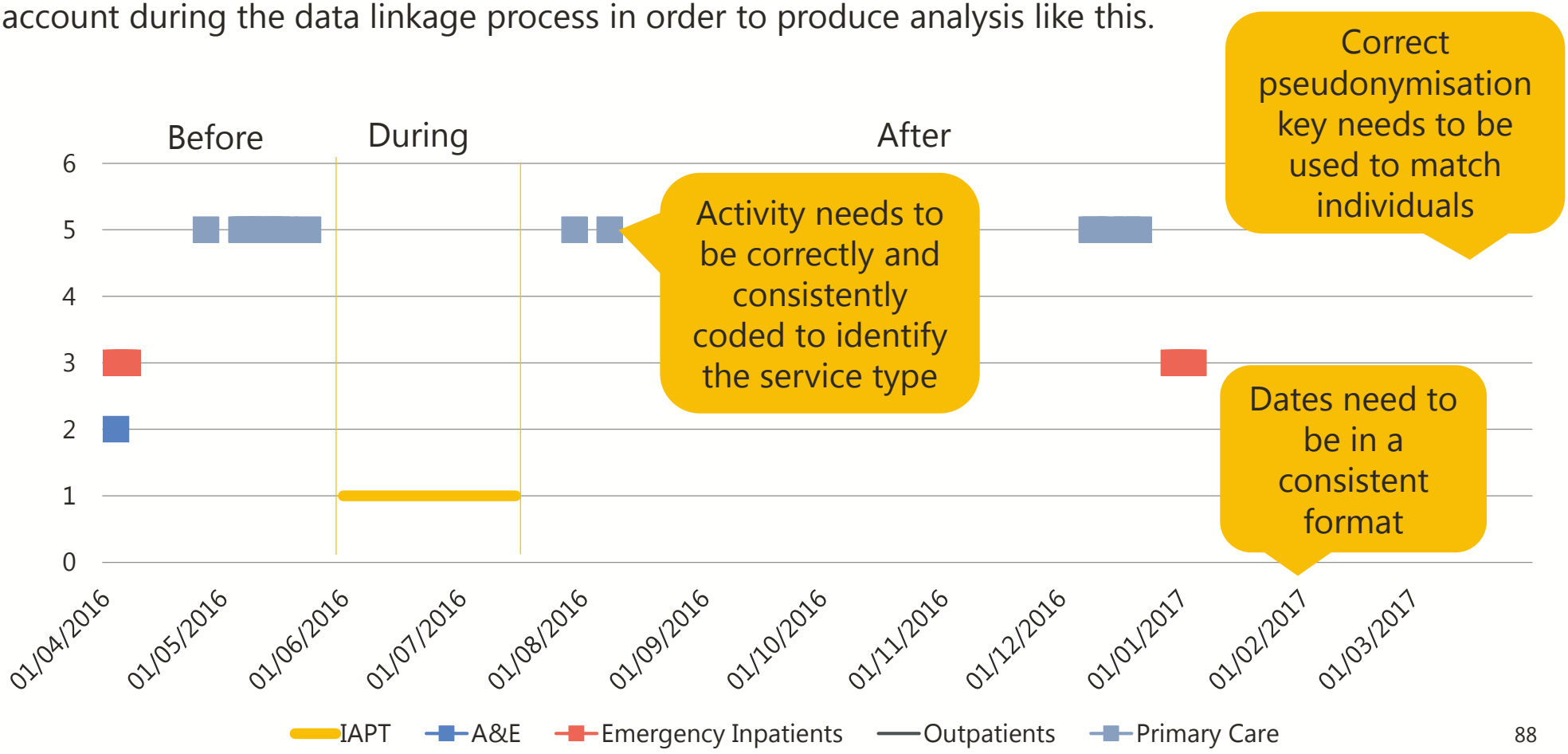
If you want to stratify your IAPT group by specific characteristics, such as Long Term Condition, then you need to ensure these people can be identified in the IAPT dataset. If you are planning a matched cohort study you will also need to be able to identify these characteristics in the healthcare utilisation dataset.



Tracking over time

Linking the integrated IAPT data to other healthcare utilisation datasets allows you to track activity for your cohort over time. This can be used to support a before / after study design (see page 28) or a matched cohort using a difference on difference design (see page 32).

This is done by linking the datasets using the NHS Number and then ordering all the activity for an individual chronologically. However, there are a number of practical considerations to take into account during the data linkage process in order to produce analysis like this.



Common data quality issues and solutions (1)

There are a number of potential issues you may encounter when linking the data for your local evaluation and below are some suggestions on how to check your datasets.

Issue	Solution
The NHS number is pseudonymised using a different key	Compare full list of Pseudo ID's in both datasets and check if any match. If no ID's match then a different key has been used.
Null or blank NHS Numbers have been pseudonymised	List all Pseudo ID's in the entire dataset and count how many times they appear. A Pseudo ID may appear many more times compared to others. Check if activity makes sense or not. If in doubt, check with the pseudonymisation key holder who should be able to trace the Pseudo ID back to its original value.
The activity dates are inconsistent or not accurate	Check any date field to see if date format are consistent. E.g. YY-MM-DD or DD-MM-YY.
Activity has been double counted due to many to many relationships	Find records where all contents exactly match, therefore appear as duplicates. If found, check how the data has been joined. See example on page 93.
The data formats in different datasets do not match	When importing data check the field format is what it should be. If this has been missed at the import stage then the field can often be reformatted in the database.

