Developing priority setting processes in Health and Social Care Partnerships: learning from the pilot sites

Marissa Collins, Researcher in Health Economics, Glasgow Caledonian University

Owen Moseley[1], Senior Health Economist, Scottish Medicines Consortium

Sasha McKaig[1], Health Economist, Scottish Medicines Consortium

Sandy Strathearn, Service Manager Business Improvement, Perth & Kinross Council

Simon Steer, Head of Strategic Commissioning, NHS Highland

Christian Goskirk, Quality Improvement Lead, NHS Highland

Andrea Madden, Care at Home Manager, NHS Highland

Paul Leak, Directorate for Health and Social Care Integration, Scottish Government

Brian Slater, Scottish Government

Christina Naismith, Programme Manager, Joint Improvement Team

Cam Donaldson, Yunus Chair in Social Business & Health, Glasgow Caledonian University

Contact information:

Marissa Collins

Yunus Centre for Social Business & Health

Glasgow Caledonian University

3rd Floor Buchanan House

Cowcaddens Road

Glasgow

G4 0BA

E-mail: marissa.collins@gcu.ac.uk

[1] These authors led the pilot in NHS Ayrshire & Arran and, at the time the pilot was conducted, they were employees working within the NHS Ayrshire & Arran Health Economics Team

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1. Background – integration of health and social care in Scotland

'Let me be clear about the objectives of this programme of reform. We want to ensure that adult health and social care services are firmly integrated around the needs of individuals, their carers and other family members; that the providers of those services are held to account jointly and effectively for improved delivery; that services are underpinned by flexible, sustainable financial mechanisms that give priority to the needs of the people they serve rather than the needs of the organisations through which they are delivered; and that those arrangements are characterised by strong and consistent clinical and professional leadership…

There is now a consensus around the contention that separate and—all too often—disjointed systems of health and social care can no longer adequately meet the needs and expectations of the increasing number of people who are living longer into old age, often with multiple, complex, long-term conditions and who, as a result, need joined-up, integrated services.'

Nicola Sturgeon MSP, Deputy First Minister and Cabinet Secretary for Health and Wellbeing, December 2011

The Scottish Government is integrating health and social care services to ensure that people get the right care, in the right place, at the right time. Historically, there has been a divide between "health" and "social care" services. Increasing numbers of people do not experience neatly segregated "health" and "social care" needs, so our systems of health and social care in Scotland need to evolve to support people in ways that reflect increasingly complex support requirements and multimorbidities.

The Public Bodies (Joint Working) (Scotland) Act 2014[2] provides the legislative framework for integrating health and social care services in Scotland. It requires local integration of adult health and social care services, with statutory partners (Health Boards and Local Authorities) deciding locally whether to include children's health and social care services in their integrated arrangements. In broad terms, the aims of the legislation are threefold:

- To improve the quality and consistency of care for patients, carers, service users and their families;
- To provide seamless, joined up care that enables people to stay in their homes, or another homely setting, where it is safe for them to do so; and
- To ensure that resources are used effectively and efficiently to deliver services that meet the needs of the growing population of people with longer term and often complex needs, many of who are older.

1.1. Strategic commissioning under integration

The Act places a duty on Integration Authorities – either Integration Joint Boards or Health Boards and Local Authorities acting as lead agencies – to create a "strategic plan" for the integrated functions and budgets that they control. Integration Authorities are commonly

[2] http://www.legislation.gov.uk/asp/2014/9/pdfs/asp_20140009_en.pdf

referred to as “Health and Social Care Partnerships”, which is the term used throughout this document.

The strategic plan is the output of the strategic commissioning process. Strategic commissioning is the term used for all the activities involved in assessing and forecasting needs, linking investment to agreed outcomes, considering options, planning the nature, range and quality of future services and working in partnership to put these in place. Further information on strategic commissioning for health and social care can be found in the Scottish Government’s statutory guidance on strategic commissioning plans[3].

The importance of effective strategic commissioning for the success of integrated health and social care provision cannot be over-stated. It is the mechanism via which the new integrated partnerships will deliver better care and support for people, and make better use of the significant resources we invest in health and social care provision. Integration – and therefore strategic commissioning – needs to deliver better outcomes, particularly for people with multimorbidities and in terms of improving preventative and anticipatory care, with less inappropriate use of institutional care and better support in communities. Its impact will be measured against the statutory national outcomes for health and wellbeing and the indicators that underpin them.

Health and Social Care Partnerships will need to use appropriate mechanisms to prioritise investment decisions underpinning their strategic commissioning plans.

In discharging these duties a Health and Social Care Partnership will require to have an understanding of how its resources are used (by locality, care group and outcomes) and a transparent prioritisation process by which it can make decisions about the allocation of its resources in the Strategic Plan.

The key question is what are the characteristics required by such a process.

1.2. Pilot sites – prioritisation for integrated strategic commissioning

To inform the development of guidance to help Health and Social Care Partnerships prioritise investment decisions effectively, the Scottish Government commissioned work in pilot sites to investigate the use of Programme Budgeting and Marginal Analysis (PBMA).

PBMA is an analytical approach to assessing the costs and benefits of alternative courses of action. It can enable Health and Social Care Partnerships to identify the potential effect of shifting patterns of investment, and disinvestment, within and between programmes of activity – in terms of outcomes for patients and service users, and effective resource use.

The aim of this pilot project was to work with three Partnerships to develop a PBMA approach suitable for use in integrated care settings. The purpose of this report is to provide an outline of the approach carried out in each pilot site. Section 4 outlines the experiences and lessons learned in each site. Ayrshire & Arran have documented their experience of working through a PBMA process. GCU have documented working through a PBMA process with two localities in Highland (Caithness and Inverness). Perth & Kinross focused

[3] http://www.gov.scot/Resource/0046/00466819.pdf

on linking health and social care data and have provided different types of analysis that can be done to support a PBMA process.

2. Key principles underlying PBMA

A prioritisation process needs to be based on a combination of economic and ethical principles.

2.1. Economic principles

An economic approach to priority setting has to adhere to two key economic concepts; 'opportunity cost' and 'the margin'. Opportunity cost refers to having to make choices within the constraint of limited resources; certain opportunities will be taken up while others must be forgone. The benefits associated with forgone opportunities are opportunity costs. Thus, we need to know the costs and benefits from various health care activities. Marginal analysis refers to the fact that assessment of costs and benefits is best addressed 'at the margin', where the focus is on the benefit gained from the next unit of resources, or benefit lost from having one unit less. Generally, the application of economics becomes about the balance of services, not introduction or elimination of a service in totality. Examining changes at the margin is central to attempting to make the most of resources available by deploying them either across or within programmes so that relevant outcomes are achieved in the best manner possible and the benefit from the services provided is maximised. See Appendix 1 for two examples of marginal analysis.

2.2. Ethical principles

In addition to the two economic principles outlined, Partnerships should also combine these with an ethical approach. Such principles are focussed more on how decisions are made, as opposed to, with economics, what decisions are made. Although we may not all agree on what decisions are made, it may be that we can agree that the process was fair. Accountability for reasonableness[4,5] is an ethical approach to priority setting based on five conditions that should be met during priority setting to ensure the decisions reached are legitimate and fair. These conditions have been adapted and Partnerships should incorporate the following conditions of accountability for reasonableness in the Strategic Planning process.

(a) Ensure publicity for the priority setting process.

Make the priority setting process and decisions, and the rationales behind them, accessible to stakeholders and the local population. This should be incorporated into the Partnership's communication and engagement strategy.

(b) Ensure relevance of the priority setting process

The priority setting process and resulting decisions should be based on principles, reasons, and evidence that stakeholders agree are relevant.

(c) Establish an appeals mechanism

[4] Gibson, J.L. Mitton, C. Martin, D.K. Donaldson, C. Singer P.A. Ethics & economics: does programme budgeting and marginal analysis contribute to fair priority setting? J Health Serv Res Policy. 2006; 11(1):32-7

[5] Peacock, S. Ruta, D. Mitton, C. Donaldson, C. Bate, A. Murtagh, M. Using economics to set pragmatic and ethical priorities. BMJ, 2006;332:482-485

The mechanism should allow people to challenge decisions within the prioritisation process and facilitate resolution of disputes, if necessary by revising decisions in light of further evidence.

(d) Establish an enforcement mechanism

Document the prioritisation process and appeals mechanism in a set of procedures to ensure that the first three conditions are met.

3. Project managing PBMA: 5 questions and 7 steps

3.1. Five questions

A framework for operationalising the principles described in Section 2 is outlined in Box 3.1. The framework provides a structured way of thinking about planning service delivery either at the level of a programme (such as diabetes) or services for a whole population. In public health language, we might refer to this as 'an economic approach to needs assessment'. Economics simply addresses the notion of 'meeting need' by asking (five) questions about resources.

Box 3.1: An economic approach to needs assessment (five questions)

PBMA addresses priorities from the perspective of resources:

1. What resources are available in total?
2. In what ways are these resources currently spent?
3. What are the main candidates for more resources and what would be their effectiveness?
4. Are there any areas of care within the programme which could be provided to the same level of effectiveness but with less resources, so releasing those resources to fund candidates from (3)?
5. Are there areas of care which, despite being effective, should have less resources because a proposal (or proposals) from 3. is (are) more effective for the resources spent?

The starting point is to examine how resources are currently spent before focusing on marginal benefits and marginal costs of changes in that spend. The framework can be used at a micro level (i.e. within programmes of care) or at a macro level (i.e. across all services and programme areas within a single health organisation). Note that, as indicated above, the starting point here is *resources*, not need, the latter being the natural starting point for many health professionals. The result of this process of thinking is that need met from available resources will be maximised. Indeed, the wider the range of services covered (e.g. the health and social services under one budget), the greater the benefits.

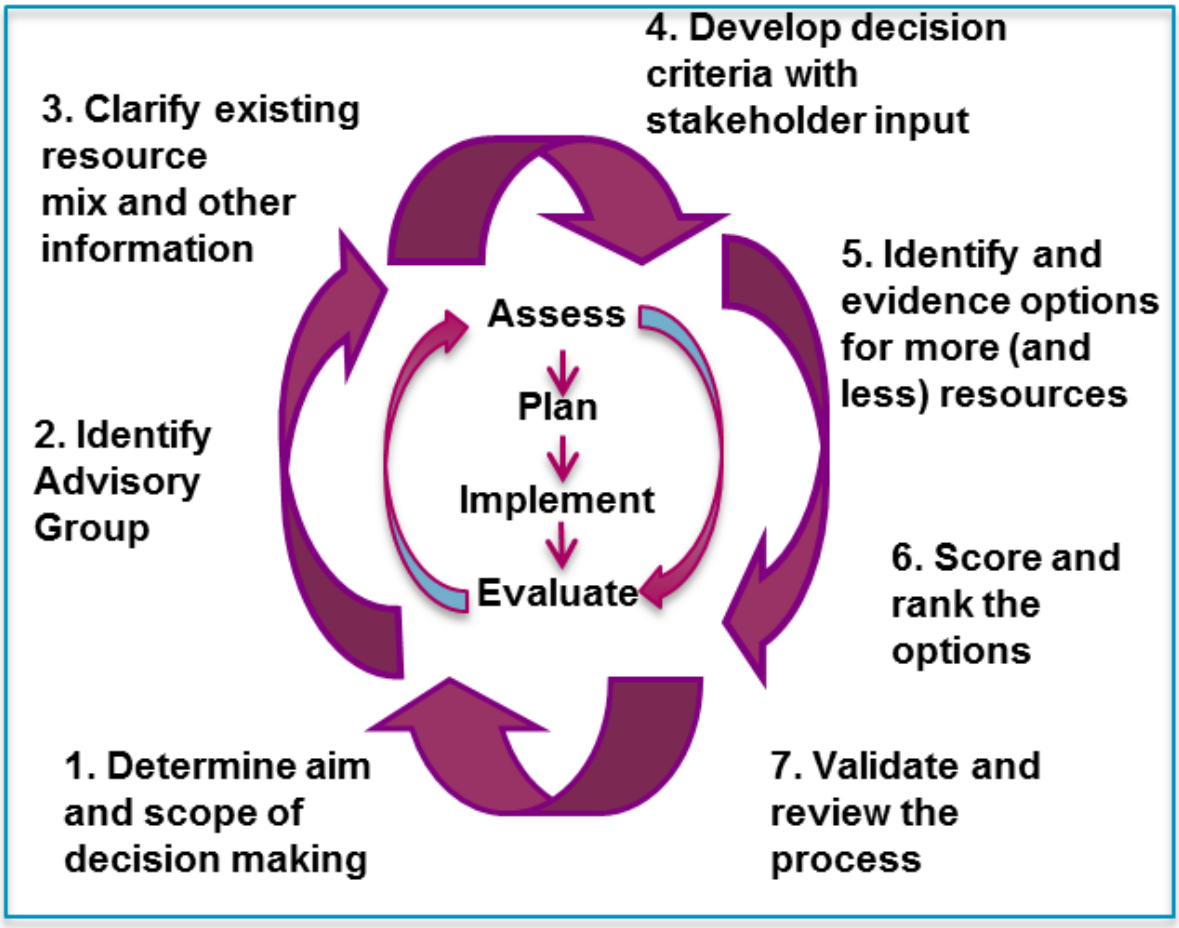
Programme budgeting comprises the first two questions, while the last three pertain to marginal analysis. The underlying premise of programme budgeting is that we cannot know where we are going if we do not know where we are. If the health care budget is fixed, opportunity cost is accounted for by recognising that the candidates for more resources (question 3 in the process) can be funded only by taking resources from elsewhere (questions 4 and 5). Resources can be obtained from elsewhere by being more technically efficient (e.g. doing things differently so we achieve the same health outcomes at less cost,

as addressed by question 4) or more allocatively efficient (e.g. doing entirely different things for different people to achieve a greater health outcome at the same cost, as addressed by question 5). Technical efficiency can encompass various schemes that tend to be known under the heading of 'efficiency savings', such as 'lean thinking' and eliminating unwarranted variations in the amount and costs of procedures. Question 5 is more difficult to address because it involves taking resources from some groups of patients to give to others. However, the key is that all of this can be done 'at the margin' by considering the amounts of different services provided. Although, in reality, quantitative data on marginal benefits is often lacking in many areas of health care, it is the clear and logical way of thinking underpinning the framework that is of prime importance.

3.2. Managing scarcity by project management: seven steps

Implementation of the above framework simply relies on good principles of project management, as shown in Box 3.2.

Box 3.2: Seven steps in a PBMA priority setting exercise



The first step is to determine the aim and scope of the decision making activity. This may be to look at the best way to invest resources across all programmes in a health organisation or to determine how best to spend resources within a specific programme or service. Once this has been determined, a programme budget mapping the current activity and expenditure can be developed.

Those involved in the Advisory Group will be dependent on the scope of the exercise. It should be a mix of staff and could include lay members.

The Advisory Group is then required to determine a set of decision making criteria which reflect the values of the organisation. These criteria allow for the assessment of the benefits of the options for investment and disinvestment. All criteria are applied to each option to assess how well each option performs against each criterion, and therefore the comparison of different options on broadly similar parameters can be achieved. Once the criteria have been defined, agreed and weighted by the Advisory Group, the next step is to identify options for growth, options for using fewer resources for the same output and options for reduction.

Once the options have been identified, evidence for each option and how it meets each criterion should be gathered and outlined in an evidence pack or business case. This should then be sent to the Advisory Group and they are then asked to score each option with respect to how well the option performs against each criterion. Once the scores have been analysed, the options can then be ranked with those providing the greatest benefit at the top. The Advisory Group can then make recommendations to move resources out of areas for reduction and into areas for growth.

4. Pilot Sites

Three sites were involved in piloting the PBMA process outlined in Section 3. The seven steps were used as the basis of each process of the pilot sites.

This section provides a summary of the process in each pilot site, more detail on what happened for each stage of the process, full results and lessons learned from each site is provided in Appendices 2 to 5.

In Ayrshire & Arran, a PBMA process was conducted focusing on GP Enhanced Services as there had been a significant increase in the number of Enhanced Services provided by NHS Ayrshire & Arran as well as potential overspends regarding that particular budget. For more detailed information, go to Appendix 2.

The lead pilot site was in Highland where the process was conducted in two localities with one conducted in Caithness (Appendix 3) and one in Inverness (Appendix 4). The focus in each locality was on Reshaping Care for Older People.

Highland had recently experienced an increase in the number of its delayed hospital discharge (DHD) and at the time had the second highest number of DHD in Scotland. The view of the Partnership is that the current DHD position is symptomatic of further system wide issues that require to be addressed within the Older People Programme. These relate to budgetary pressures; capacity issues; development of a market/provider base; use of Interim Care Facilities and Hospital beds; and the range and use of Care Home beds.

In order to address these issues the Partnership's aim was to use PBMA methodologies to inform and develop options.

In Perth & Kinross, the focus was not on a specific issue. Rather an attempt was made to create a health and social care dataset which could be used to inform priority setting.

4.1. Ayrshire & Arran

Step 1 – Determine aim and scope of decision making

Ayrshire & Arran focused the priority setting process on GP Enhanced Services. These are services delivered by GP practices in addition to their basic contract and for which they receive additional payment. There are three types of Enhanced Service; Directed Enhanced

Services, National Enhanced Services and Locally Enhanced Service. This review focused on Locally Enhanced Services which are designed locally, to meet local needs, extend choice and improve the patient experience. However, crucially with Locally Enhanced Services, there is a degree of discretion regarding whether the service is provided or not, or to what level that service is provided, while with the other two forms of Enhanced Service there is less flexibility.

Feedback from GPs and Primary Care managers suggest that NHS Ayrshire & Arran provide too many Locally Enhanced Services and that not enough resource is being allocated to the services which provide the most value. In addition, due to the large number of Locally Enhanced Services being provided, it is also difficult to manage the finance element of the programme and the Enhanced Services budget is significantly overspent.

As a result of the above, there was a real need within Primary Care to analyse the Locally Enhanced Services budget and determine

1. What are the Locally Enhanced Services which provide value for money and should be delivered as part of the Enhanced Services Programme Budget
2. What are the Locally Enhanced Services which are offering relatively little value for money and should not be delivered as part of the Enhanced Services Budget
3. How to reallocate resources from those services which provide little value for money to those that do provide value, and how much should be re-allocated.

These three questions served as the objectives of the PBMA pilot and clarified what information the process hoped to deliver. This application of PBMA to Enhanced Services is also of interest since this a real and significant issue within NHS Ayrshire &Arran.

Step 2 – Form Advisory Group

Within NHS Ayrshire & Arran there already existed an Enhanced Services Group which had the remit of reporting on financial information, dealing with issues and queries around the programme of services and providing general management and accountability. This group consisted of senior Primary Care Managers, potential GP representatives from North, East and South Ayrshire, NHS finance representatives, Public Health and senior Managers from Secondary Care. Therefore when seeking to determine an advisory panel to participate in the work, the Enhanced Services Group served as a starting point and it was also decided that members of the public should be invited to participate in this project.

Step 3 – Clarify existing resource mix and other information

Enhanced Services in NHS Ayrshire & Arran can be paid on a per item or patient basis with a standard fee being paid to a practice for delivering the service or the GP Practice is allocated a proportionate share for some services which is allocated based on the size of the list. Therefore, much of the activity and cost per patient information required for the programme budget was already potentially available.

The total resource allocated for the financial year 2014/15 to the 10 services identified for the PBMA process was £1,075,442.

Steps 4 and 5 – Determine locally relevant decision making criteria and identify options

One of the requirements for accepting a service into the review process was that there had to be a degree of flexibility regarding whether the service was provided or not. Therefore

since all the services included in the review could potentially be expanded or contracted, all the services could be labelled as both investment and disinvestment candidates.

After working through the list of Locally Enhanced Services delivered by NHS Ayrshire & Arran a final shortlist of 10 services were agreed by the group as being appropriate for the review process. The services are as follows:

1. Diabetes
2. Medicines Reconciliation
3. H-Pylori Eradication
4. Adults with Learning Disabilities
5. Contraceptive Implant Service
6. Management of Accident and Emergency Frequent Attendees
7. Service for Carers
8. Ring Pessary
9. Minor Injuries
10. Dermatology

Once the services which were to be included in the PBMA process were identified, a final discussion took place regarding decision making criteria. The purpose of developing a set of criteria was to determine the important issues that needed to be considered when appraising the services. A draft list of criteria was distributed to the group at the end of the session to encourage some initial thinking regarding potential issues for consideration.

Following this the Advisory Group agreed on 5 criteria; see Appendix 2 for the full criteria and definitions. As the meetings had been, to this stage, at least 2 hours in length, a decision was taken to complete the criteria weighting phase of the evaluation through email.

Step 6 – Score and rank options

An evidence pack was created, which compiles information and data regarding each of the services against each of the criteria. The purpose of this pack was to inform the participants and deepen their knowledge of the services in preparation for the scoring session.

The evidence pack was distributed to the participants in advance of the scoring meeting. At the meeting each participant was asked to score each of the Locally Enhanced Services under review against the criteria from 0 to 10, with low scores indicating the service performed poorly against the criteria and high scores indicating it performed favourably.

The scores were then collected from the participants and a Weighted Benefit Score calculated which is the score for each of the services multiplied by their relevant criteria weights. These scores are then totalled and averaged across the whole group.

The information gathered to this point enabled the services under review to be ranked firstly by their Weighted Benefit Score and then secondly by their cost value ratio. The cost value ratio is calculated by taking the cost per patient and then dividing this by the weighted benefit score.

The ranking of the services by their cost-value ratio also enabled objectives 1 and 2 to be answered; identifying the services which provide most and least value for money. In order to determine how much should be reallocated from each service we can take the resources from those services ranked at the bottom of the list and allocate it to those at the top. This in turn also provided an answer to objective 3 set out in earlier in the paper.

In order to test the robustness of the result it was worthwhile exploring the ranking of weighted benefit scores and the cost-value ratios by the various sub-groups which were present within the overall Advisory Panel. The results from this additional analysis and more detail on the process in Ayrshire & Arran are presented in Appendix 2.

Step 7 – Validate and review the process

The results of the process were presented to the group. At this stage of the process the Advisory Panel had an opportunity to sense check the output of the process and discuss how to progress the results.

There was general feeling from the group that a further piece of work was needed which looked at the impact of the decisions. In addition, this "impact analysis" was considered extremely important as the significance of the decision that the PBMA exercise was attempting to address started to become clear to certain members of the group.

Lessons learned

The output of a PBMA process may also be considered a starting point for discussion and the weighted benefits scores alone, the programme budgeting data, and the sensitivity analysis all contribute to the debate regarding where funds should or should not be allocated.

As the Advisory Group was made up of a range of stakeholders from a variety of backgrounds, it was encouraging that such a diverse group were fully engaged in decision making regarding resource allocation.

Overall, following the stages of the process generated substantial evidence to aid decision making and thus, the process was clear and transparent. If changes to the current allocation of resources were made then evidence on how the decisions were made could be easily and clearly demonstrated.

4.2. Highland – Caithness

Step1 – Determine aim and scope of the priority setting exercise

The remit was to focus on Older People's Services. From the initial meetings, and as this was a first iteration of PBMA, it was stated that the hospital resources could not be included in the process and the focus was to be on community services for older people.

Step 2 – From Advisory Group

Prior to the start of the pilot exercises, Caithness had already begun a service re-design programme of work and had identified six different work streams. For each of these work streams, there was a reference group. It was decided that the PBMA process would fit around the on-going work, using the information already gathered, and that some members of the reference groups would make up the Advisory Group. In Caithness, there was an emphasis on public and community involvement in the group. Therefore, the Advisory Group was made up of staff from health, social care, third sector and members of the public. In total there were 22 core members of this group.

Step 3 - Clarify existing resource mix and other information

A large amount of work had already been done looking at the breakdown of activity and costs for Older People's Services during the work with the Integrated Resource Framework

(IRF). However, more was required to bring the programme budget up to date and to include the social care data which are not routinely collected in the same way as the health data. This part of the process was progressed in parallel with the other steps (3-5).

Step 4 – Determine locally relevant decision making criteria

A draft list of criteria was distributed to the group at the end of the session to encourage some initial thinking regarding potential issues for consideration.

The criteria were discussed and the wording changed to incorporate the objectives of the Partnership. Six criteria with definitions were agreed; see Appendix 3 for the full criteria and definitions.

After the criteria had been agreed, the group were sent the weighting grid by email and asked to complete and return it; see Appendix 3 for the grid that was used. 12 weighted the criteria at this stage. However, following a further Advisory Group meeting, another meeting was held to include a wider group of the public and local councillors to outline the process and discuss the criteria. This group was then asked to weight the criteria. The weights were then combined over the two groups (Advisory Group and wider public group) and averaged. In total, 32 weighted the criteria.

Step 5 –Identify options

As mentioned, re-design work was on-going in Caithness using six work streams and these work streams were tasked with identifying options. Business cases were written by each reference group for each option identified and these then went to the Programme Board for the re-design work. Six options were put forward for the priority setting process with four options taken forward for step 6: (1) dementia specific day care in Caithness, (2) appointment of a befriending coordinator to develop the existing service, (3) dementia link worker co-located with the Older Adults Mental Health Team, and (5) designation of four nurse-led palliative care assessment beds.

A template business case was provided to give an idea of what type of information would be required for each option. This was set out so that each criterion had a separate section and evidence as to how each option met the criterion was to be included. The template is shown in Appendix 6.

Business cases were completed and sent out in advance of the scoring meeting to give those involved time to read each case.

Step 6 – Score and rank the options

At this meeting, the group were tasked with scoring each option out of ten against each criterion based on the evidence presented in the business cases; see Appendix 3 for the scoring grid used at this meeting. The process for scoring was explained and a representative for each business case was asked to do a short presentation and the group were able to ask questions or raise points for clarification. Once scored, the individual scores for each option were multiplied with the criteria weights and the scores averaged across the group. 41 people scored the options in total.

Further analysis on the scores for each option was conducted to look at variations in scoring amongst different groups in attendance and to see if different groups ranked the options in a different way. The results of this additional analysis can be found in Appendix 3.

Step 7 – Validate and review the process

The rankings will be presented at the Strategic Commissioning Group for consideration.

Once the recommendations have been made and agreed, a period of consultation will be required with the wider community to allow for the recommendations to be scrutinised further. This will allow for the process to be challenged and help with the final decisions for the budget planning process.

Lessons learned

The process gave the Caithness redesign process a way forward and allowed them to move away from emotive responses to a better understanding for stakeholders of how decisions are made and the types of choices that need to be made. It also required people to critically appraise the options that they had come up with themselves and look at them side by side and how they fit into the objectives of the organisation which is something which had not happened before.

Overall, there was a general feeling that it was a positive piece of work to undertake in order to overcome issues with taking the Caithness redesign work forward and to change thinking of how decisions are made and resources are allocated within health and social care.

4.3. Highland – Inverness

Step1 – Determine aim and scope of the priority setting exercise

The remit was to focus on Older People's Services. From the initial meetings, and as this was a first iteration of PBMA, it was stated that the hospital resources could not be included in the process and the focus was to be on community services for older people.

Step 2 – From Advisory Group

The process was led by the Area Manager and all the members on the group had been asked to take part and informed of the process either by attendance at the workshops or invited by the area manager.

Those who had attended the workshop were asked if they were interested in joining the panel. This included health, social care and third sector staff. In total, there were 11 core members of the group.

Step 3 - Clarify existing resource mix and other information

A large amount of work had already been done looking at the breakdown of activity and costs for Older People's Services during the work with the Integrated Resource Framework (IRF). However, more was required to bring the programme budget up to date and to include the social care data which are not routinely collected in the same way as the health data. This part of the process was progressed in parallel with the other steps (3-5).

Step 4 – Determine locally relevant decision making criteria

A draft list of criteria was distributed to the group at the end of the session to encourage some initial thinking regarding potential issues for consideration.

The criteria were discussed and the wording changed to incorporate the objectives of the Partnership. Six criteria with definitions were agreed; see Appendix 4 for the full criteria and definitions.

The Advisory Group weighted the criteria in the same meeting that the criteria were agreed. In total 10 weighted the criteria in Inverness.

Step 5 – Identify options

The Advisory Group were asked, in advance of a meeting, to think of areas for growth and areas for reduction. From these suggestions a long list of options was compiled which was then discussed at the meeting and a short list of options to take forward was agreed. This was achieved by smaller group discussions and the group thinking about the relevant objectives of the Partnership.

Four options were agreed in Inverness: (1) combining mental health day services in Inverness, (2) setting up a virtual support network for the community, (3) providing a Care at Home night service and, (4) moving to a single site for health and social care day services.

Business cases were started for each option and a Public Health Business Manager supported this part of the process and was able to search for evidence for the options. However, in evaluating these options, the group realised that the current budget position and initial planning for the 2014/15 budget suggested that there was a need for more substantial action. The team moved away from their initial ideas for investment/disinvestment, looking at small scale tests of change around day care and mental health, to look at an extensive reform of Care at Home in the area. This had previously been seen as too big an issue to tackle all at once.

Focussing on Care at Home allowed the team to address some issues, one being that the in-house provision of Care at Home had received poor quality ratings. Whilst the work to address this had been successful in elevating inspection ratings, it had also exposed significant problems in the structure and efficiency of the service.

In addition, care provision in Highland was becoming increasingly stressed. The Care Home provider base was experiencing numerous suspensions of admissions (and some closures) based on quality issues, to the extent that up to 63% of all available beds were inaccessible, whilst the Care at Home capacity was being challenged by difficulties recruiting staff and some provider instability. Therefore, the overall impact was on the delayed hospital discharge position which was quickly deteriorating.

As a result there has been a shift in activity from the in-house service to the independent sector and an increase in the quality of those providing Care at Home services (Grade 3 and above).

At the end of 2014/15 the staff numbers for the in-house service was 210.99 Whole Time Equivalents (WTE). As a result of the planned shift from the in-house service to the independent sector and self-directed support, the in-house service reduced by 12 WTE and £288k of budget was reallocated from in-house to independent sector and self-directed support. This represented approximately a 4.5% shift in the budget.

Lessons learned

The PBMA approach appears to have been influential in providing a structured argument for the changes outlined in Inverness. The PBMA process provided the catalyst for the group tasked with taking the work forward to make a step change by focusing on critical core business rather than focusing on reallocation between smaller services.

4.4. Perth and Kinross

Background

The work in Perth and Kinross partnership focused on using data to map the programme budget and to answer the first two PBMA questions about resources (Box 3.1):

1. What resources are available in total?
2. In what ways are these resources currently spent?

This project is a development of longstanding work on the Integrated Resources Framework (IRF), which mapped health and social care resources to localities and provided partnerships with an understanding of their allocation and utilisation of total health and social care resources across local populations, and of their interaction.

Perth and Kinross partnership were an early adopter of linked individual level health and social care datasets and have been able to link longitudinal health and social care activity and cost data at individual service user level for a number of years, enabling more comprehensive and detailed analyses, at individual or aggregated level (e.g. by care group or geography or other grouping), than has previously been possible. These data were used to map the programme budget so as to understand current resource patterns and the potential for changing the use of these resources to improve outcomes.

Mapping the Health and Social Care Programme Budget

Examples from the analysis of the programme budget are shown in Figures 4.1-4.5 below, with further analyses included in Appendix 5.

Figure 4.1: Sample of demographic data from joined IRF dataset

IRF Number	COHORT FLAG	Ageband for Older people pivots	5 year age bands	10 year age bands	Datazone	P&K/ Not P&K	Locality * 5	Settlement	Ward	Locality* 4	GP Practice	Deprivation Quintile (1=most deprived; 5=least deprived)
41606	NON ADP	65 to 74	65-69	60 - 69	S01005045	P&K	Perth	Perth	Perth City South	South Perth	13975	5
59568	NON ADP	under 65	35-39	30 - 39	S01005014	P&K	Perth	Perth	Perth City South	South Perth	14342	1
94190	NON ADP	75 and over	80-84	80+	S01005061	P&K	Perth	Perth	Perth City Centre	North Perth	14037	1
30991	ADP	65 to 74	65-69	60 - 69	S01005025	P&K	Strathearn	Comrie	Strathearn	South	10017	2
118499	NON ADP	75 and over	80-84	80+	S01005128	P&K	Strathmore	Blairgowrie	Blairgowrie and Glens	North	10407	4
25598	NON ADP	75 and over	85+	80+	S01004979	P&K	Kinross	Kinross	Kinross-shire	South	13481	5
2827	NON ADP	under 65	45-49	40 - 49	S01005015	P&K	Strathearn	Crieff	Strathearn	South	10835	3
43028	NON ADP	under 65	20-24	20 - 29	S01005100	P&K	NW Perth	Luncarty	Strathtay	North	99961	5

Each row in Figure 4.1 above is a unique person, and there are approximately 120,000 people in this dataset. This section of information is essential to the filtering of the dataset, to start looking for correlations, shapes and patterns in the data.