Common data quality issues and solutions (2)

Issue	Solution
Records are missing in the linked dataset	Check with data provider how many records there should be in the data set and compare this to what you have in your linked dataset from that provider
Duplicate Pseudo ID appears	A patients birthday may have passed between two contacts therefore having 2 ages. You will need to decide which age to assign to the patient so to avoid creating two patients in the linked data. This can also happen if the postcode changes. Creating an index table of all unique IDs and then allocating the most appropriate demographic details (e.g. latest age and postcode) to these IDs can help mitigate this issue.
NHS Number collection is poor in one of more dataset	An assessment of whether NHS Number compliance is poor will need to be taken before these datasets are used. Datasets with poor compliance should either not be used or caveats need to be clear in the method.
There is inconsistent coding over time	Look for sudden shift in trend from one specific time period to the next e.g. month/financial year
The datasets use different coding methods	List unique codes within a field with their descriptions to identify codes that do not match their descriptions set out in the data specification.

Avoiding double counting by creating spells

IAPT Appointment	Inpatient Admission
03/04/17	
10/04/17	
17/04/17	
24/04/17	
01/05/17	
08/05/17	
	16/07/17 – 19/07/17

If you have a separate record for each appointment in your IAPT data this is likely to create double counting when linked with the healthcare utilisation data. This example for an individual will count 6 separate inpatient spells if no adjustments are made before the datasets are linked.

IAPT Spell	Inpatient Admission
03/04/17 – 08/05/17	
	16/07/17 – 19/07/17

Creating one record for each IAPT spell in your dataset can remove this counting.

Using spells can also cause double counting

IAPT Spell	Inpatient Admission
03/04/17 – 08/05/17	
	16/07/17 – 19/07/17
08/08/17-19/09/17	
	15/11/17 – 19/11/17

Creating spells will not remove the risk of double counting completely for people who have more than one spell of IAPT treatment.

IAPT Spell	Inpatient Admission
03/04/17 – 08/05/17	
	16/07/17 – 19/07/17
08/08/17-19/09/17	
	15/11/17 – 19/11/17

You need to ensure spells are only linked to the relevant activity either before of after a persons IAPT treatment.

The Strategy Unit.

Healthcare Utilisation Metrics

NHS
Midlands and Lancashire
Commissioning Support Unit

Introduction

This section summarises healthcare utilisation metrics that may be useful for local evaluations of the Integrated IAPT Early Implementers. This includes the datasets that you would need to source to monitor these metrics locally. More information on sourcing data is available on page 73.

The metrics listed are a guide and are not designed to be a definitive list. They provide a set of metrics that can be used to evaluate the impact of your programme on healthcare utilisation, but if you have already developed your own metrics they should be used. Not all the metrics on the list will be appropriate to your specific interventions and therefore there is not a requirement to measure all of them locally.

The metrics are generally standardised against the population so can be compared across geographies and over time. This may not be necessary if you are only comparing locally and there has been little change in the number and demography of the background population.

If the metrics in this guide do not fit with your programme or you want help to understand which ones may be the most appropriate to your local programme then additional advice is available (see Contact Details).

Healthcare Utilisation Metrics

The guide includes a set of metrics that could be used to measure the impact the Integrated IAPT Early Implementers are having on physical healthcare utilisation for use in local evaluations. They are mainly from national outcome frameworks but some have been defined by the CSU where no national metrics are available. The CSU defined metrics may not fit locally available datasets and additional individual support is available if required.

There are a number of national outcome framework that contain metric definitions, including:

- NHS Outcomes Framework (NHS OF)
- CCG Outcomes Indicator Set (CCG OIS)
- Everyone Counts Outcome Measures
- NHS Constitution Measures
- Better Care Fund Metrics
- Quality Outcomes Framework (QOF)

This guide mainly uses the NHS OF and CCG OIS but the other frameworks may include metrics that are more appropriate locally.

Possible Healthcare Utilisation Metrics (1)

The Strategy Unit.

Acute Care

- A&E Attendances
- Emergency Inpatient admissions
- Average length of acute hospital stay
- Average number of acute excess bed days
- Unplanned hospitalisation for chronic ambulatory care sensitive (ACS) conditions (adults)
- Complications associated with diabetes, including emergency admission for diabetic ketoacidosis and lower limb amputation
- Emergency admissions for acute conditions that should not usually require hospital admission
- Emergency readmissions within 30 days of discharge from hospital
- Outpatient Attendances

Possible Healthcare Utilisation Metrics (2)

The Strategy Unit.

Ambulance

- Ambulance Conveyances to Hospital
- All Ambulance activity (including See & Treat and Hear & Treat)

Primary Care

- Number of attendances (GP Appointments)
- Number of attendances (All Appointments)
- Number of Prescriptions \ Cost of Prescribing

Developing metrics to evaluate the impact of change (1)

There may be a requirement to develop specific metrics that are required to track the impact of your service and below are some tips for developing or selecting local metrics:

- Metrics can be developed to measure all parts of your logic model
- The main focus will be on developing metrics to evaluate outcomes and impacts
- Metrics can be developed using aggregate data but in order to examine the impact of the IAPT Early Implementers Programme you will need person level data that can be linked to your IAPT dataset
- In order to track the impact of your Integrated IAPT Service you will need person level linked data so you can track the physical health utilisation outcomes of the cohort seen by the IAPT service.

Developing metrics to evaluate the impact of change (2)

To measure outcomes you need to:

- Define the cohort you are targeting and your comparator (Inputs)
- Understand your baseline position (Inputs, Activities, Outputs and Outcomes)
- Identify evidence and insights relevant to your programme and context (Activities)
- Define the interventions that will be delivered so you can define the expected outputs and outcomes (Activities)
- Define the likely impact across the whole system of the new interventions (Outputs)
- Understand when the outcomes are expected to be delivered (Short-term, Medium Term and Long Term Outcomes)
- Understand what data is already available and what you will need to develop locally (Inputs, Activities, Outputs and Outcomes)

Metrics Used in the Evidence Base

Metric selection

The following section examines the metrics that have been used to create the evidence of the impact of IAPT for specific long term conditions and medically unexplained symptoms. It suggests appropriate metrics that may show an impact on healthcare utilisation for those conditions. This is not a systematic review of the evidence but focuses on highlighting metrics that have been used in other evaluations. Not all the metrics will have shown a positive impact in the studies but there were selected as good measures to test the impact for the specific LTC / MUS. Where no specific healthcare utilisation metrics have been used in previous studies, a set of metrics are recommended based on studies for different conditions and assumptions around the logic of how integrated IAPT services might impact healthcare utilisation.