For example, filtering on the GP Practice column enables us to consider only the patients from one GP practice or a cluster of GP practices. Filtering next on age group will restrict the information for those GP Practice patients to a specific age group.

One of the key filters is the 'Locality*4' column that enables us to select one of our localities and analyse all the information concerning consumption, GP behaviour, unplanned

admissions and Care Home usage etc. and from that build profiles of localities for developing the Strategic Plan.

After the locality filter, one of the most critical filters is the SIMD deprivation quintiles where we can start comparing the consumption of Health and Social Care resources by quintile 1 (most deprived cohorts) against, for example, the consumption of quintile 5 (least deprived cohorts). Essentially it is in these comparisons we start to see gaps in delivery and opportunities to invest and disinvest in service areas and target populations.

Figure 4.2 looks at another selection of individuals and their Social Care consumption.

Figure 4.2: Sample social care data from joined IRF dataset

Total Social Care Net	Total Heath Net	Total Health & Social Care Net	Net Hcc Access Team	total Adult Care Management	Net Comm Alarm Team	Net Hcc Ot Team	Net Hcc Reviewing Team	Net Out Of Hours Service	Net care Home Private WEEKS	Net Care Home LA WEEKS	Net CAH Private Provider Annual Hours	Net PKC Care at Home ANNUAL HOURS
£131,165.66	£960	£132,125		£69							£8,550	£122,547
£101,419.02	£14,927	£116,346	£477	£1,778	£182	£3,502	£8,101	£2,072				£85,230
£93,233.92	£2,508	£95,742	£136	£1,313	£182		£206				£3,281	£88,116
£84,728.43	£13,155	£97,884	£68	£5,113	£26,511			£188			£1,327	£51,514
£70,492.68	£2,006	£72,499		£561								£69,816
£69,158.89	£3,061	£72,220			£1,090							£68,069

Unlike the demographic data in Figure 4.1 which is used to filter the dataset, this section focuses on the costs and activity of the filtered data and allows for sorting of the data by highest to lowest cost/consumption in order to understand who are the high/low consuming cohorts. The “Total Social Care”, “Total Health” and “Total Health and Social Care” costs allow generation of locality consumption budgets and to monitor our “Shifting the Balance of Care” strategies.

Figure 4.3 demonstrates an example of individual’s consumption of Health Care resources.

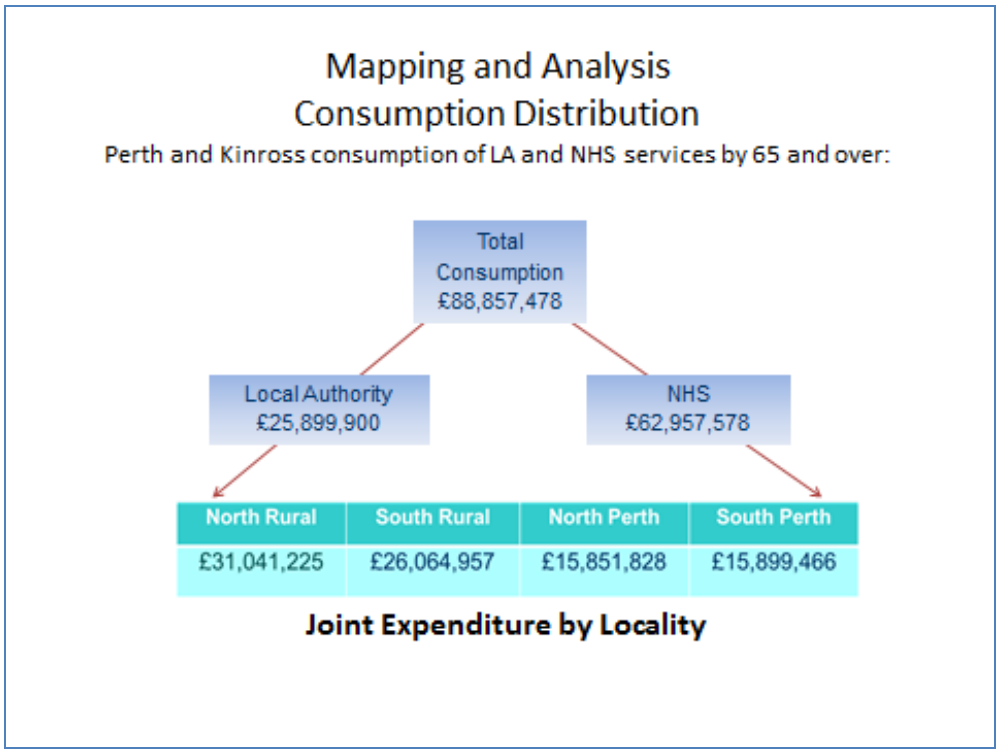
Figure 4.3: Sample hospital data from joined IRF dataset

Acute Non Elective Inpatient Episodes (SMR01)	Acute Non Elective Inpatient Net	Acute Non Elective Inpatient Days	Acute Non Elective Inpatient Admissions	Acute Elective Inpatient Episodes (SMR01)	Acute Elective Inpatient Net (SMR01)	Acute Elective Inpatient LOS	Acute Day Case Net	Acute Day Case Episodes	A & E Attendance	A & E Net
6	£12,805	29	5			0				
1	£1,602	5	1			0			1	£103
3	£5,829	17	3	1	£6,328	5			2	£206
1	£1,698	7	1			0				
2	£2,781	12	1			0				
3	£6,431	15	2			0				
7	£64,687	135	5			0			2	£206
1	£2,461	8	1			0				
5	£29,063	67	2	1	£741	2			1	£103
1	£1,030	3	1			0			1	£103
4	£8,977	25	2			0				
2	£1,069	1	2	17	£64,697	66	£382	1		

Similar to Figure 4.2, this section is to enable the costing and ordering of the filtered data to understand the scale and cost of service use (for example, unplanned admissions (Acute Non Elective Inpatients) or planned admissions (acute elective inpatients)). Other information in this section covers e.g. prescribing costs and number of items prescribed etc.

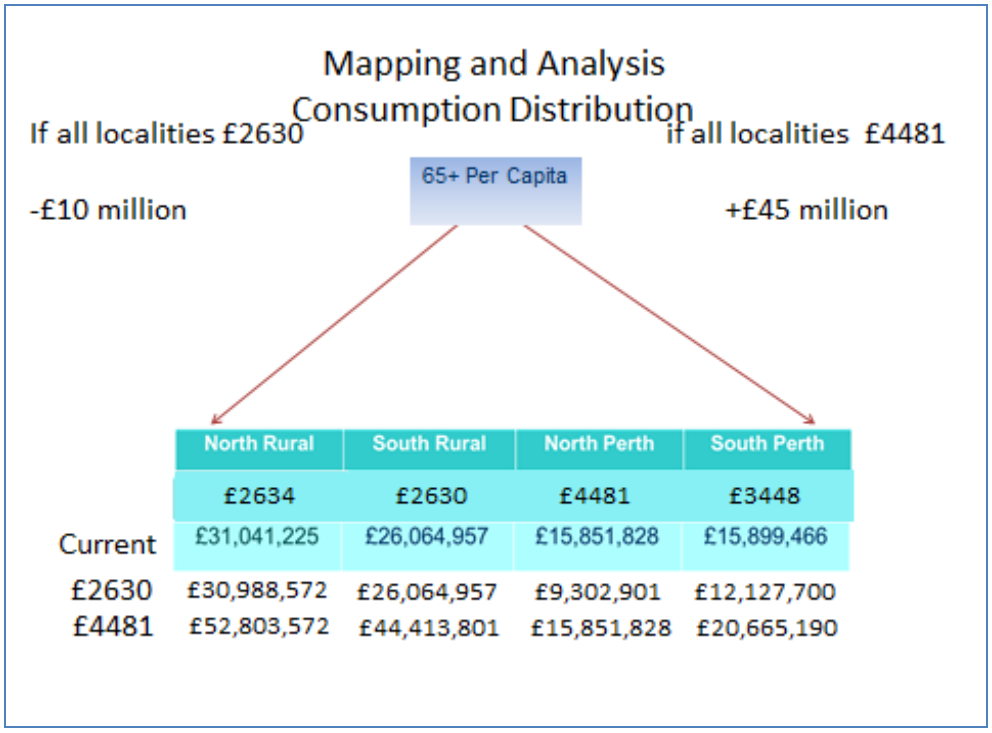
Figure 4.4 shows total consumption of Local Authority and NHS services by over 65s split into geographies. From this we can observe where the greater consumption of services occurs.

Figure 4.4: Perth and Kinross consumption of LA and NHS resources for people aged 65+



However, consumption alone does not explain the cost or efficiency of a service and therefore, it is more meaningful when we convert the consumption to per capita rates by dividing the locality consumption cost by the size of the appropriate population as shown in Figure 4.5. This allows us to begin to show patterns of resource consumption by the different localities.

Figure 4.5: Variation in resource consumption by locality



Once done, Figure 4.5 clearly shows the lower consumption per capita of the rural localities (£2,634 and £2,630) when compared to the urban localities (£4,481 and £3,448). This leads to questions concerning proximity to services and access to services which will need to be answered for the Health and Social Care Strategic Plans.

Additionally Figure 4.5 enables calculations to understand how changing consumption behaviour may affect overall consumption. If all localities consumed at rates similar to South Rural Perthshire then there would be a consumption reduction in the region of £10m. Alternatively if all localities consumed at rates similar to North Perth City there would be a consumption shortfall of £45m.

Lessons Learned

The integration of Health and Social Care and the development of the Strategic Plans for the Integration Partnerships require a level of business intelligence, consumption knowledge and analysis that is greater than normally used and applied as has been shown from the analysis conducted by Perth and Kinross.

If partnerships are to improve outcomes by investing more in new or existing interventions and disinvesting in others, they need information on where and on what resources are currently spent. Such informed decision making can only take place when there are robust datasets and knowledge that can be analysed to understand the patterns, trends and relationships in resources and outcomes that exist between services, geographies, care groups, pathways and cohorts.

To fully understand the reasons underlying differences in resource consumption requires a longitudinal walk through the care processes and pathways of individuals and groupings of individuals; only then is it possible to identify the opportunities for re-design and subsequently, candidates for investment/disinvestment.

5. Conclusions and recommendations

The PBMA process provided the pilot sites with a transparent, inclusive and structured approach to prioritisation. It promoted debate and critical appraisal of options amongst stakeholders based on an understanding of the benefits and costs associated with the potential choices and provided a basis by which decisions could be justified.

A particular strength was the role and composition of the Advisory Group. Although the membership of the groups was different in each pilot, the benefit of including other stakeholders, such as service users, carers and service providers, alongside statutory providers in a co-production approach was evident.

A further important advantage of the approach was its scope. By requiring consideration of the current use of resources across a programme, alongside the potential alternatives, the PBMA process combines investment with disinvestment decisions.

The results of the pilots suggest that there are some parallels between PBMA and the requirements of a prioritisation process for use by Integration Authorities in developing their Strategic Plans. In particular, the structured approach would allow the Integration Authority, in consulting on its Strategic Plan, to be explicit about the basis of decisions and the focus on the entirety of resources. Rational investment and disinvestment based assessment of costs and benefits will allow the Integration Authority to demonstrate Best Value. The prominent role given to the Advisory Group in the process will potentially fit with the role of the Strategic Planning Group in advising the Integration Authority. The information required to inform the process will be readily met by the HSCDIIP platform developed by NSS.

A number of constraints were identified.

The pilots required investment to apply the technique, generate buy-in, facilitate meetings, liaise with public representatives, perform analysis and present results. Although some of the time required for this in the pilots will have been associated with establishing the process, there will be a recurrent cost required to administer it on a regular basis. In addition, clinician's time will need to be protected to allow participation. However, it is expected that time from administering an existing prioritisation process will be freed up.

To ensure the process is effective will require robust datasets on current service patterns, resource utilisation and outcomes, population needs assessments and projections, and costs and benefits of new interventions. There is a risk that this places a significant additional demand on local systems. However, it could be argued that this level of information is what is required for effective prioritisation and its unavailability is a problem for current processes rather than for PBMA. Nevertheless, a balance will need to be struck between the value of the information generated with the investment required to produce it.

For stakeholders to commit to the process, the Advisory Group will need to be invested with the necessary authority to make recommendations on which the final resource allocation decisions are made.

There was some variation across the pilots in the scope of the programmes that were included in the PBMA process and also in the extent to which the seven stages were implemented. Notwithstanding this, the test sites were very positive about the approach taken and allowed them to progress with a decision making process while changing thinking of those involved of how decisions are made and resources can be (re)allocated within health and social care.

The SG should consider advising the use of PBMA (or at least a process with similar characteristics to PBMA) in Strategic Planning by Integration Authorities.

6. Appendices

In Section 2, the economic principles (opportunity cost and marginal analysis) are briefly explained. These two principles are crucial when thinking about an economic approach to priority setting. In order to explain the concept of marginal analysis further, two examples are provided in Appendix 1. Example 1 shows a decision maker faced with a given mix of resources for two programmes - an elective heart operation programme and an elective hip replacement programme. What is the best mix of resources for these two programmes to maximise benefit?

Example 2 explores the choice of health care setting (hospital or community) for frail older people with different levels of dependency. In this example it is the patients who are 'at the margin' based on their level of dependency and the decision is now to decide the appropriate place of care taking into account the costs and benefits of each care setting.

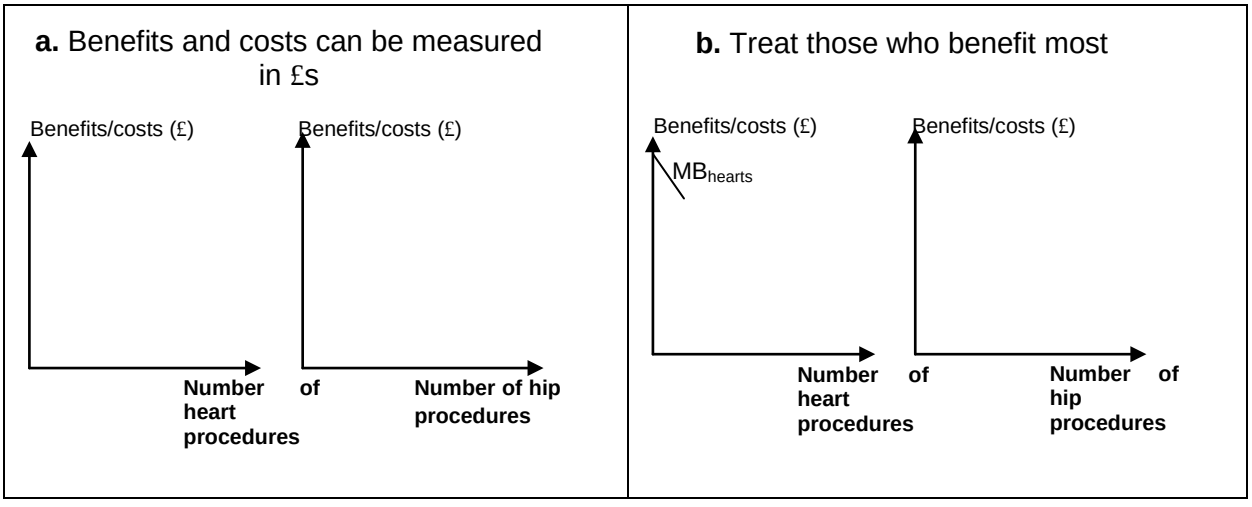
Appendix 1: Examples of Marginal Analysis

Example 1 – Hearts and Hips

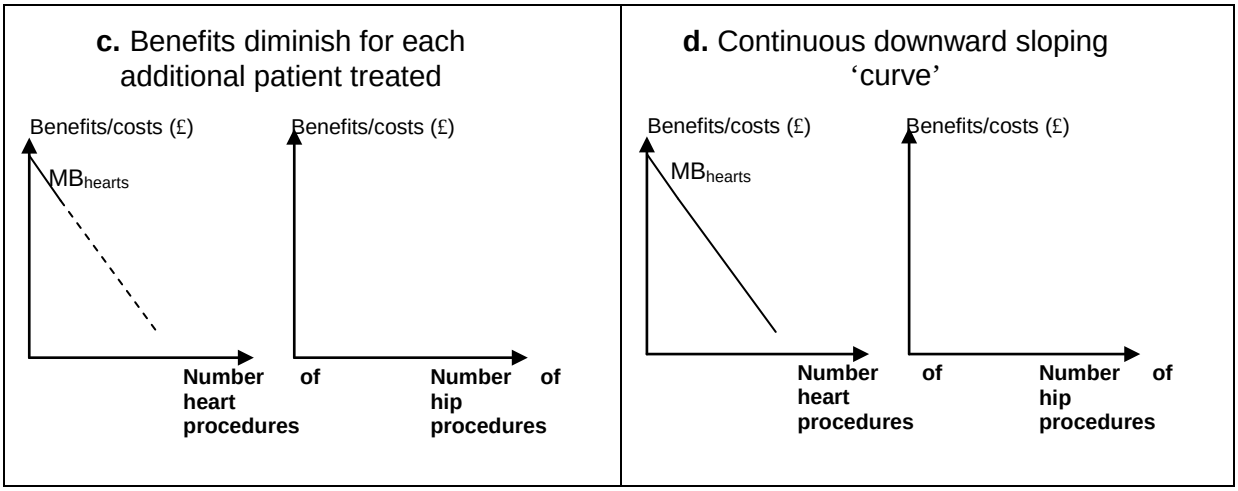
If the marginal benefit per £ spent from, say, an elective heart operation programme is greater than that for an elective hip replacement, then resources should be taken from hips and given to hearts. But where does this allocation process stop? Do we wipe out the hips programme completely?