These metrics are suggestions and should provide a starting position for Early Implementer sites to select appropriate metrics for the relevant conditions. It is not designed as a definitive list of metrics that will be appropriate for all Early Implementer sites. Therefore if you have already created a logic model you should use the metrics you have already selected as they will be more specific to your service. There is also a need to be pragmatic about selecting the metrics you can realistically source within the time constraints of the evaluation. For example, if there are no current flows of primary care data within your area the cost and time required to set up a new dataflow may not be practical for the local evaluation.

Metric selection - useful references

The NHS Confederation developed 'Investing in emotional and psychological wellbeing for patients with long-term conditions' in 2012 which includes a number of case studies showing the impact of IAPT services on long term conditions and medically unexplained symptoms. It particularly focused on Diabetes, COPD, Coronary Heart Disease and MUS Link

A number of the economic cases highlighted in the above are sourced from 'Mental health promotion and mental illness prevention: the economic case'. Link

Below is a link to the evaluation of the pathfinder sites that examined the costs of Admitted Patient Care, Outpatients and A&E as the healthcare utilisation metrics. These are not specific to any long term condition or MUS but the study provide helpful context for your local evaluation. Link

The paper 'The Impact of Psychological Interventions on Medical Cost Offset: A Meta-analytic Review' is a meta analysis of a number of studies on the impact of psychological interventions on healthcare utilisation costs and includes some information on the metrics used.
https://www.researchgate.net/profile/Lambert_Michael/publication/232495698_Medical_cost_offset_A_review_of_the_impact_of_psychological_interventions_on_medical_utilization_over_the_past_three_decades/links/56747e6b08ae125516e0a171.pdf

Diabetes

The evidence around Diabetes shows that psychological interventions can be successful at reducing HbA1C and therefore reducing activity related to suboptimal management and complications of Diabetes. No specific healthcare utilisation metrics are highlighted in the studies but the Integrated IAPT Programme is likely to have an impact on the following metrics if it improves how patients manage their condition and reduces complications:

1. Emergency Inpatient Admissions
2. Unplanned hospitalisation for chronic ambulatory care sensitive (ACS) conditions (adults)
3. A&E Attendances
4. GP Consultations

References - NHS Confederation (2012) Investing in emotional and psychological wellbeing for patients with long-term conditions
http://www.nhsconfed.org/~/media/Confederation/Files/Publications/Documents/Investing%20in%20emotional%20and%20psychological%20wellbeing%20for%20patients%20with%20long-term%20condtions%2016%20April%20final%20for%20website.pdf

Knapp M, McDaid D, Parsonage M eds (2011) Mental health promotion and mental illness prevention: the economic case. Department of Health - pages 31-32

(http://www.lse.ac.uk/businessAndConsultancy/LSEEnterprise/pdf/PSSRUfeb2011.pdf)

COPD \ Asthma \ Other respiratory conditions

There have been a number of service evaluations looking at the impact of integrated physical and psychological interventions on COPD. The impact is likely to be in similar healthcare utilisation metrics for asthma and other respiratory conditions although no studies were found to back this up. The metrics used in these evaluations are show below.

1. Emergency Inpatient Admissions
2. A&E Attendances
3. Emergency Readmissions

The metric 'Unplanned hospitalisation for chronic ambulatory care sensitive (ACS) conditions (adults) includes specific codes for COPD and Asthma and therefore may be more specific than emergency inpatient admissions. Although not specifically examined in any of the evidence a reduction in A&E attendances may lead to a reduction in Ambulance activity for those patients who would have been conveyed to hospital.

Reference -
http://www.nhsconfed.org/~/media/Confederation/Files/Publications/Documents/Investing%20in%20emotional%20and%20psychological%20wellbeing%20for%20patients%20with%20long-term%20condtions%2016%20April%20final%20for%20website.pdf

Coronary Heart Disease

A study in Liverpool looked at the impact of psychological interventions for people with ischaemic heart disease focusing on the metrics below. Other local service evaluations have also focused on these metrics.

1. Average length of stay (general, cardiac and myocardial infarction)
2. Emergency Inpatient Admissions (general, cardiac and myocardial infarction)
3. Outpatient appointments

Reference -
http://www.nhsconfed.org/~/media/Confederation/Files/Publications/Documents/Investing%20in%20emotional%20and%20psychological%20wellbeing%20for%20patients%20with%20long-term%20condtions%2016%20April%20final%20for%20website.pdf

Cancer

Minimal evidence is currently available on the impact of IAPT services on healthcare utilisation for cancer patients. Those available along with more general studies of the impact of IAPT on healthcare utilisation would suggest the impact is most likely on unplanned rather than planned care. The logic would be that by managing anxiety and depression alongside the Cancer treatment, patients are more likely to manage any side effects and complications and therefore less likely to require unplanned care. The metrics below have been selected as the most appropriate.

1. Emergency Inpatient Admissions
2. A&E Attendances
3. Primary Care Consultations

Medically Unexplained Symptoms \ Chronic Pain

The Strategy Unit.

One study looked at the impact of Cognitive behavioural therapy (CBT) on patients with medically unexplained symptoms (MUS). The study showed savings on the following metrics over a 3 year period with the proportion of savings attributed to each metric shown in brackets.

1. Emergency Inpatient Admissions (52%)
2. A&E Attendances (22%)
3. Primary Care Consultations (16%)
4. Outpatient attendances (5%)
5. Prescribing (5%)

The metrics are applied to all medically unexplained symptoms

Reference - Knapp M, McDaid D, Parsonage M eds (2011) Mental health promotion and mental illness prevention: the economic case. Department of Health - pages 33-35

(http://www.lse.ac.uk/businessAndConsultancy/LSEEnterprise/pdf/PSSRUfeb2011.pdf)

Other Long Term Conditions

There are currently no studies that have explored the impact of IAPT services on musculo-skeletal, epilepsy, skin conditions or digestive tract conditions. It is likely that any IAPT intervention would support patients to better self manage their condition therefore reducing the need the for unplanned care activities. The suggested metrics below could be used to manage unplanned activity.

1. Emergency Inpatient Admissions
2. A&E Attendances
3. GP Consultations
4. Ambulance conveyances to hospital

There may also be an impact on unplanned care for any areas where regular activity may be required less often (e.g. pain injections) and therefore the following metrics could be used.

1. Elective Inpatient Admissions
2. Outpatient Attendances

Summary of recommended metrics for each LTC/MUS (1)

The Strategy Unit.

The table below is a summary of the metrics suggested in this section based on the evidence or a set of logical assumptions about the impact of integrated IAPT. Some metrics that are not shown in this section, but may be relevant for some sites, have been included in the list for completeness.

Type	Metric	Diabetes	COPD	Asthma	Other Respiratory Disease	Heart disease	Cancer	MSK
Acute	A&E Attendances	✓	✓	✓	✓		✓	✓
Acute	Emergency Inpatient admissions	✓	✓	✓	✓	✓	✓	✓
Acute	Average length of acute hospital stay					✓		
Acute	Average number of acute excess bed days							
Acute	Unplanned hospitalisation for chronic ambulatory care sensitive (ACS) conditions (adults)	✓	✓	✓				
Acute	Complications associated with diabetes, including emergency admission for diabetic ketoacidosis and lower limb amputation							
Acute	Emergency admissions for acute conditions that should not usually require hospital admission							
Acute	Emergency readmissions within 30 days of discharge from hospital		✓	✓	✓			
Acute	Outpatient Attendances					✓		✓
Acute	Elective Inpatient admissions							✓
Ambulance	Ambulance Conveyances to Hospital							✓
Ambulance	All Ambulance activity (including See & Treat and Hear & Treat)							
Primary Care	Number of attendances (GP Appointments)	✓					✓	✓
Primary Care	Number of attendances (All Appointments)							
Primary Care	Number of Prescriptions \ Cost of Prescribing							

Summary of recommended metrics for each LTC/MUS (2)

The Strategy Unit.

The table below is a summary of the metrics suggested in this section based on the evidence or a set of logical assumptions about the impact of integrated IAPT. Some metrics that are not shown in this section, but may be relevant for some sites, have been included in the list for completeness.

Type	Metric	Chronic pain	Epilepsy	Skin conditions	Digestive tract conditions	MUS
Acute	A&E Attendances	✓	✓	✓	✓	✓
Acute	Emergency Inpatient admissions	✓	✓	✓	✓	✓
Acute	Average length of acute hospital stay					
Acute	Average number of acute excess bed days					
Acute	Unplanned hospitalisation for chronic ambulatory care sensitive (ACS) conditions (adults)					
Acute	Complications associated with diabetes, including emergency admission for diabetic ketoacidosis and lower limb amputation					
Acute	Emergency admissions for acute conditions that should not usually require hospital admission					
Acute	Emergency readmissions within 30 days of discharge from hospital					
Acute	Outpatient Attendances	✓	✓	✓	✓	✓
Acute	Elective Inpatient admissions					
Ambulance	Ambulance Conveyances to Hospital					
Ambulance	All Ambulance activity (including See & Treat and Hear & Treat)					
Primary Care	Number of attendances (GP Appointments)	✓	✓	✓	✓	✓
Primary Care	Number of attendances (All Appointments)					
Primary Care	Number of Prescriptions \ Cost of Prescribing	✓	✓	✓	✓	✓

Acute Metrics and Data Requirements

Acute Metrics and Data Requirements

This section contains the following acute healthcare utilisation metrics along with a description of the datasets that would need to be sourced to create a linked dataset. The first 4 are based on local definitions (with the first 2 based on national NHS England indicators) whilst the other 4 use definitions from national outcomes framework

- A&E Attendances
- Emergency Inpatient admissions
- Average length of acute hospital stay
- Average number of acute excess bed days
- Unplanned hospitalisation for chronic ambulatory care sensitive (ACS) conditions (adults)
- Complications associated with diabetes, including emergency admission for diabetic ketoacidosis and lower limb amputation
- Emergency admissions for acute conditions that should not usually require hospital admission
- Emergency readmissions within 30 days of discharge from hospital
- Outpatient Attendances
- Elective Admissions

A&E Attendances

Definition – All unplanned attendances in the reporting period at A&E departments, whether admitted or not.

Numerator – Number of unplanned attendances in the reporting period at A&E departments, whether admitted or not.