This is best answered by use of the following sequence of diagrams.

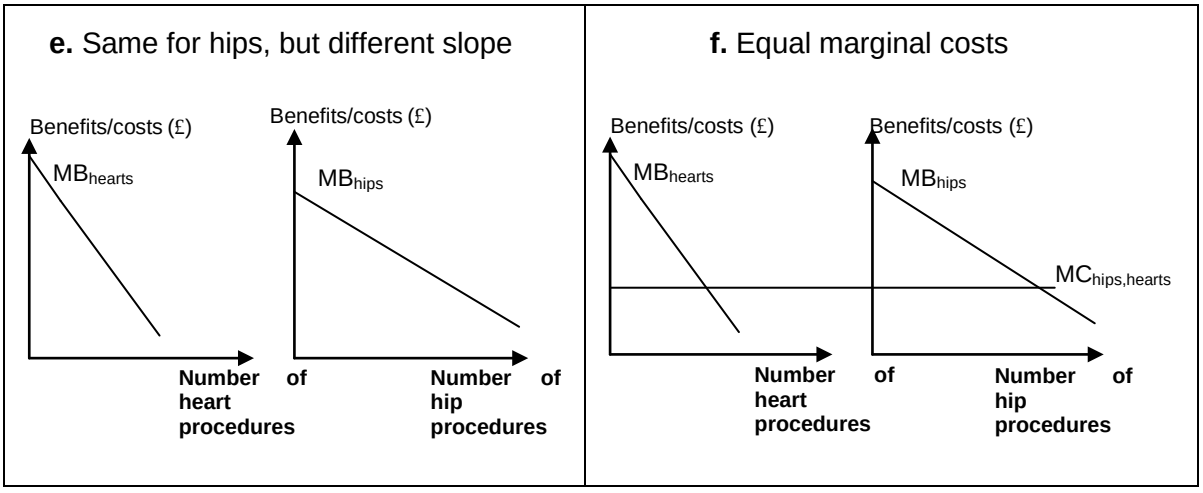
Let us assume we can measure both costs and benefits (i.e. health gains) from treating hearts and hips in terms of money, as on the vertical axis (see Diagram a). This makes the following arguments easier to explain, but they would still hold even when using a non-monetary measure of health. A further assumption is that these programmes and all others are operating at maximum 'technical efficiency' in the sense of there being no waste in the system. Minimisation of technical inefficiencies would obviously be desirable as a first step, but is set aside for now for purposes of illustration. First, we invoke the standard economic principle of diminishing marginal benefit, where service users differ in their ability to benefit from treatment. Then we make the reasonable assumption that health professionals prioritise service users according to potential to benefit. Thus, those who gain most from a heart operation will be treated first (as in b).



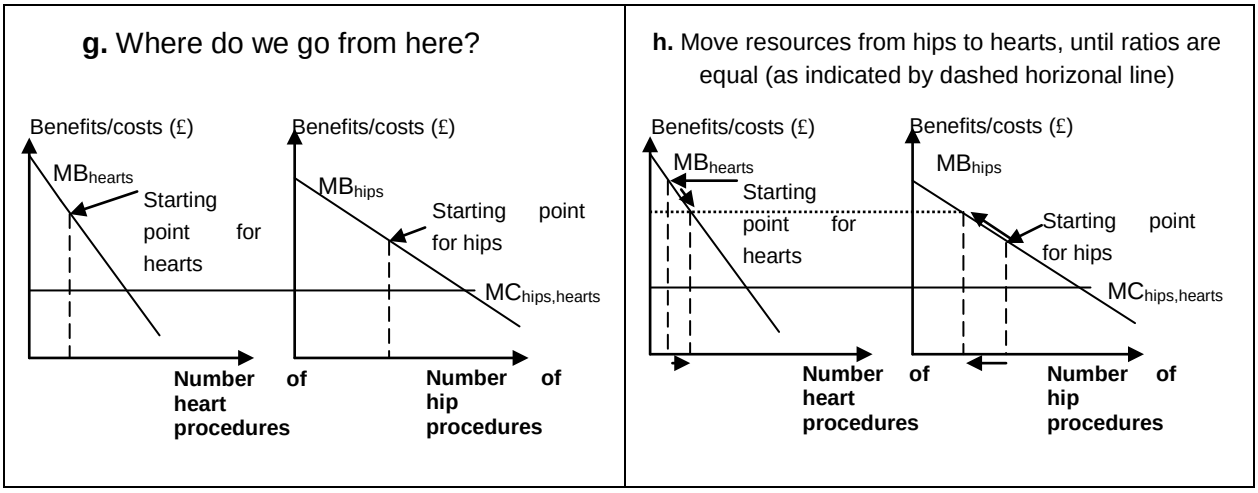
Accordingly, if we increase the number of service users that are treated over a set period of time, we are adding service users that benefit less and less from the procedure, leading to the downward sloping marginal benefit (MB) line for hearts (c and d) and a corresponding one for hips (e).



In this example the hips line has a less steep slope (e) meaning that the marginal benefit diminishes more slowly as more hips are treated. We also assume for purposes of illustration that the cost of each procedure is constant and equal for all service users receiving the procedure (MC) (f).



At any point in time, a decision maker is faced with a given mix of resources, portrayed here by the starting points for hearts and hips (g). The questions are whether this is the right mix and what changes might be made in that mix. At the starting point for hips, the gap between marginal benefit (MB) gained and marginal cost (MC) is greater than at the margin for hearts. This indicates that resources should be taken from hips and reallocated towards hearts. However, cutting back on hips from its starting point (g) will increase its ratio of marginal benefit per £ spent, whilst expanding hearts will diminish its equivalent ratio (i.e. we will get less and less return in terms of health gain for each additional £ invested in hearts). To maximise total patient benefit derived from the combined budgets of the two programmes, the process of reallocation should continue until the ratios of marginal benefit to marginal cost for the programmes are equal (h).



Thus, we would never consider a total elimination of either service, although this is indeed possible depending on the shape of the curves and the general fiscal situation. But generally, the application of economics becomes a choice about the balance of services, not the introduction or elimination of an entire service. Examining changes at the margin is central to attempting to make the most of resources available by deploying them either across or within programmes so that relevant outcomes are achieved in the best manner possible

Example 2 - Using marginal analysis to determine the optimal 'balance of care'

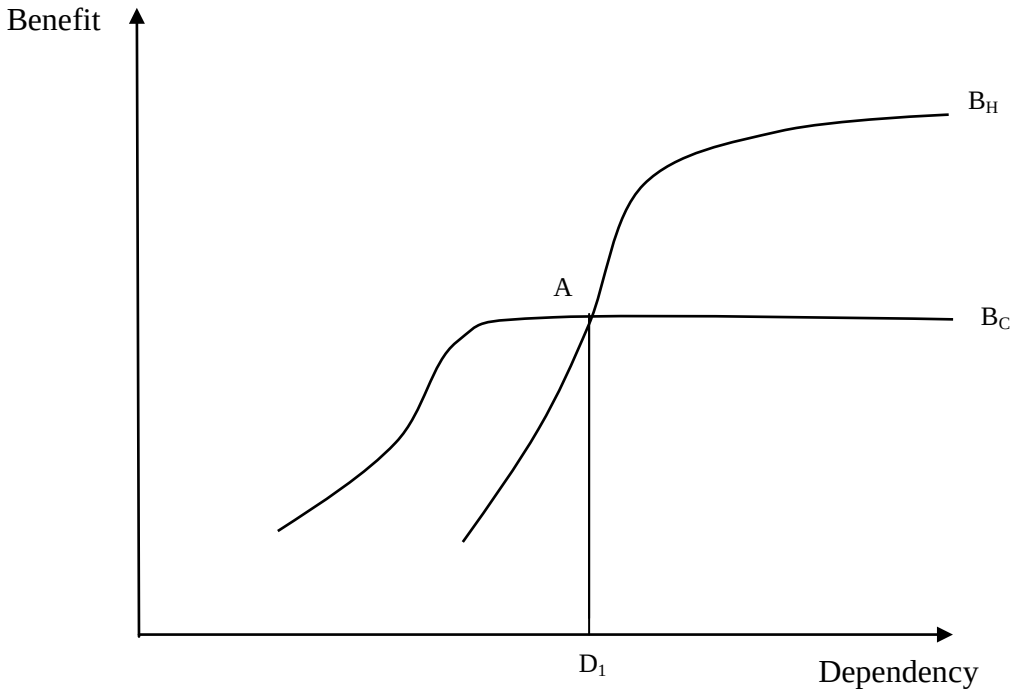
The case of comparing hearts and hips patients might be seen as stark in the sense of taking resources from one group of patients to give to another. However, it is useful for illustrating the principle of diminishing marginal benefit that underlies marginal analysis. In this section, we build further on the idea of 'the margin', by exploring the choice between hospital or community as a setting for frail older people with different levels of dependency, which is perhaps more representative of the type of issue faced by many Health and Social Care Partnerships.

The case study builds on the work of Mooney (1978)[6], which, amongst other things, shows that health economists have been thinking about these issues for some time! But, the creation of more-integrated Partnership structures presents a better opportunity to put these theories into practice.

For example, in Figure A1.1, the marginal benefits of being cared for in a Community (C) or Hospital (H) setting are portrayed on the vertical axis whilst the increasing dependency level of numbers of older people is portrayed on the horizontal axis. At lower levels of dependency, older people are better off being cared for in the Community. As reflected in B_C, the benefits of being cared for in this setting increase as dependency increases, but then level off. Indeed, after D_1, where the benefits of being cared for in the Community and in Hospital are equal (see point A), it becomes more beneficial to treat people in Hospital (indicated by B_H being greater than B_C from D_1 onwards).

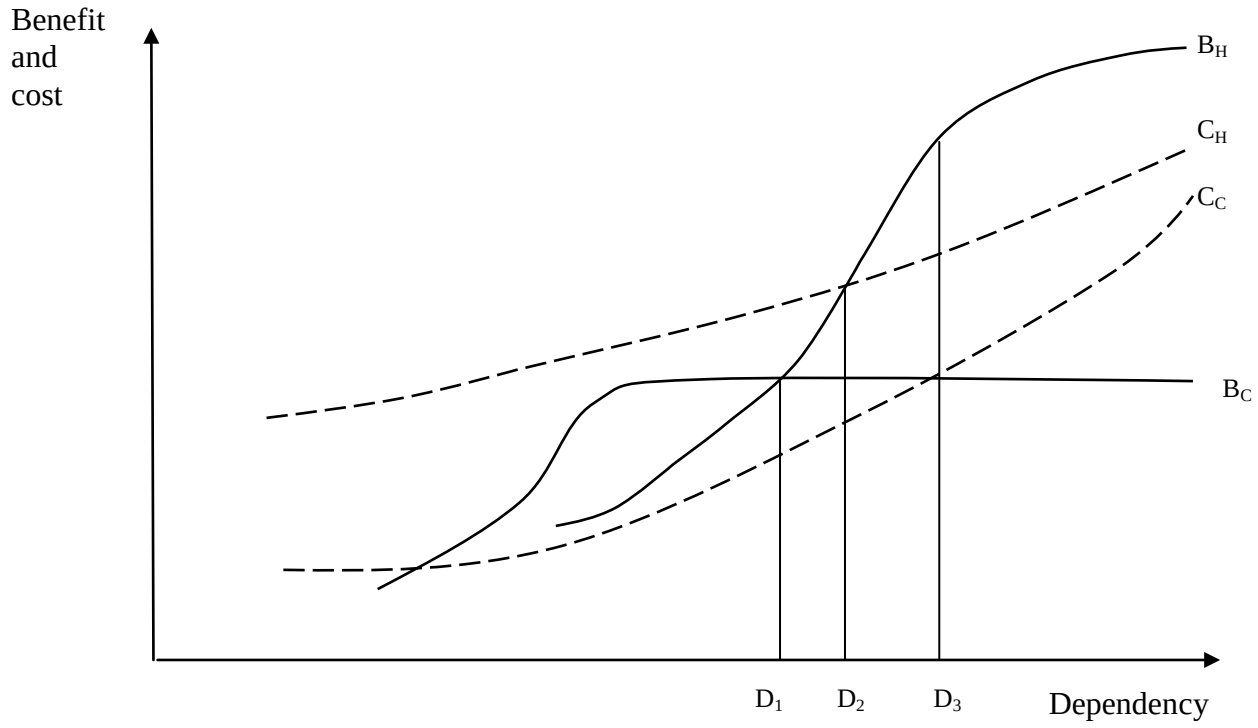
[6] Mooney G (1978) Planning for balance of care of the elderly. *Scottish Journal of Political Economy* 25: 149-164.

Figure A1.1: Relative benefits of caring for older people in the Community or in Hospital



If there were no costs involved in care provision, then relative provision would simply be reflected in the proportions of older people falling into different categories of dependency. However, inevitably the relative costs of provision in each of these settings also have to be taken into consideration. This is done in Figure A1.2.

Figure A1.2: Benefits and cost of Community and Hospital care



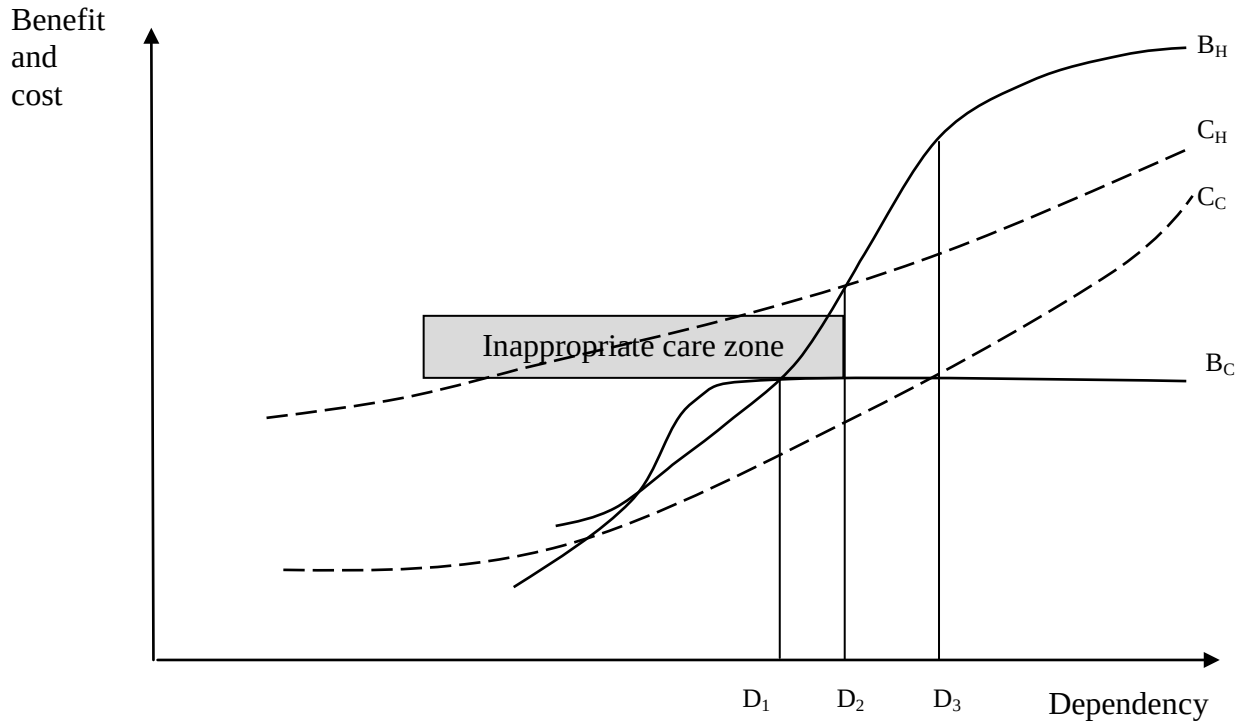
In Figure A1.2, the two main (and reasonable) assumptions are that the costs of Hospital are portrayed as always being above those of care in the Community and, in each setting, costs rise with dependency levels of clients.