Denominator - CCG level count of patients registered with the constituent GP Practices

Data Source – Hospital Episode Statistics / Secondary User Service and GP registered population, NHAIS (Exeter) System

SUS Fields required – NHS Number, Attendance Date (plus age and gender if used in standardisation)

Indicator Source – A&E Attendances and Emergency Admissions Monthly Return

Indicator Reference – N/A

Emergency Admissions

Definition – All emergency admissions in the reporting period

Numerator – The number of finished and unfinished admission episodes, excluding transfers, for patients with an emergency method of admission

Denominator - CCG level count of patients registered with the constituent GP Practices

Data Source – Hospital Episode Statistics / Secondary User Service and GP registered population, NHAIS (Exeter) System

SUS Fields required – NHS Number, Admission Method, Admission Date, Discharge Date (plus age and gender if used in standardisation)

Indicator Source – A&E Attendances and Emergency Admissions Monthly Return

Indicator Reference – N/A

Average Length of Stay

Definition – Average length of stay for all finished inpatient spells with an emergency method of admission

Numerator – Length of stay for all finished inpatient spells with an emergency method of admission

Denominator – Number of finished inpatient spells with an emergency method of admission

Data Source – Hospital Episode Statistics / Secondary User Service

SUS Fields required – NHS Number, Admission Method, Admission Date, Discharge Date

Indicator Source – Locally defined

Indicator Reference – N/A

Excess Bed days

Definition – Average number of excess bed days

Numerator – Number of excess bed days for all finished inpatient spells with an emergency method of admission

Denominator - Number of finished inpatient spells with an emergency method of admission

Data Source – Hospital Episode Statistics / Secondary User Service

SUS Fields required – NHS Number, Admission Method, Excess Bed days

Indicator Source – Locally defined

Indicator Reference – N/A

Unplanned hospitalisation for chronic ambulatory care sensitive (ACS) conditions (adults)

Definition - Directly age and sex standardised rate of unplanned hospital admissions for chronic ambulatory care sensitive conditions, per 100,000 registered patients.

Numerator - The number of finished and unfinished admission episodes, excluding transfers, for patients with an emergency method of admission and with a primary diagnosis for chronic ambulatory care sensitive conditions.

Denominator - CCG level count of patients registered with the constituent GP Practices extracted from NHAIS (Exeter) Systems.

Data Source - Hospital Episode Statistics / Secondary User Service and GP registered population, NHAIS (Exeter) System

SUS Fields required – NHS Number, Age, Gender, Admission Date, Admission Method, Primary Diagnosis

Indicator Source – CCG Outcomes Indicator Set (CCG OIS)

Indicator Reference – C2.6

Further information on the definition of ACS conditions -
https://www.kingsfund.org.uk/sites/files/kf/field/field_publication_file/data-briefing-emergency-hospital-admissions-for-ambulatory-care-sensitive-conditions-apr-2012.pdf

Complications associated with diabetes, including emergency admission for diabetic ketoacidosis and lower limb amputation

Definition - Indirectly age and sex standardised rate of complications associated with diabetes, per 100 people with diabetes.

Numerator - Number of people identified by NDA in the denominator with a HES record of NDA complications using ICD-10 primary or secondary diagnosis codes, or primary and secondary OPCS codes

Denominator - Number of people with diabetes identified by the NDA who were alive at the start of the follow-up period

Data Source – Number of people identified by NDA in the denominator with a HES record of NDA complications using ICD-10 primary or secondary diagnosis codes, or primary and secondary OPCS codes

SUS Fields required – NHS Number, Age, Gender, Admission Date, Admission Method, Primary \ Secondary Diagnoses

Indicator Source – CCG Outcomes Indicator Set (CCG OIS)

Indicator Reference – C2.8

Notes – This will need some local changes to the definition as it may not be possible to access NDA data locally

Emergency admissions for acute conditions that should not usually require hospital admission

Definition – Directly age and sex standardised rate of emergency admissions for acute conditions that should not usually require hospital admission, per 100,000 registered patients.

Numerator – The number of finished and unfinished admission episodes, excluding transfers, for patients with an emergency method of admission and with primary diagnoses for acute conditions that should not usually require hospital admission

Denominator - CCG level count of patients registered with the constituent GP Practices

Data Source – Hospital Episode Statistics / Secondary User Service and GP registered population, NHAIS (Exeter) System

SUS Fields required – NHS Number, Age, Gender, Admission Date, Admission Method, Primary Diagnosis

Indicator Source – CCG Outcomes Indicator Set (CCG OIS)

Indicator Reference – C3.1

Emergency readmissions within 30 days of discharge from hospital

Definition – Indirectly age, sex, method of admission and diagnosis/procedure standardised percentage of emergency admissions to any hospital in England occurring within 30 days of the last, previous discharge from hospital after admission; indirectly standardised by age, sex, method of admission and diagnosis / procedure. Admissions for cancer and obstetrics are excluded.

Numerator – The number of finished and unfinished continuous inpatient spells (CIPS) intersecting the respective financial year, plus those up to 30 days into the next financial year that are emergency admissions within 0-29 days (inclusive) of the last, previous discharge from hospital

Denominator - The number of finished continuous inpatient spells within selected medical and surgical specialties, with a discharge date up to March 31st within the year of analysis. Day cases, spells with a discharge coded as death, maternity spells (based on specialty, episode type, diagnosis), and those with mention of a diagnosis of cancer or chemotherapy for cancer anywhere in the spell are excluded. Patients with mention of a diagnosis of cancer or chemotherapy for cancer anywhere in the 365 days prior to admission are excluded.

Data Source – Hospital Episode Statistics / Secondary User Service and GP registered population, NHAIS (Exeter) System

SUS Fields required – NHS Number, Age, Gender, Admission Date, Discharge Date, Readmission Flag, Treatment Function Code, Primary \ Secondary Diagnoses

Indicator Source – CCG Outcomes Indicator Set (CCG OIS)

Indicator Reference – C3.2

Outpatient Attendances

Definition – All outpatient attendances in the reporting period

Numerator – The number of first and follow up outpatient attendances

Denominator – CCG level count of patients registered with the constituent GP Practices

Data Source – Hospital Episode Statistics / Secondary User Service and GP registered population, NHAIS (Exeter) System

SUS Fields required – NHS Number, Attendance Data, Attended or did not attend code,

First attendance code (plus age and gender if used in standardisation)

Indicator Source – Locally derived

Indicator Reference – N/A

Elective Admissions

Definition – All elective admissions in the reporting period

Numerator – The number of finished and unfinished admission episodes, excluding transfers, for patients with an elective method of admission

Denominator - CCG level count of patients registered with the constituent GP Practices

Data Source – Hospital Episode Statistics / Secondary User Service and GP registered population, NHAIS (Exeter) System

SUS Fields required – NHS Number, Admission Method, Admission Date, Discharge Date (plus age and gender if used in standardisation)

Indicator Source – Locally derived

Indicator Reference – N/A

SUS Inpatient Data Required (1)

The following fields are required from the SUS Inpatients Dataset:

- NHS Number (pseudonymised with the same key as the IAPT data to allow linkage if using pseudonymised data)
- Age
- Gender
- Commissioner Code \ Commissioner Name or CCG of Registered GP Practice – this depends on whether you include NHS England Specialised Commissioning Activity
- Admission Date \ Spell Start Date
- Discharge Date \ Spell End Date
- Admission Method
- Primary Diagnosis Code \ Primary Diagnosis Name
- Treatment Function Code
- HRG Code \ HRG Name
- Excess Bed Days \ Excess Bed Day Costs
- Cost

SUS Inpatient Data Required (2)

The following criteria should be applied to the data extracted:

- Commissioner Code or CCG of Registered GP Practice equals all relevant CCG Codes
- Admission Date \ Spell Start Date or Discharge Date \ Spell End Date within the period you are analysing
- Admission Method in (21,22,23,24,25,28,2A,2B,2C,2D) to identify just emergency admissions
- Dominant Episode within the spell

SUS A&E Data Required

The following fields are required from the SUS A&E Dataset

- NHS Number (pseudonymised with the same key as the IAPT data to allow linkage if using pseudonymised data)
- Age
- Gender
- Commissioner Code \ Commissioner Name
- Arrival Date
- A&E Arrival Mode Code (can be used to identify conveyances to A&E by Ambulance)
- HRG Code \ HRG Name
- Cost

The following criteria should be applied

- Commissioner Code equals relevant CCG Codes
- Arrival date within the period you are analysing

SUS Outpatient Data Required (1)

The following fields are required from the SUS Inpatients Dataset:

- NHS Number (pseudonymised with the same key as the IAPT data to allow linkage if using pseudonymised data)
- Age
- Gender
- Commissioner Code \ Commissioner Name or CCG of Registered GP Practice – this depends on whether you include NHS England Specialised Commissioning Activity
- Attendance Date
- Attended or did not attend code
- First attendance code

- Treatment Function Code
- HRG Code \ HRG Name
- Cost

SUS Outpatient Data Required (2)

The following criteria should be applied to the data extracted:

- Commissioner Code or CCG of Registered GP Practice equals all relevant CCG Codes
- Attendance Date within the period you are analysing

Ambulance Metrics and Data Requirements

Ambulance Metrics and Data Requirements

This section contains the following ambulance utilisation metrics along with a description of the datasets that would need to be sourced to create a linked dataset. Both metrics are based on local definitions.

- Ambulance Conveyances to Hospital
- All Ambulance activity (including See & Treat and Hear & Treat)

Ambulance Conveyances to Hospital

Definition – Ambulance conveyances to hospital per 1,000 population

Numerator – Number of people conveyed to hospital in an Ambulance

Denominator - CCG level count of patients registered with the constituent GP Practices

Data Source – Local Ambulance data and GP registered population, NHAIS (Exeter) System

Ambulance Data Fields required – NHS Number, Activity Date, Activity Type (plus age and gender if used in standardisation)

Indicator Source – Locally Defined

Indicator Reference – N/A

Note – This indicator can be derived from SUS data using the A&E Arrival Mode Code field if no local Ambulance data is available.

All Ambulance Activity

Definition – Ambulance activity per 1,000 population (including Conveyance to Hospital, See & Treat and Hear & Treat)

Numerator – Number of contacts with the ambulance service

Denominator - CCG level count of patients registered with the constituent GP Practices

Data Source – Local Ambulance data and GP registered population, NHAIS (Exeter) System

Ambulance Data Fields required – NHS Number, Activity Date (plus age and gender if used in standardisation)

Indicator Source – Locally Defined

Indicator Reference – N/A

Local Ambulance Data Required

The following fields are required from the local Ambulance Dataset

- NHS Number (pseudonymised with the same key as the IAPT data to allow linkage if using pseudonymised data)
- Age
- Gender
- Commissioner Code \ Commissioner Name
- Activity Date
- Activity Type (Conveyed to hospital, See and Treat and Hear and Treat)

The following criteria should be applied

- Commissioner Code equals relevant CCG Codes
- Activity date within the period you are analysing

Primary Care Metrics and Data Requirements

Primary Care Metrics and Data Requirements

This section contains the following primary care utilisation metrics along with a description of the datasets that would need to be sourced to create a linked dataset. All 3 metrics are based on local definitions.

- Number of attendances (GP Appointments)
- Number of attendances (All Appointments)
- Number of Prescriptions \ Cost of Prescribing

GP Attendances

Definition – GP attendances per 1,000 population

Numerator – Number of GP Attendances during the period

Denominator - CCG level count of patients registered with the constituent GP Practices

Data Source – GP Practice Systems or local data extraction service and GP registered population, NHAIS (Exeter) System

GP Data Fields required – NHS Number, Attendance Date (plus age and gender if used in standardisation)

Indicator Source – Locally Defined

Indicator Reference – N/A

GP Practice Attendances

Definition – GP Practice attendances per 1,000 population (All Staff)

Numerator – Number of GP Practice Attendances during the period (All Staff)

Denominator - CCG level count of patients registered with the constituent GP Practices

Data Source – GP Practice Systems or local data extraction service and GP registered population, NHAIS (Exeter) System

GP Data Fields required – NHS Number, Attendance Date (plus age and gender if used in standardisation)