The issue, then, is the relationships between the costs and benefits of the different locations, especially 'at the margin'. Below dependency level D_1, there is no question that the best place is Community – benefits (B_C) are greater and costs (C_C) are lower than the Hospital option (B_H and C_H). For those with dependency levels above D_3, care should be in Hospital as, beyond this point, the costs of care in Community (C_C) exceed the benefits, whilst the benefits from being in Hospital (B_H) exceed the costs as well as far exceeding the benefits from being in the Community (B_C).

Another important point in the dependency spectrum is D_2. Above this level of dependency, it would be likely that older people should be cared for in Hospital as $B_H > C_H$ and is also higher than B_C. So, the extra costs of Hospital care at this level of dependency are likely worth incurring. Between D_1 and D_2 Hospital remains more beneficial than Community, but only slightly more. Therefore, the closer we get to D_1, the more decisions will need to be made 'at the margin' i.e. is it beneficial to incur the extra cost for the extra benefit for a given level of dependency. The cost differential is large, with Community offering significant savings but there is a potential for increased benefits from Hospital care.

The key issue then becomes whether there are significant numbers of patients with dependency levels below D_1 (and perhaps even below D_2) who are in Hospital. This has been indicated by the shaded area in Figure A1.3 that we might refer to as the 'inappropriate care zone'.

Figure A1.3: Area of possibilities for reshaping care of older people



Within this range of dependency levels, if in Hospital rather than Community, this would reflect the major policy challenge of people experiencing excess stays in Hospital, i.e. delayed discharge. In these cases, it would be not only more beneficial (if below D_1) but also less costly (potentially, significantly less costly) for them to be cared for in a Community setting. The smaller the zone, the more people in a given geographic area covered by a Partnership are already in the 'right' locations. The larger the zone, the more potential exists to make appropriate changes in the balance of care, which would even result in there being less of a dilemma then about where to locate people between D_1 and D_2, as there would likely be capacity in the system to have them be able to switch between the two. Also, between Hospital and Community, there would, of course, be intermediate options (e.g. residential care) that would be even more cost effective for such people, but which have not been portrayed here for reasons of simplicity.

Alongside the different options for where people are cared for (Community, Residential or Hospital), it is also important to think about services in the community which may be in place to assist frail older people to continue to live at home or in the community. These services are the type of service that may be looked at in a priority setting process where resources may be reallocated to more community based services. For example, a support network (including support staff) in the community to help people manage and access health care services. This may also be supported by a virtual support network where appropriate. The level of these types of services offered will differ as in Figures A1.2 and A1.3 due to the difference in dependency of the older individuals.

In Section 4 a summary of the experiences and lessons learned from each pilot site is provided. In Appendix 2 to 6 a full report on each pilot site is provided. In these full reports more detail is provided on the options, decision-making criteria, weighting and scoring meetings with examples of the weighting and scoring grids used and the results from the processes. In addition, the template business case that was provided in Caithness is outlined in Appendix 6.

Appendix 2: Ayrshire & Arran

Appendix 2 outlines the process followed in Ayrshire & Arran focusing on GP Enhanced Services. The 7 steps outlined in Box 3.2 are used as a guide to document the process.

Step 1 – Determine the aim and scope of the priority setting exercise

Enhanced Services are services delivered by GP practices in addition to their basic contract and for which they receive additional payment. There are three types of Enhanced Service; Directed Enhanced Services, National Enhanced Services and Locally Enhanced Service. This review focused on Locally Enhanced Services which are designed locally, to meet local needs, extend choice and improve the patient experience. However crucially with Locally Enhanced Services there is a degree of discretion regarding whether the service is provided or not, or to what level that service is provided, while with the other two forms of Enhanced Service there is less flexibility. Therefore the Locally Enhanced Services were the focus of the PBMA process due to the flexibility in their delivery.

In total, the annual Enhanced Service budget is around £3 million with over a third of this being spent on Locally Enhanced Services. Feedback from GPs and Primary Care managers suggest that NHS Ayrshire & Arran provide too many Locally Enhanced Services and that not enough resource is being allocated to the services which provide the most value. In addition, due to the large number of Locally Enhanced Services being provided, it is also difficult to manage the finance element of the programme and the Enhanced Services budget is significantly overspent.

As a result of the above, there was a real need within Primary Care to analyse the Locally Enhanced Services budget and determine:

1. What are the Locally Enhanced Services which provide value for money and should be delivered as part of the Enhanced Services Programme Budget?
2. What are the Locally Enhanced Services which are offering relatively little value for money and should not be delivered as part of the Enhanced Services Budget?
3. How to reallocate resources from those services which provide little value for money to those that do provide value, and how much should be re-allocated?

These three questions served as the objectives of the PBMA pilot and clarified what information the process hoped to deliver. This application of PBMA to Enhanced Services is also of interest since this is a real and significant issue within NHS Ayrshire & Arran.

Step 2 – Compile a programme budget, beginning with a map of current activity and expenditure

Typically, Enhanced Services in NHS Ayrshire & Arran are paid on a per item or patient basis with a standard fee being paid to a practice for delivering the service. For example, one Locally Enhanced Service provided by GP practices is the female Contraceptive Implant service, and every time a practice performs an implant they receive a fee of £25.81. However the fee can vary from service to service. The GP practice invoices the NHS for the

number of patients or procedures they have delivered, and a per item fee is then paid. This means that much of the activity and cost per patient information required for the programme budget was already potentially available.

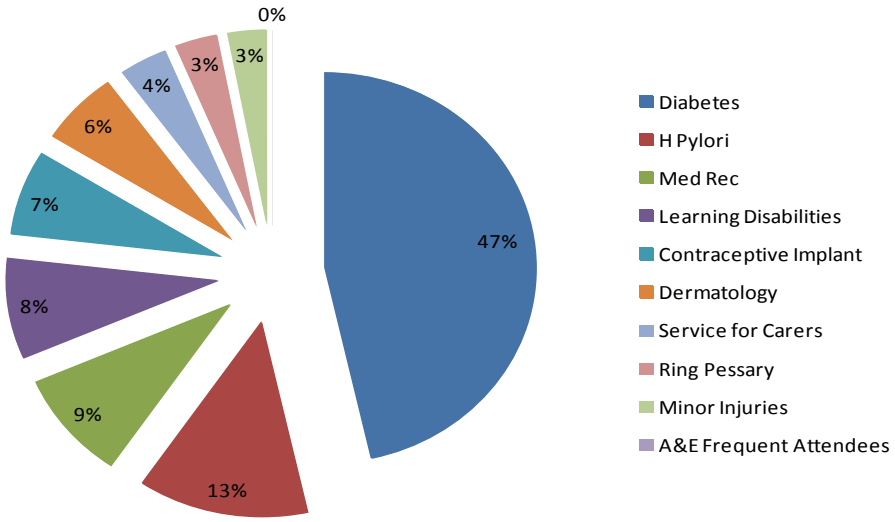
However, not all services are delivered on this basis. For example with the Service for Carers Locally Enhanced Service, a proportionate share of £40,000 is allocated to a practice based on their list size, or in the case of the Medicines Reconciliation service, a practice is simply allocated £2,500 to deliver the service. Crucially however the amount set aside for delivering the service is already pre-determined and therefore there is no need to determine what is being spent on particular services through bottom up costing. In addition, if a cost per patient was required in order to allow comparisons against services with a per item fee, the amount set aside for the service is simply divided by the activity. For example in relation to the Medicines Reconciliation service, the £2,500 would be divided by the number of patients which used that service in a year.

The total resource allocated for the financial year 2014/15 to the 10 services identified for the PBMA process and the amounts allocated to each service are listed in Table A2.1 below. Figure A2.1 provides a graphical representation of the programme budget allocation.

Table A2.1: Programme Budget

Service	**Allocation (£)**
Diabetes	500,000
H Pylori	140,000
Medicines Reconciliation	96,442
Learning Disabilities	90,000
Contraceptive Implants	76,000
Dermatology	66,000
Service for Carers	40,000
Ring Pessary	35,000
Minor Injuries	32,000
A&E Frequent Attendees	0
Total	1,075,442

Figure A2.1: Programme Budget by Service Allocation



As Table A2.1 and Figure A2.1 demonstrate the Diabetes service is allocated with a large portion (46%) of the budget associated with these 10 services. In addition, a decision was taken by the Primary Care Management Team prior to the exercise being completed to cease funding the Management of Accident and Emergency Frequent Attendees service. Therefore the service is associated with no funding for the financial year 2014/15.

Table A2.2 presents the cost per person, or cost per patient associated with each of the services.

Table A2.2: Cost per patient for each service

Service	**Cost Per Patient (£)**
Medicines Reconciliation	2
Service for Carers	5
H Pylori	25
Contraceptive Implants	28
Diabetes	29
Learning Disabilities	44
Ring Pessary	50
Minor Injuries	53
Dermatology	110
A&E Frequent Attendees	188

It is clear from the table that the Medicines Reconciliation is the least costly service to provide from an NHS perspective, closely followed by the Service for Carers. The A&E Frequent Attendees service is the most costly service to provide on a per patient basis from the NHS perspective. As a decision was taken to cease funding this service for the 2014/15 financial year, data from the previous financial year were used to calculate the cost.

Step 3 – Form Advisory Group

Within NHS Ayrshire & Arran there already existed an Enhanced Services Group which had the remit of reporting on financial information, dealing with issues and queries around the programme of services and providing general management and accountability. This group consisted of senior Primary Care Managers, potential GP representatives from North, East and South Ayrshire, NHS finance representatives, Public Health and senior Managers from Secondary Care. Therefore, when seeking to determine an advisory panel to participate in the work, the Enhanced Services Group served as a starting point. It was also decided that members of the public should be invited to participate in this project.

Public recruitment was managed through the Person Centred Care Team based within NHS Ayrshire & Arran. The Health Economics Team developed a background and information document which included the above information and was then circulated by the Person Centred Care Team to various Public Groups which are associated with the organisation. Once all the necessary documentation was provided and recruitment was completed the responsibility of keeping the members of the public involved and informed throughout the process then transferred to the Health Economics Team.

Steps 4 and 5 – Determine locally relevant decision making criteria and identify options

The first PBMA meeting was scheduled for 23rd October 2013 and all Advisory Group members were invited to attend. At this meeting a presentation was provided to the group regarding the context and what had motivated the PBMA exercise. In addition, the overall aim of the process was clarified, and the PBMA technique and the stages of the methodology were also explained. At this stage of the process the participants had opportunity to ask questions and challenge either the motivation of the work or the methodology. Enabling participants to do this and engage with the technique was essential in order to generate buy in and support for the work from the outset.

The next part of the meeting involved determining what services were to be included in the PBMA exercise. The rationale for restricting the evaluation to Locally Enhanced Services was explained to the group and the Advisory Panel agreed that this was appropriate. However, not all Locally Enhanced Services were included in the exercise as some services were not considered suitable for this type of evaluation. For example the Tetanus/Diphtheria/Polio Booster Service Locally Enhanced Service was considered essential and should be maintained as part of the immunisation programme.

One of the requirements for accepting a service into the review process was that there had to be a degree of flexibility regarding whether the service was provided or not. Therefore since all the services included in the review could potentially be expanded or contracted, all the services could be labelled as both investment and disinvestment candidates.

After working through the list of Locally Enhanced Services delivered by NHS Ayrshire & Arran a final shortlist of 10 services were agreed by the group as being appropriate for the review process. The services are as follows:

1. Diabetes
2. Medicines Reconciliation
3. H-Pylori Eradication
4. Adults with Learning Disabilities
5. Contraceptive Implant Service
6. Management of Accident and Emergency Frequent Attendees
7. Service for Carers
8. Ring Pessary
9. Minor Injuries
10. Dermatology

As previously discussed all the services under review are potential investment and disinvestment candidates and the aim of the exercise is to identify where funds should be allocated to arrive at a cost-effective allocation of scarce resources. In addition, although the services are all delivered by GPs in GP practices, they are very different in terms of their aim and delivery. For example, the H-Pylori breath testing service, the Ring Pessary fitting and maintenance service, and the Contraceptive Implant service, are all essentially clinical procedures which have traditionally been provided in Secondary Care which are now delivered by a GP. However, the Service for Carers and the Management of Accident and Emergency Frequent Attendees service are not procedures as such but reviews of patients who have been placed on a database and their health needs assessed. In a sense these services could be considered more preventative in nature as the review attempts to highlight any future health needs, while the other set of services are more reactive and have the aim of reducing the current active workload of secondary care services. This variety of services under review was a positive aspect of the pilot since it reflected the very real challenge NHS managers face when making resource allocation decisions across multiple competing projects all with different aims and objectives.

Once the services which were to be included in the PBMA process were identified on the 23rd October, a final discussion took place regarding decision making criteria. The purpose of developing a set of criteria was to determine the important issues that needed to be considered when appraising the services. A draft list of criteria was distributed to the group at the end of the session to encourage some initial thinking regarding potential issues for consideration.

A second session was scheduled for the 27th November 2013 which was mainly attended by the members of the public and Primary Care Management staff. At this session the group reviewed the original draft criteria and developed the criteria significantly leading to a new set of draft criteria which were more appropriate for the exercise. This second set of draft criteria were then distributed to the rest of the Advisory Panel and any final amendments or comments were incorporated through email. The Advisory Panel agreed the final set of criteria to be used in the PBMA process on the 16th December.

The Advisory Group agreed on 5 criteria, shown in Box A2.1.

Box A2.1: Ayrshire and Arran criteria definitions

Effectiveness

The Enhanced Service represents a safe high quality service that significantly improves patients' health, independence and well-being.

Patient Experience

Providing the Enhanced Service in a Primary Care setting delivers a positive patient experience ensuring continuity of care. Aspects of a positive patient experience should be convenient, friendly, timely and patient centred.

Practicality

The Enhanced Service should be feasible in terms of maintaining clinicians' skills, expertise and allow clinical staff to perform their roles effectively providing a safe, high quality service to patients. The option should also enable practical and appropriate use of clinical time, staff, facilities and equipment.

Impact on Secondary Care

The enhanced service should reduce the demand for secondary care services. It should follow that specialist intervention is only sought when required ensuring efficient use of resources.

Sustainable

The Enhanced Service should be able to accommodate changes in patterns of care and also the changing health needs.

As the meetings had been, to this stage, at least 2 hours in length, a decision was taken to complete the criteria weighting phase of the evaluation through email.

The criteria were listed on a Criteria Weighting Grid and participants were asked to share or distribute 50 points across the five criteria with more points being allocated to the criteria they believed to be most important, and fewer points to those considered less important. Instructions were provided in the email to participants as well as contact details if they had any issues they wanted to discuss. All criteria weighting grids were received by 5th May 2014.

Once this information was collected it was possible to determine the overall group criteria weights by simply averaging the sum of the individual weights by the number of responses. The criteria weights are shown in Table A2.3.

Table A2.3: Average weights – Ayrshire & Arran

Effectiveness	Patient Experience	Practicality	Impact on Secondary Care	Sustainable
13	10	11	7	10

These weights show that the Advisory Group felt the criterion “Effectiveness” was the most important. The “Impact on Secondary Care” criterion was considered to be the least important criterion.

Step 6 – Score and rank the options

Once the services and criteria had been agreed the next stage of the process was to develop an evidence pack containing information and data regarding each of the services against each of the criteria. The purpose of this pack was to inform the participants and deepen their knowledge of the services in preparation for the scoring session which was completed later in the process.