Indicator Source – Locally Defined

Indicator Reference – N/A

GP Prescribing Costs

Definition – Average cost of GP prescribing per person

Numerator – Total Cost of GP Prescribing

Denominator - CCG level count of patients registered with the constituent GP Practices

Data Source – GP Practice Systems or local data extraction service and GP registered population, NHAIS (Exeter) System

GP Data Fields required – NHS Number, Attendance Date

Indicator Source – Locally Defined

Indicator Reference – N/A

Local Primary Care Data Required

The following fields are required from the Primary Care datasets

- NHS Number (pseudonymised with the same key as the IAPT data to allow linkage if using pseudonymised data)
- Age
- Gender
- Attendance Date
- Staff Role (GP / Other)
- QOF Long Term Condition Register(s)
- Prescribing data (item, dose, quantity, cost)

The following criteria should be applied to the extracted data:

- Commissioner Code equals relevant CCG Codes
- Attendance date within the period you are analysing
- Exclude any patients that have explicated requested that their data is not shared and all patients with a restricted code

Primary Care data is recorded using READ Codes that can be implemented differently in local areas and therefore you will need to access local advice on the best way to source data in your area.

The Strategy Unit.

Glossary and References

NHS
Midlands and Lancashire
Commissioning Support Unit

Glossary (1)

- ACS- Ambulatory Care Sensitive (ACS) conditions are chronic conditions for which it is possible to prevent acute exacerbations and reduce the need for hospital admission through active management, such as vaccination; better self-management, disease management or case management; or lifestyle interventions.
- ASH – An Accredited Safe Haven is an accredited organisation, or a designated part of an organisation, which is contractually and legally bound to process data in ways that prevent the identity of individuals to whom the data relates from being identified.
- CSU- Commissioning Support Units (CSUs) provide a wide range of commissioning support services to CCGs, including data management and analytics
- DSA –Data Sharing Agreements (DSAs) set out a common set of rules to be adopted by the various organisations involved in a data sharing operation and can form part of a contract between organisations.
- DSCRO – Data Services for Commissioners Regional Offices (DSCROs) are generally housed within Commissioning Support Units with the staff seconded to NHS Digital to enable them to process patient identifiable data under the Health and Care Act 2012.

Glossary (2)

- HES – Healthcare Episodes Statistics (HES) is a data warehouse containing details of all admissions, outpatient appointments and A&E attendances at NHS hospitals in England. CSUs often hold pseudonymised HES data whilst identifiable data is held by NHS Digital.
- ICO – The Information Commissioners Office (ICO) is responsible for the enforcement of the Data Protection Act 1998, and also responsible for Freedom of Information.
- IG – Information Governance (IG) covers personal information, relating to patients/service users and employees and corporate information such as financial and accounting records and provides a framework to bring together all the rules, whether legal or simply best practice, that apply to the handling of information.
- IGA – The Information Governance Alliance is the authoritative source of advice and guidance about the rules on using and sharing information in health and care. The core members of the Information Governance Alliance are the Department of Health, NHS England, NHS Digital and Public Health England. Representatives from the Information Commissioner's Office and the National Data Guardian's Office also sit on the Board.
- NHAIS – The National Health Applications and Infrastructure Services (NHAIS) Exeter system holds national patient registration data and can be used as a source for population data

Glossary (3)

- PIA – A Privacy Impact Assessments (PIAs) are a tool that you can use to identify and reduce the privacy risks of your projects. A PIA can reduce the risks of harm to individuals through the misuse of their personal information. It can also help you to design more efficient and effective processes for handling personal data.
- SUS – The Secondary User Service (SUS) is the single, comprehensive repository for healthcare data in England which enables a range of reporting and analyses to support the NHS in the delivery of healthcare services. Access to SUS is through DSCROs who hold identifiable data for all the CCGs within their footprint.

References

Evaluation of complex health and care interventions using retrospective matched control methods. The Nuffield Trust. 2015.

Evaluation: what to consider Commonly asked questions about how to approach evaluation of quality improvement in health care. The Health Foundation. 2015.

Guide to monitoring and evaluation requirements for the British Heart Foundation House of Care pilot projects. ICF International. September 2015

How to study improvement interventions: a brief overview of possible study types.

Margareth Crisóstomo Portela et al. BMJ Quality & Safety, 2015;0:1-12.

Observational research methods. Research design II: cohort, cross sectional, and case-control studies. C J Mann. Emergency Medicine Journal, 2003;20:54–60

Useful resources (1)

The following links may be useful when defining your evaluation method

- Better Evaluation - http://www.betterevaluation.org/
- The Cabinet Office Magenta Book Guidance for evaluation - https://www.gov.uk/government/publications/the-magenta-book
- Logic Model Guide - https://midlandsandlancashirecsu.nhs.uk/images/Logic_Model_Guide_AGA_2262_ARTWORK_FINAL_07.09.16_1.pdf
- Center for Theory of Change - www.theoryofchange.org
- Centre for Evidence Based Medicine Study Design - http://www.cebm.net/study-designs/
- What Works Centre for Economic Growth - http://www.whatworksgrowth.org

Useful resources (2)

The following links may be useful when choosing, defining and comparing metrics:

- CCG Outcomes Indicator Set - http://www.england.nhs.uk/ccg-ois/
- NHS Outcomes Framework - https://www.gov.uk/government/publications/nhs-outcomes-framework-2015-to-2016
- NHS Digital Indicator Portal - https://indicators.hscic.gov.uk/webview/
- Quality Outcomes Framework (QOF) Definitions - http://www.hscic.gov.uk/qof
- QOF Data - http://qof.hscic.gov.uk/
- Monthly Hospital Activity Data - http://www.england.nhs.uk/statistics/statistical-work-areas/hospital-activity/monthly-hospital-activity/
- Commissioning for Value Tool - http://ccgtools.england.nhs.uk/cfv/flash/atlas.html
- A&E Attendances and Emergency Admissions - http://www.england.nhs.uk/statistics/statistical-work-areas/ae-waiting-times-and-activity/
- NHS Digital – https://www.digital.nhs.uk/

Useful resources (3)

- NHS England Data - http://www.england.nhs.uk/statistics/statistical-work-areas/
- Better Care Fund Metrics - http://www.england.nhs.uk/ourwork/part-rel/transformation-fund/bcf-plan/
- CCG Outcomes Tool - http://ccgtools.england.nhs.uk/ccgoutcomes/flash/atlas.html
- Levels of Ambition Atlas - http://ccgtools.england.nhs.uk/loa/flash/atlas.html
- NHS Data Dictionary - http://www.datadictionary.nhs.uk/
- Nuffield Trust Evaluation of complex health and care interventions using retrospective matched control methods - https://www.nuffieldtrust.org.uk/files/2017-01/evaluation-health-care-interventions-web-final.pdf

Useful resources (4)

The following links may be useful when developing your data sharing and IG processes:

- Information Commissioners Office (ICO) - https://ico.org.uk/
- Information Governance Alliance (IGA) - https://digital.nhs.uk/information-governance-alliance
- ICO Conducting Privacy Impact Assessments Code of Practice - https://ico.org.uk/media/for-organisations/documents/1595/pia-code-of-practice.pdf
- Data Sharing Code of Practice - https://ico.org.uk/media/for-organisations/documents/1068/data_sharing_code_of_practice.pdf
- ICO paper on Data controllers and data processors - https://ico.org.uk/media/for-organisations/documents/1546/data-controllers-and-data-processors-dp-guidance.pdf
- Section 251 - http://www.hra.nhs.uk/about-the-hra/our-committees/section-251/what-is-section-251/
- Section 251 Approvals - http://www.hra.nhs.uk/documents/2017/04/cag-non-research-register-march-2017.xls
- Information Sharing for Integrated Care/New Models of Care: A 5 Step Blueprint - https://digital.nhs.uk/media/1325/Information-sharing-for-integrated-care-blueprint/pdf/Information_sharing_for_integrated_care_blueprint

Useful resources (5)

- Download pack for 5 Step Blueprint (includes DSA and PIA templates. Requires winzip or similar package to extract the .rar file) - https://digital.nhs.uk/media/1345/Information-sharing-for-integrated-care-blueprint-download-pack/zip/information_sharing_for_integrated_care_download_pack1
- Options for Legal Data Sharing - https://groups.ic.nhs.uk/TheInformationGovernanceKnowledgebase/The%20Information%20Governance%20Knowledgebase/Options%20for%20Lawful%20Data%20Sharing.pdf
- DSCROs - http://content.digital.nhs.uk/dataservicesforcommissioners
- North Staffs example Data Sharing Agreement - Available on Yammer. Access to the page can be requested by e-mailing ENGLAND.MentalHealth@nhs.net.
- North Staffs example PIA - Available on Yammer. Access to the page can be requested by e-mailing ENGLAND.MentalHealth@nhs.net.
- North Staffs example Consent Information Form - Available on Yammer. Access to the page can be requested by e-mailing ENGLAND.MentalHealth@nhs.net.
- Open Pseudonymiser - https://www.openpseudonymiser.org/

Example CSRI Reference Costs

Activity	Unit Cost	Source
General practitioner (GP)	£27-36	PSSRU - Unit Costs of Health & Social Care 2016 p145
Practice Nurse	£36	PSSRU - Unit Costs of Health & Social Care 2016 p143
Physiotherapist	£30-77	PSSRU - Unit Costs of Health & Social Care 2016 p185
Occupational Therapist (OT)	£30-77	PSSRU - Unit Costs of Health & Social Care 2016 p185
Specialist Nurse (e.g. cardiac nurse, diabetes nurse) (*assumed as Band 6 or 7)	£44-52	PSSRU - Unit Costs of Health & Social Care 2016 p142
Doctor other than GP for a physical health problem (*assumed as Outpatient Attendance)	£135	PSSRU - Unit Costs of Health & Social Care 2016 p95
Podiatrist	£30-77	PSSRU - Unit Costs of Health & Social Care 2016 p185
Social Worker	£55-79	PSSRU - Unit Costs of Health & Social Care 2016 p156
Drug & alcohol advisor	£45	PSSRU - Unit Costs of Health & Social Care 2016 p53
Other counsellor / therapist / clinical psychologist (Outside the IAPT Service)	£30-76	PSSRU - Unit Costs of Health & Social Care 2016 p185
Home treatment / Crisis team member/ Assertive outreach team member/ CMHT member	£38-43	PSSRU - Unit Costs of Health & Social Care 2016 ps167-171
Accident & Emergency	£63-332	PbR Tariff 2017-19 - 3a A&E 17.18
Inpatient Spell	£739-4,238	NHS Reference Costs 2015-16 - Index
Ambulance	£98	PSSRU - Unit Costs of Health & Social Care 2016 p95
Magnetic Resonance Imaging (MRI)	£132-645	NHS Reference Costs 2015-16 – Diagnostic Imaging
CT / CAT scan	£49-453	NHS Reference Costs 2015-16 – Diagnostic Imaging
Ultrasound	£35-336	NHS Reference Costs 2015-16 – Diagnostic Imaging
X-ray	£34	NHS Reference Costs 2015-16 – Directly Accessed Diagnostic Services
Electroencephalogram (EEG)	£739-2,337	NHS Reference Costs 2015-16 - Total - HRGs
Blood Test	£2-4	NHS Reference Costs 2015-16 – Directly Accessed Pathology Services

Note: These are example prices and may not meet local needs. They should be validated locally before being used in your evaluations.

Mike Woodall

m.woodall@nhs.net

0121 612 3850

07860 735519