Much of the detail regarding the actual delivery of the service had to come from those who provided the service, as they would be aware of the local issues and problems that they encounter. To capture this information the GPs involved in the process completed a series of standardised questionnaires which were developed by the Health Economics Team. This information was combined with published data such as admissions data, relevant literature, and other local and national reports, to make up the majority of the evidence pack. The evidence pack also included a perspective from Secondary Care since all the Enhanced Services under review have an impact on the workload and capacity of Secondary Care Services. Finally, the evidence pack also included some limited information collected directly from the patients. Questionnaires were distributed for three of the services under review in a selection of GP practices which asked patients to comment on the quality of the service they had received. This information was anonymous and did not include any personal or identifiable information. In addition at the beginning of the process clarification regarding ethical approval was sought from the West of Scotland Research Committee who confirmed that this project and the methodology undertaken was a service evaluation. Therefore, the pilot did not have to be evaluated by a research ethics committee. The local R&D department have also confirmed the project as a service evaluation and the local information governance department had commented on the content of the questionnaires.

The evidence pack was distributed to the participants on the 16th April 2014 along with information regarding the purpose of the pack and the date of the scoring session; which was scheduled for the 7th May 2014. On the 7th May each participant was asked to score each of the Locally Enhanced Services under review against the criteria from 0 to 10, with low scores indicating the service performed poorly against the criteria and high scores indicating it performed favourably. The participants were encouraged to consult their evidence packs when scoring as well as having plenty of opportunity to ask questions regarding the evidence or the services.

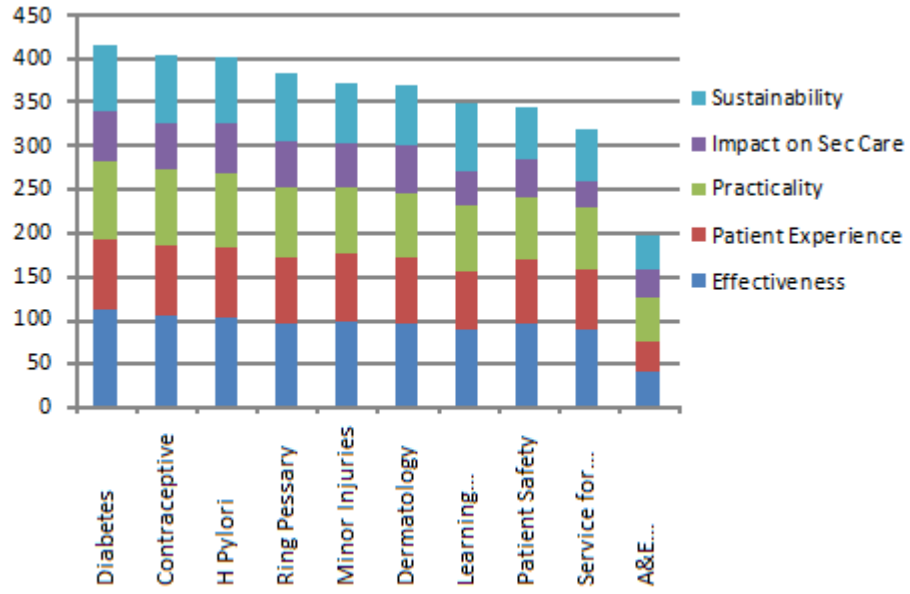
The scores were then collected from the participants and processed by the Health Economics Team. In order to determine the Weighted Benefit Score, the scores for each of the services are multiplied by their relevant criteria weight. These scores are then totalled and averaged across the whole group.

The Advisory Group Scored the 10 services against the five defined and weighted criteria using a combination of their own knowledge, skills and experience, and the evidence provided in the evidence pack. The average weighted benefit score for each of the services is detailed below in Table A2.4. Figure A2.2 displays the contribution of the various criteria to the total weighted benefit score.

Table A2.4: Weighted Benefit Scores by Service

Service	Weighted Benefit Score
Diabetes	415
Contraceptive Implants	405
H Pylori	402
Ring Pessary	383
Minor Injuries	372
Dermatology	370
Learning Disabilities	348
Medicines Reconciliation	344
Service for Carers	318
A&E Frequent Attendees	196

Figure A2.2: Weighted Benefit Score by Criteria



The Advisory Group gave the Diabetes service the largest weighted benefit score. Figure A2.2 indicates that the service performed strongly against all the criteria. The Management of Accident and Emergency Frequent Attendees service was given the lowest weighted benefit score. Figure A2.2 demonstrates that this service performed relatively poorly against all the criteria.

The information gathered to this point enabled the services under review to be ranked firstly by their Weighted Benefit Score and then secondly by their cost value ratio. The cost value ratio is simply calculated by taking the cost per patient and then dividing this by the weighted benefit score. The cost per patient is used in order to standardise for the differences in total costs between the services. In this case because the cost per patient for some services is relatively small compared to the benefit scores, the cost value ratio is multiplied by 100.

The ranking of the services by their cost-value ratio also enabled objectives 1 and 2 to be answered; identifying the services which provide most and least value for money. The exercise suggests that if we reallocated the resources from those services ranked at the bottom of the list to those at the top the overall benefit from the money spent on Locally Enhanced Services would increase. This in turn also provided an answer to objective 3 set out in earlier in the paper.

Table A2.5: Cost-value ratio and Prioritisation

Ranking	Service	Cost-Value Ratio
1	Medicines Reconciliation	0.47
2	Service for Carers	1.66
3	H Pylori	6.22
4	Diabetes	6.89
5	Contraceptive Implants	6.94
6	Learning Disabilities	12.69
7	Ring Pessary	13.04
8	Minor Injuries	14.33
9	Dermatology	29.77
10	A&E Frequent Attendees	95.46

The Medicines Reconciliation Locally Enhanced Service appears to be the most cost-effective of the 10 services under review. This service is then followed by the Service for Carers, H Pylori, Diabetes and then Contraceptive Implants. The Management of Accident and Emergency Frequent Attendees service appears to be the least cost-effective service with a cost-value ratio which is more than three times that of the next least cost-effective service, Dermatology. In terms of funding, priority should be given to those services towards the top of the table while funding may be released from those services at the bottom.

This result is in contrast to Table A2.4 which displays the weighted benefit scores only, and suggests that the Diabetes service is the highest ranked service. However this service falls to fourth place because the cost per patient is relatively high, and the value associated with this service is not large enough to compensate for this relatively large cost. The Diabetes service is therefore not considered a comparatively “cost effective” option: three other

services ranked higher in terms of cost-value ratio. The Medicine Reconciliation Service on the other hand is ranked in eighth position in terms of weighted benefit scores. However, as the cost per patient is exceptionally small, the value generated by the service is large in relation to its cost and the service is considered a “cost-effective” option.

Additional Analysis

In order to test the robustness of the results presented above, the weighted benefit scores and the cost value ratios were calculated for the three different sub-groups identified in the overall Advisory Group. The three different sub-groups were agreed as the GPs, the Members of the Public and the NHS Managers and the results are presented below.

Figure A2.3: Weighted Benefit Scores by Sub Group

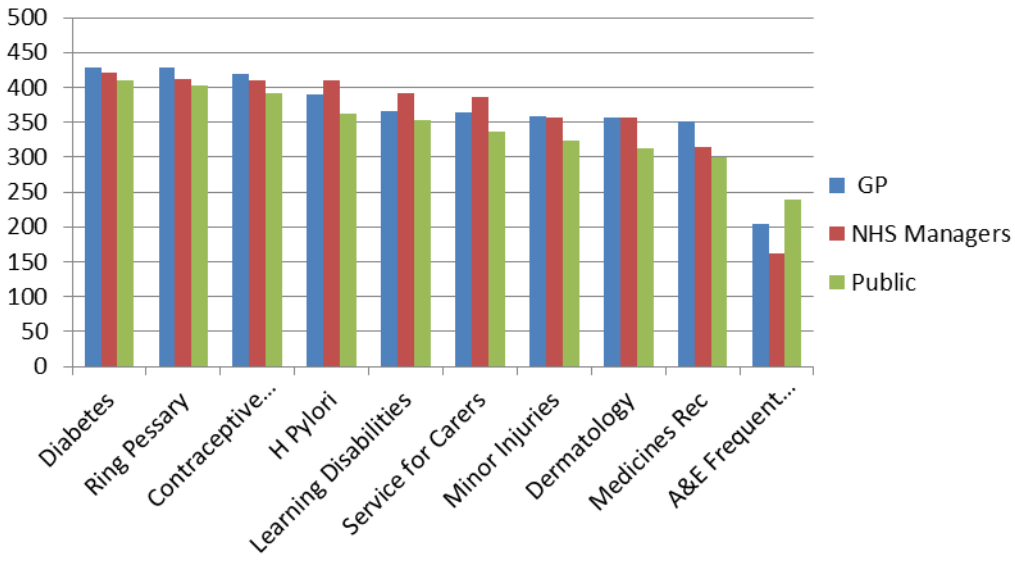


Table A2.6: GP Cost Value Ratio

Ranking	Service	Cost value ratio
1	Medicines Reconciliation	0.47
2	Service for Carers	1.46
3	H Pylori	6.42
4	Diabetes	6.66
5	Contraceptive Implants	6.71
6	Ring Pessary	11.65
7	Learning Disabilities	12.04
8	Minor Injuries	14.87
9	Dermatology	30.84
10	A&E Frequent Attendees	92.21

Table A2.7: Members of the Public Cost Value Ratio

Ranking	Service	Cost value ratio
1	Medicines Reconciliation	0.50
2	Service for Carers	1.77
3	H Pylori	6.20
4	Diabetes	6.99
5	Contraceptive Implants	7.15
6	Learning Disabilities	13.13
7	Ring Pessary	13.83
8	Minor Injuries	15.05
9	Dermatology	35.11
10	A&E Frequent Attendees	78.47

Table A2.8: NHS Managers Cost Value Ratio

Ranking	Service	Cost value ratio
1	Medicines Reconciliation	0.46
2	Service for Carers	1.68
3	H Pylori	6.10
4	Contraceptive Implants	6.86
5	Diabetes	6.93
6	Learning Disabilities	12.37
7	Ring Pessary	12.94
8	Minor Injuries	13.63
9	Dermatology	26.17
10	A&E Frequent Attendees	115.75

It is clear from the Weighted Benefit Scores by subgroup that all three subgroups placed the services in a similar order in relation to the value they are perceived to generate. The Diabetes service is ranked in first place in terms of weighted benefit scores by all three sub groups and the Management of Accident and Emergency Frequent Attendees is also consistently ranked in last place. This result also mirrors that of the overall Advisory Group presented earlier in this paper.

The ranking of the services by their cost value ratio for each sub group is identical although the actual cost value ratios are different. The Medicines Reconciliation service is consistently identified as the most cost-effective of the services under review and the Management of Accident and Emergency Frequent Attendees is identified as the least cost-effective. In addition, the ranking of the services by their cost-value ratio also mirrors the ranking of the services by their cost per patient. This finding again supports the suggestion that was presented in the overall Advisory Group analysis that the dominant factor in establishing the cost-value ratio appears to be the cost per patient.

Step 7 – Validate and review the process

The final PBMA session was scheduled for the 4th June 2014 and the results of the process were presented to the group. At this stage of the process the Advisory Panel had an opportunity to sense check the output of the process and discuss how to progress the results. Although no formal evaluation questionnaire was distributed it is possible to comment on some of the issues and concerns that were raised, as well as whether the group accepted the results.

The results of the process were presented to the Advisory Panel on the 4th June 2014 for general discussion and whether the panel believed that the current allocation of resources could be improved through using the results of the PBMA exercise. However, much of the

dialogue focused on the methodology and developing a deeper understanding of how the results were generated, as opposed to contemplating how to use the results. After rigorous discussion regarding methodology the Advisory Group appeared to accept that the process had been delivered robustly and that parameters such as costs and weighted benefits scores had been calculated appropriately. One member of the panel did comment on the fact that the Medicines Reconciliation service was identified as the most cost-effective option mainly because of the low cost per patient associated with that service. As a result it was suggested by the group that in terms of prioritisation, the weighted benefit scores may represent a better starting point for discussion as opposed to the cost-value ratios.

The Advisory Group also commented that due to the nature of the Enhanced Services, any reduction in funding would have some impact on Secondary Care services. For example, if as a result of the exercise the Dermatology and Minor Injury service were no longer funded Secondary Care services would have to treat these patients instead. Therefore, although the exercise could be classified as valid in that it followed the traditional steps of a PBMA; there was general feeling from the group that a further piece of work was needed which looked at the impact of the decisions. In addition, this "impact analysis" was considered extremely important as the significance of the decision that the PBMA exercise was attempting to address started to become clear to certain members of the group.

Lessons Learned

In order to deliver the PBMA pilot within NHS Ayrshire & Arran a significant amount of time, effort and resources were committed to the project particularly by the Health Economics Team. For example, the Health Economics Team were responsible for determining an area within the organisation in which to apply the technique, generating buy in, facilitating and organising meetings, liaising with the public representatives, performing the analysis including the programme budgeting, and presenting the results. In addition, the Primary Care Managers also had to dedicate time and resource to the project as the pilot was reviewing the allocation of resources of one of their budgets. Finally, the GPs made a significant contribution to the creation of the evidence packs and without their buy-in and support the pilot would have lacked the same level of robustness. Therefore, the value of the information generated through the pilot has to be weighed up against the substantial time commitment that those involved in the process had to provide.

The pilot did provide a large amount of information to support decision making regarding resource allocation. The output of a PBMA process may also be considered a starting point for discussion and the weighted benefits scores alone, the programme budgeting data, and the sensitivity analysis all contribute to the debate regarding where funds should or should not be allocated. However the main criticism of the information provided was the finding that the cost-value ratios were strongly correlated with the cost per patient. This implies that a key driver of the NHS Ayrshire & Arran PBMA pilot may be the relative per person costs of the Enhanced Services as opposed to their value. In addition the Advisory Panel also commented that the weighted benefit scores may provide a more appropriate starting point regarding resource allocation discussions as opposed to the cost-value ratios.

Positive aspects of the pilot include the application of a clear and transparent decision making process to inform resource allocation decisions. If changes to the current allocation of resources were made on the back of the pilot, the way in which this information had been gathered and how the decisions had been made could be easily and clearly demonstrated.

The Advisory Group was also made up of a range of stakeholders from a variety of backgrounds and it was encouraging that such a diverse group were fully engaged in decision making regarding resource allocation. The PBMA pilot could also be considered an organisational wide piece of work since it involved contributions from both Primary and Secondary Care, Finance colleagues and Public Health representatives. Currently within the NHS there has been an emphasis on "designing services around patients" and increasing public involvement in decision making. As part of the PBMA process the pilot identified the services which the Public representatives valued most highly and therefore the technique can provide a framework to incorporate the views of the public in decision making. Future PBMA projects could even go a step further and include either a Service Users Group or a Patient Representative Group within the overall Advisory Panel. In addition, the pilot also appeared to support the decision made by Primary Care that disinvesting in the Management of Accident and Emergency Frequent Attendees and reallocating the budget elsewhere would represent a cost-effective use of resources.

Finally feedback from the Primary Care Management team was extremely positive with one manager suggesting that it was the thought provoking exercise that they had hoped it would be. However they also acknowledged that the process could be improved by greater representation from Secondary Care. The Primary Care Management team have also indicated that they may consider using the technique to analyse Primary Care Spend in its entirety.

Appendix 3: Highland – Caithness

Appendix 3 outlines the process followed in Caithness focusing on Older People's services. The 7 steps outlined in Box 3.2 are used as a guide to document the process.

Step 1 – Determine the aim and scope of the priority setting exercise

The remit for the pilot sites was to focus on Older People's Services. From the initial meeting, and as this was a first iteration of PBMA, it was stated that the hospital resources in both areas could not be included in the process and the focus was to be on community services for older people.

Step 2 – Compile a programme budget, beginning with a map of current activity and expenditure

A large amount of work had already been done looking at the breakdown of activity and costs for Older People's Services during the work with the Integrated Resource Framework (IRF). This gave the breakdown for those 65 and over in Highland by hospital activity, community activity and family health services (GP, prescribing, dental and ophthalmic activity). However, more was required to bring the programme budget up to date and to include the social care data which is not routinely collected in the same way as the health data. This part of the process was progressed in parallel with the other stages (3-5).

Step 3 – Form advisory group

At the initial workshops, the formation of an Advisory Group was discussed.

The process was led by the Area Manager and all the members on each group had been asked to take part and informed of the process either by attendance at the workshops or invited by the area manager.

Prior to the start of the pilot exercises, Caithness had already begun a service re-design programme of work and had identified six different work streams. For each of these work streams, there was a reference group. It was decided that the PBMA process would fit around the on-going work, using the information already gathered, and that some members of the reference groups would make up the Advisory Group. In Caithness, there was an emphasis on public and community involvement in the group. Therefore, the Advisory Group was made up of staff from health, social care, third sector and members of the public. In total there were 22 core members of this group.

Step 4 – Determine locally relevant decision making criteria

A draft list of criteria was distributed to the group at the end of the session to encourage some initial thinking regarding potential issues for consideration.

The criteria should reflect the values and objectives of the organisation. The criteria were discussed and the wording changed to incorporate the objectives of the Partnership. Six criteria with definitions were agreed as shown in Box A3.1.

Box A3.1: Criteria definitions

Access

Facilitate innovative access to health and social care services and informal support, as close and safe as possible to where individuals are in need. Access by public transport and the local road network will be considered for those using the service and their families and/or carers. Access must be joined up, with the provision of easily accessible information in multiple formats and comprehensive advice for people, their families and carers to make informed decisions, promoting choice and control.

Equity

The level of care and/or support will ensure that people are treated with total fairness and transparency, promoting people's rights and supporting choice.

Improved outcomes

In re-designing our services we will aim to improve health and well-being of the population.

Effective practice

There will be continuity of care and/or treatment and/or support, designed to match the needs of the individuals and their carers i.e. right service, at the right time, in the right place, by the right provider. Care and support will be delivered to the highest possible standards of quality and safety, with the person being at the centre of all decisions. Risks will be assessed and managed.

Sustainable

Our plans must be flexible enough to adapt to changing circumstances for the individual and the community. The aim is to use effective partnerships to encourage and support personal responsibility for own health and well-being, prevention, supporting recovery, alongside longer term interventions including end of life care where required.

Culture and values

Services will be provided on an agreed basis so that people can remain in their own home or return home or can live in their community setting wherever appropriate.

Once the criteria had been agreed, the group were sent the weighting grid by email and asked to complete and return it. Box A3.2 shows the grid that was used to weight the criteria.

Box A3.2: Criteria weighting grid

Instructions: Name: _____

The criteria are weighted to show their relative importance compared to one another.

For each criterion agreed, we have 10 points to allocate. As we have 6 criteria we have 60 points to allocate across all of the criteria. These points can be allocated as you feel is appropriate across all the criteria but they must sum to 60.

Example: If we have 6 criteria, we have 60 points to allocate, and you thought each should receive an equal weight, then your table would look like this.

Criteria	**Weight**
Criterion 1	10
Criterion 2	10
Criterion 3	10
Criterion 4	10
Criterion 5	10
Criterion 6	10
Total	60

For the criteria that we have agreed on, what would be your point's allocation to each? To be clear, you can allocate more than 10 points to a criterion or none at all but the allocation must sum to 60.

Criteria weighting grid

Criteria	**Weight**
Access	
Equity	
Improved outcomes	
Effective practice	
Sustainable	
Culture and values	
Total	

12 weighted the criteria at this stage. However, following a further Advisory Group meeting, another meeting was held to include a wider group of the public and local councillors. In this meeting the process was outlined and the criteria were discussed. This group was then asked to weight the criteria. The weights were then combined over the two groups (Advisory Group and wider public group) and averaged. In total, 32 weighted the criteria.

The criteria weights are shown in Table A3.1.

Table A3.1: Average weights – Caithness

Access	Equity	Improved outcomes	Effective practice	Sustainable	Culture & values
9 (14%)	9 (14%)	11 (19%)	14 (24%)	9 (15%)	8 (13%)

'Effective Practice' was weighted the highest and was, therefore, seen as the most important compared to the other criteria. 'Improved Outcomes' was the second most important criterion and 'Culture and values' was the least important criterion.

Step 5 –Identify options

As mentioned, re-design work was on-going in Caithness using six work streams and these work streams were tasked with identifying options. Business cases were written by each reference group for each option identified and these then went to the Programme Board for the re-design work. Six options were then taken forward into the priority setting process. These included: (1) dementia-specific day care in Caithness, (2) appointment of a befriending coordinator to develop the existing service, (3) dementia link worker co-located with the Older Adults Mental Health Team, (4) day care home support workers for older adults who are unable to attend due to ill health, (5) four nurse-led palliative care assessment beds, (6) appointment of two support workers in Older Adult Community Mental Health Team. Prior to the start of the PBMA process, in 2012, the Harmsworth Unit at the Town and County Hospital, which served patients with cognitive and memory problems, was closed. This was due to the difficulty of retaining suitable qualified mental health nurses. Thus, the options taken forward were all options for investment. However, as this ward was closed in 2012, part of the funds had already been allocated for other services including a full time consultant psychiatrist. The remaining funds were used for the options in this process.

The completed business cases were sent out in advance of the scoring meeting to give those involved time to read each case. Prior to these being sent out, a decision was taken to fund option six (dementia support workers) by the management team. This was due to pressure from clinical staff to use the funds from the disinvestment in the Harmsworth Unit for mental health services. This option was not sent out to the group.

This resulted in the pot of money from closing the Harmsworth Ward being fully allocated. The group were told on the day that money would become available once some posts had been redeployed and therefore, the list of options could then begin to be funded. In addition, the day before the scoring event, option 4 was removed from the process by those responsible for it as they were undergoing restructuring and did not feel that this was the right time to continue to pursue funding. Therefore, four options were put forward for step 6: (1) dementia specific day care in Caithness, (2) appointment of a befriending coordinator to

develop the existing service, (3) dementia link worker co-located with the Older Adults Mental Health Team, and (5) designation of four nurse-led palliative care assessment beds.

Step 6 – Score and rank the options

At this meeting, the group were tasked with scoring each option out of ten against each criterion based on the evidence presented in the business cases. Box A3.3 shows the scoring grid used at this stage.

Box A3.3: Scoring grid

Instructions:

The options are scored against how well they perform against each criterion.

Each option should be given a score on a scale of 0 – 10 against each criterion, reflecting how well the proposed option performs against that criterion (where zero indicates 'no impact' with respect to the criterion and 10 indicates 'best possible impact').

Option scoring grid

Criteria	**Option 1 – Dementia Day Care**	**Option 2 - Befriending**	**Option 3 – Dementia Link Worker**	**Option 5 – Nurse-led Palliative Care**
Access				
Equity				
Improved outcomes				
Effective practice				
Sustainable				
Culture & values				

The process for scoring was explained and a representative for each business case was asked to do a short presentation and the group were able to ask questions or raise points for clarification. Those responsible for each option were asked to provide cost information as part of the business case to inform the analysis; however, this information was not included in the business cases sent out to the members of the Advisory Group. This prompted questions from participants not being able to score each option without knowing the cost, there was some uncertainty around not having this information. The reason for scoring without cost information is so that the scoring is done based solely on the evidence presented to them under each criterion without being biased by costs.

Once scored, the individual scores for each option were multiplied with the criteria weights and the scores averaged across the group. 41 people scored the options in total. The scores are shown in Table A3.2.

Option 5 (Nurse-led palliative care) was put forward with a zero cost attached as those leading this business case were going to request funding for training and other work from MacMillan Cancer Charity and, therefore, the proposal is purely to start the process of designating beds to nurse-led palliative care.

Table A3.2: Weighted benefit score for each option

Option	**Weighted Benefit Score (WBS)**
Option 1 – Dementia Day Care	471
Option 2 - Befriending	414
Option 3 – Dementia Link Worker	458
Option 5 – Nurse-led Palliative Care	464

Using the scores, the total cost of each option is divided by the weighted benefit score to give a cost per benefit point as shown in Table A3.3.

Table A3.3: Analysis of scores and costs

Option	Weighted Benefit Score (WBS)	Cost for 1 year	Cost per benefit point
Option 1 – Dementia Day Care	471	£60,000	£127
Option 2 -Befriending	414	£30,000	£72
Option 3 – Dementia Link Worker	458	£45,000	£98
Option 5 – Nurse-led Palliative Care	464	£0	£0

From this, the options were then ranked by their cost per benefit score, lowest to highest as shown in Table A3.4.

Table A3.4: Rankings of options by cost per benefit point

Ranking	Option	Weighted Benefit Score (WBS)	Cost for 1 year	Cost per benefit point
1	Option 5 – Nurse-led Palliative Care	464	£0	£0
2	Option 2 - Befriending	414	£30,000	£72
3	Option 3 – Dementia Link Worker	458	£45,000	£98
4	Option 1 – Dementia Day Care	471	£60,000	£127

The rankings were then shown to the group and they were asked if they agreed with the outcomes from the scoring process.

From Table A3.4, we can see that Option 5 was number one in the list. This is to be expected given the zero cost of this option. Although Option 2 had the lowest WBS, it was second in the rankings with a cost per benefit point of £72.

Once the rankings had been shown to the group, questions were asked about the funds available for funding the options. The actual amount of funds available had not been specified at the start and those involved wanted to know what could be funded from the list of options. There was a concern regarding the ranking of the options where those that cost the most will always be at the bottom of the list. However, the cost is divided by the WBS and, thus, the option that costs the most will not always be at the bottom depending on the scores allocated to each option. In general, if the options are shown to have equal benefit then it is reasonable to go with the lowest cost options.

Additional analysis

Further analysis on the scores for each option was conducted to look at variations in scoring amongst different groups in attendance and to see if different group ranked the options in a different way. Those in attendance were asked to sign in and put their names on the scoring grids. From the completed grids, 32 out of 41 gave their names and from this, we grouped them into four: Councillors, NHS, Public and Third Sector.

From this additional analysis, we can see that each group came out with the same rankings of the options (5, 2, 3, and 1), consistent with the overall group rankings. However, the WBS score differs between each group.

Table A3.5: Council group – scores and rankings

Ranking	Council (n=7)	Cost	WBS	Cost per benefit point
1	Option 5	£0	468	£0
2	Option 2	£30,000	459	£65
3	Option 3	£45,000	411	£110
4	Option 1	£60,000	493	£122

The council group weighted options 2 and 5 higher than the overall group and so the cost per benefit point was lower for these two options. In contrast, they had weighted option 3 lower giving a higher cost per benefit point.

Table A3.6: NHS group – scores and rankings

Ranking	NHS (n=9)	Cost	WBS	Cost per benefit point
1	Option 5	£0	436	£0
2	Option 2	£30,000	369	£81
3	Option 3	£45,000	497	£91
4	Option 1	£60,000	484	£124

The NHS group weighted option 2 lower than the overall group (369 compared with 414) which resulted in a higher cost per benefit point, close to that of option 3 which they had weighted higher. Option 3 for this group had the highest WBS compared with option 1 in the overall group.

Table A3.7: Public members – scores and rankings

Ranking	Public (n=7)	Cost	WBS	Cost per benefit point
1	Option 5	£0	493	£0
2	Option 2	£30,000	426	£70
3	Option 3	£45,000	464	£97
4	Option 1	£60,000	460	£131

In the public group, option 5 was given the highest WBS compared with option 1 in the overall group. The other options all scored higher than in the overall group except option 1.

Table A3.8: Third Sector – scores and rankings

Ranking	3rd Sector (n=9)	Cost	WBS	Cost per benefit point
1	Option 5	£0	471	£0
2	Option 2	£30,000	469	£64
3	Option 3	£45,000	479	£94
4	Option 1	£60,000	517	£116

In the Third Sector group, options 1, 2 and 3 were allocated a higher WBS than the overall group which lowered their cost per benefit point.

Step 7 – Validate and review the process

The rankings will be presented at the Strategic Commissioning Group for consideration.

Once the recommendations have been made and agreed, a period of consultation will be required with the wider community to allow for the recommendations to be scrutinised further. This will allow for the process to be challenged and help with the final decisions for the budget planning process.

Lessons learned

After the process had ended, we conducted interviews of those involved in the Caithness process and also those involved from JIT and Scottish Government. In total, 7 interviews were conducted. The main aspect of the interviews was to ask about the process itself, the issues and challenges encountered and suggestions for improvements for future use.

From the interviews with those involved in the Caithness process, a consistent theme was to do with the history of a previous redesign process. Those involved in this previous process had felt that their views were not taken on board during the process and that decisions were made regardless of their involvement. This resulted in uncertainty from those who had been involved in the previous redesign and were involved in the current redesign process. This was further fuelled by the PBMA process being started after the redesign process had begun and there was a lot of uncertainty as to why it was now being brought in when so much work had already been done. In addition, the decision to fund the dementia support worker was taken before the scoring part of the process and, again, this fuelled the uncertainty felt by those involved. It suggests that decisions will be made regardless of what involvement the public and staff members have in the decision making process.

There was a feeling of a missed opportunity with the Caithness pilot as the focus was on small scale options instead of the whole programme and how to make bigger changes. However, the process did give the Caithness redesign process a way forward and allowed them to move away from emotive responses to a better understanding for stakeholders of

how decisions are made and the types of choices that need to be made. It also required people to critically appraise the options that they had come up with themselves and look at them side by side and how they fit into the objectives of the organisation which is something which had not happened before.

Within the process itself there were some challenges highlighted in the Caithness pilot. The numbers in the Advisory Group in Caithness became big in number with more people joining as the process continued. This was positive for wider consultation but also challenging as people who had joined were unsure of the process that had already started and there was a need to spend time updating the progress made from previous meetings.

An issue which was voiced at the meetings was the lack of GP involvement in the process. An invitation had gone out to GPs but none could attend.

Another general issue is the difficulty of releasing resources where savings are shown, particularly from acute services. An important point is that although savings are in monetary terms this will not be a release of cash but a release of resources which can then be used elsewhere. Resources can be released more readily than cash in the system.

Overall, there was a general feeling that it was a positive piece of work to undertake in order to overcome issues with taking the Caithness redesign work forward and to change thinking of how decisions are made and resources are allocated within health and social care.

Appendix 4: Highland – Inverness

Appendix 4 outlines the process followed in Inverness focusing on Older People's Services, specifically on the configuration of the care at home service. The 7 steps outlined in Box 3.2 are used as a guide to document the process.

Step 1 – Determine the aim and scope of the priority setting exercise

The remit for the pilot sites was to focus on Older People's Services. From the initial meetings in both localities, and as this was a first iteration of PBMA, it was stated that the hospital resources in both areas could not be included in the process and the focus was to be on community services for older people.

Step 2 – Compile a programme budget, beginning with a map of current activity and expenditure

A large amount of work had already been done looking at the breakdown of activity and costs for Older People's Services during the work with the Integrated Resource Framework (IRF). This gave the breakdown for those 65 and over in Highland by hospital activity, community activity and family health services (GP, prescribing, dental and ophthalmic activity). However, more was required to bring the programme budget up to date and to include the social care data which are not routinely collected in the same way as the health data. This part of the process was progressed in parallel with the other stages (3-5).

Step 3 – Form advisory group

At the initial workshops, the formation of an Advisory Group was discussed.

Staff who had attended the workshop were asked if they were interested in joining the panel. This included health, social care and third sector staff. In total, there were 11 core members of the group.

Step 4 – Determine locally relevant decision making criteria

A draft list of criteria was distributed to the group at the end of the session to encourage some initial thinking regarding potential issues for consideration.

The criteria should reflect the values and objectives of the organisation. The criteria were discussed and the wording changed to incorporate the objectives of the Partnership. Six criteria with definitions were agreed as shown in Box A4.2.

Box A4.2: Criteria definitions

Access

Facilitate access to health and social care services and informal support, as close as possible to where individuals are in need. Access by public transport and the local road network should be considered for those using the service and their families and/or carers. Access should be joined up, with the provision of easily accessible information and comprehensive advice for people, their families and carers to make informed decisions, promoting choice and control.

Equity

The level of care and/or support should ensure that people are treated with equity and fairness, promoting people's rights and supporting choice.

Improved outcomes

Improved outcomes for people will be achieved as a result of any changes made compared to existing practice and available services and support.

Effective practice

Establish pathways of care and support wherever possible across the services involved. There should be continuity of care and/or treatment and/or support designed to match the needs of the individuals and their carers i.e. right service, at the right time and place, provided by the right provider. Care and support should be delivered to the highest possible standards of quality and safety, with the person being at the centre of all decisions. Risks will be assessed, managed and minimised.

Sustainable

Any changes made should be able to adapt to the changing needs of the population over the longer term. Focus on effective partnership working to encourage and support personal responsibility for own health and well-being, anticipatory care and prevention. The aim is to focus on supporting recovery, re-ablement and rehabilitation alongside longer term interventions, where required.

Culture and values

The culture should continue to change and evolve to define a health and social care system based on co-production that is enabling and empowering to people. The cultural focus should be to enable people to get back to or remain in their home or community environment and that all care and support is personalised.

The Advisory Group weighted the criteria in the same meeting that the criteria were agreed. In total 10 weighted the criteria in Inverness. The average weights are shown in Table A4.1.

Table A4.1: Average weights – Inverness

Access	Equity	Improved Outcomes	Effective Practice	Sustainable	Culture & Values
9 (15%)	8 (13.3%)	12 (20%)	11 (18.3%)	10 (16.67%)	10 (16.67%)

The average weights allocated to each criterion, show that 'Improved Outcomes' was weighted as the most important compared to the other criteria with 'Effective Practice' a close second. 'Sustainable' and 'Culture & Values' were weighted equally and so are equally important. 'Equity' and 'Access' were given the lowest weights.

Step 5 –Identify options

The Advisory Group were asked in advance of a meeting to think of areas for growth and areas for reduction. From these suggestions a long list of options was compiled which was then discussed at the meeting and a short list of options to take forward was agreed. This was achieved by smaller group discussions and the group thinking about the relevant objectives of the Partnership.

Four options were agreed in Inverness: (1) combining mental health day services in Inverness, (2) setting up a virtual support network for the community, (3) providing a Care at Home night service and, (4) moving to a single site for health and social care day services. A template business case was provided to give an idea of what type of information would be required for each option. This was set out so that each criterion had a separate section. Evidence as to how each option met the criterion was also included. The template is shown in Appendix 6.

Business cases were started for each option and a Public Health Business Manager supported this part of the process and was able to search for evidence for the options. However, in evaluating these options, the group realised that the current budget position and initial planning for the 2014/15 budget suggested that there was a need for action. The team moved away from their initial ideas for investment/disinvestment to look towards a challenge that might produce material results. The focus moved from small scale tests of change around day care and mental health, to look at an extensive reform of Care at Home in South and Mid Highland. This had previously been seen as too big an issue to tackle all at once.

Focussing on Care at Home allowed the team to address a number of issues. In- house provision of Care at Home had received poor quality ratings. Whilst the work to address this had been successful in elevating inspection ratings, it had also exposed significant problems in the structure and efficiency of the service.

In addition, care provision in Highland was becoming increasingly stressed. The Care Home provider base was experiencing numerous suspensions of admissions (and some closures) based on quality issues to the extent that up to 63% of all available beds were inaccessible, whilst the Care at Home capacity was being challenged by difficulties recruiting staff and some provider instability. As a result, the delayed hospital discharge position was quickly deteriorating.

The group went back to the initial five questions outlined in Box 3.1 and developed the following for Care at Home.

1. What resources are available in total?

   The budget for Care at Home was £10.96m.

2. In what ways are these resources currently spent?

   The split of spend was £6.46m 'in-house' and £4.5m Independent Sector/Self Directed Support.

3. What are the main candidates for more resources and what would be their effectiveness and cost?

   The main candidate for more resource was more Care at Home hours overall. However, the achievement of more hours would require both the purchase of more hours, and the establishment of a sustainable approach to funding these hours at a level that supported the provider base and enabled sustainable recruitment. The UK Home Care Association suggested that a fair price for an hour of delivered Care at Home would be £18.59, allowing payment of the Living Wage. This would represent an increase of £2.62 per hour over and above the current rate of £15.97 per hour.

4. Are there any areas of care which could be provided to the same level of effectiveness but with less resources, so releasing those resources to fund candidates from (3)?

   The in-house service was heavily reliant on overtime to cover sickness and ineffective scheduling. This suggested that improved management would allow the same provision for less resource.

5. Are there areas of care which, despite being effective, should have less resources because a proposal from 3. is more effective (for £s spent)?

   The provision of Care at Home via the third and independent sectors is comparatively less expensive. At the time that the initiative commenced, NHS Highland was purchasing Care at Home at £15.97 per hour, whilst the in-house service relied on a cost of approximately £29 per hour. In addition, the independent sector hours were also delivered at a higher quality grading (Grade 2 and above) and with greater flexibility.

To take this forward, a Development Group was set up to examine ways in which Care at Home provision could expand in capacity and quality to meet increasing need. The membership consisted of: statutory sector purchaser/provider (Chair), statutory contracts team, statutory operational management, independent sector providers and third sector.

Through February and March 2014, the Area Manager for South & Mid Highland reflected on the 5 PBMA questions with the Development Group, suggesting that the process indicated that Care at Home could achieve a greater capacity within a fixed budget envelope. The question was what would need to change to allow this.
The group then identified changes that needed to be made, notably:

- Changes to the allocation of care packages, i.e. no longer prioritising allocation to the in-house service.
- A suspension on in-house recruitment and that the NHS would support funding of additional staff to recruit carers.

- The development of a “zoning” approach to enable collaboration across sectors to pass packages of care. This would aid recruitment and reduce the logistic costs of provision
- The development of a “fair” tariff for a standard hour of delivered Care at Home. An initial move was made to improve the position by implementing a £0.75 per hour increase to provide a “Living Wage”, something that has not happened before in Scotland. This would be a temporary point with a view to establish a genuine “fair price”.

As a result there has been an increase in the quality of those providing Care at Home services (Grade 3 and above) and a shift in activity from the in-house service to the independent sector. The graphs below highlight this shift by showing the change over time of the number of clients by provider type in Highland.

Figure A4.1: Client numbers by provider type, March 2013 to March 2015

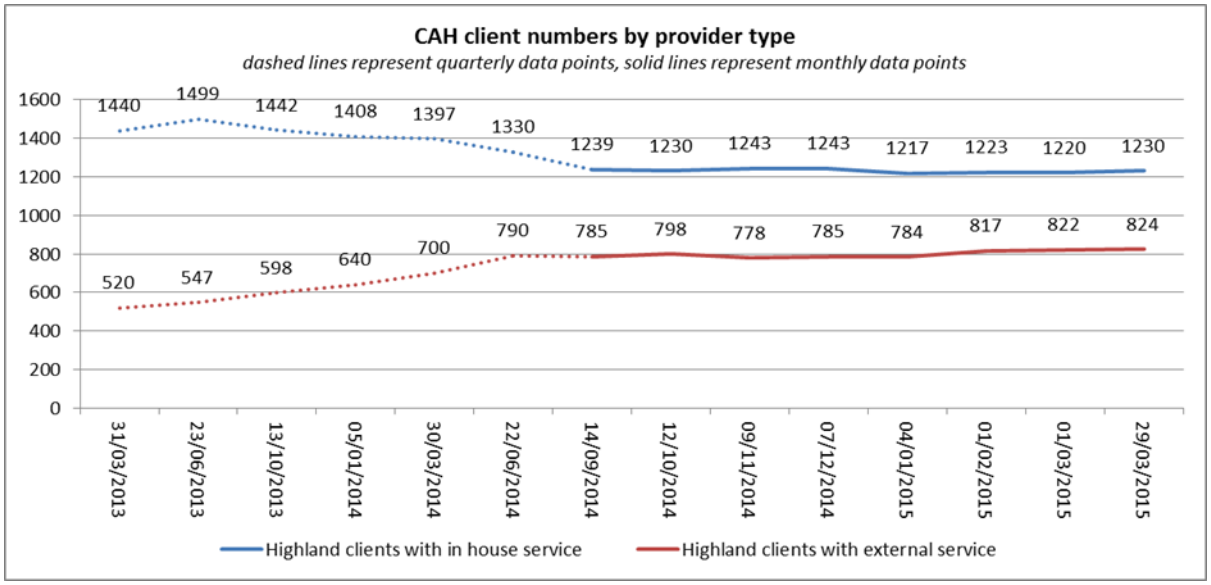


Figure A4.1 highlights the increasing and steady change of the numbers of clients receiving care from an independent sector provider and as a result a decrease in the use of the in-house service.

Figure A4.2 highlights the change by area, comparing South & Mid Highland with North & West Highland.

Figure A4.2: Client numbers by provider and by area

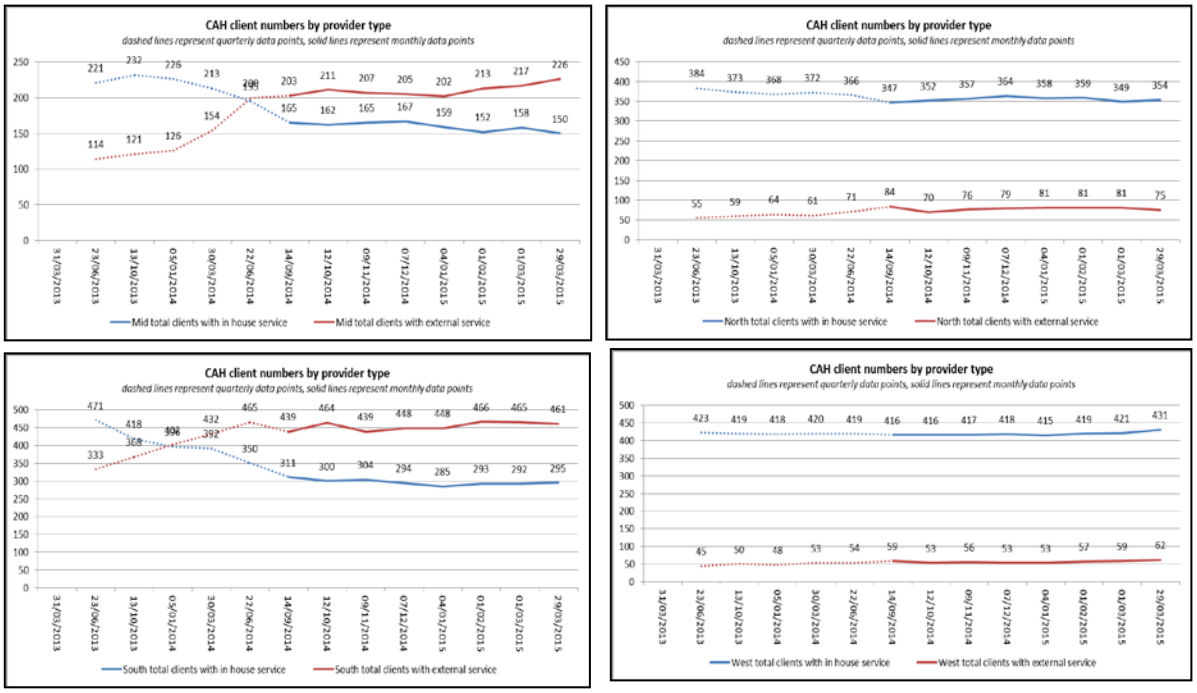
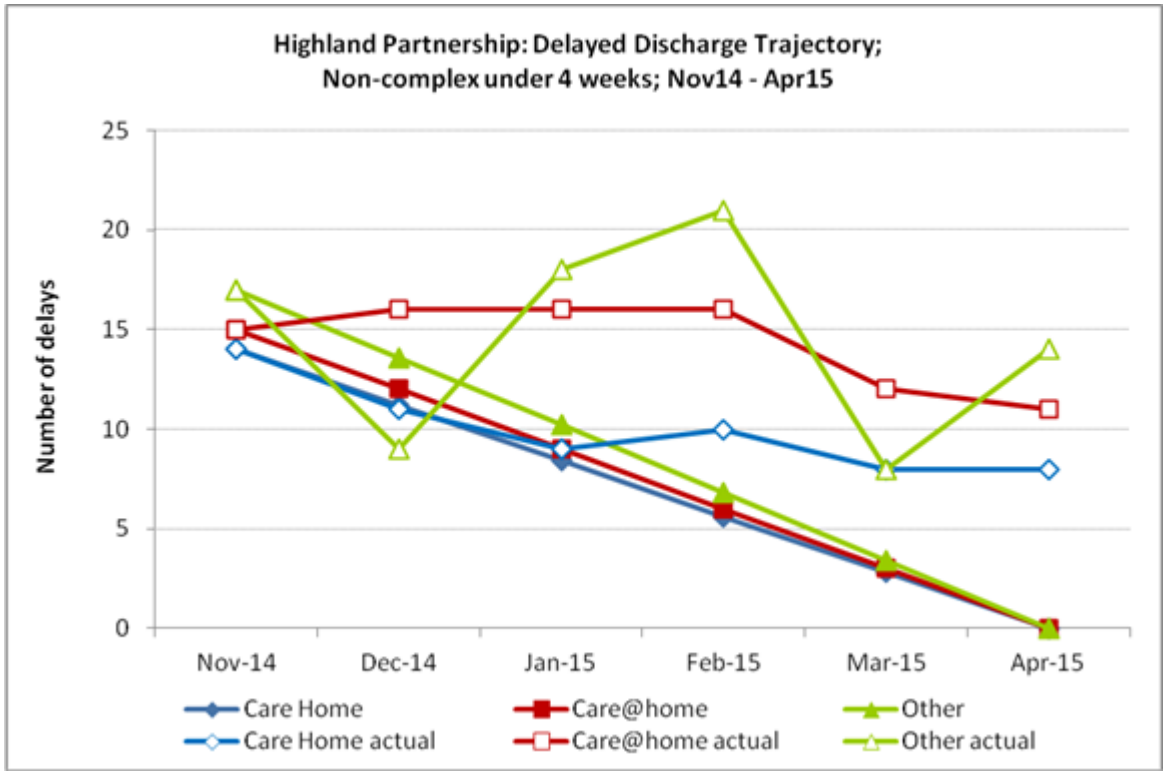


Figure 4.2 shows the difference in change in South & Mid Highland (graphs on left) with more clients having care provided by the independent sector compared with the majority of clients in North & West Highland (graphs on right) with care provided by the in-house service.

Figure A4.3 shows the number of delayed discharges per month for care home and care at home. This shows that there has been a decline overall but less than predicted, although it is potentially too early to see the full impact of the change.

Figure A4.3: Delayed discharges in Highland, predicted and actual



At the end of 2014/15 the staff numbers for the in-house service were 210.99 Whole Time Equivalents (WTE). As a result of the planned shift from the in-house service to the independent sector and self-directed support, the in-house service reduced by 12 WTE and £288k of budget was reallocated from in-house to independent sector and self-directed support. This represented approximately a 4.5% shift in the budget.

In addition, after considerable analysis, the United Kingdom Home Care Association recommendations[7] were adopted and a rate of £18.59 set with conditions developed by the independent sector. The Tariff was adopted on May 1st 2015. This equates to a pressure of £767k. This is to be financed by an accelerated reduction in the in-house service supported by non-recurrent provision of £500k to support double running costs in 2015/16. In order to deliver this change, 1,200 hours per week of existing activity needs to move from in-house service to independent sector providers. This equates to circa 35 WTE of in-house staff. Any new activity sits outwith this model but it is anticipated that the independent sector will pick this additional activity up rather than the in-house service as this will delay the transition process.

Lessons learned

The PBMA process provided the catalyst for the change as it provided a platform for comparing different options. However, as only one option was chosen to be taken forward the process itself was not fully carried out, but the discussions it initiated did result in a material change of how Care at Home services are provided in South & Mid Highland, in an area of critical core business rather than marginal services. The PBMA approach appears to

[7] The Homecare Deficit: A report on the funding of older people's homecare across the United Kingdom, version 1, March 2015.
http://www.ukhca.co.uk/pdfs/ukhca_the_homecare_deficit_201502_web_version_in_spreads.pdf

have been influential in providing a structured argument for the changes outlined in Inverness, which in turn supported the group tasked with taking the work forward in making a step change in service provision. The structure of the process was important in order to relay the changes being made to the staff involved.

Leadership was essential in order to take the process forward and achieving the end result. Where the leadership of the Care at Home group had been "traditional" e.g. what uplift can we afford, it became transformational under the Area Manager and the Care at Home Manager who saw possibilities unlocked via the initial PBMA process. Importantly the above managers had control over their resources and, thus, those involved in the PBMA process were able to direct change.

The group managing the process had a direct line into governance, therefore, the Adult Services Commissioning Group was able to accept and endorse the recommendations which were then approved via the Health and Social Care Committee and implemented directly by the managers involved in the PBMA process.

Appendix 5: Perth and Kinross

The work in Perth and Kinross partnership focused on using data to map the programme budget and to answer the first two PBMA questions about resources (Box 3.1):

1. What resources are available in total?
2. In what ways are these resources currently spent?

To support partnerships in developing their locality and strategic plans, The Scottish Government has commissioned the NHS National Services Scotland (NSS) Information Services Division (ISD) to work with Health Boards, Local Authorities, the new integrated partnerships, and others to develop a longitudinal health and social care dataset, which links health and social care data at individual patient/service user level. This work is known as the Health and Social Care Data Integration and Intelligence Platform (HSCDIIP).[8]

This project is a development of longstanding work on the Integrated Resources Framework (IRF), which mapped health and social care resources to localities and provided partnerships with an understanding of their allocation and utilisation of total health and social care resources across local populations, and of their interaction.

Perth and Kinross Partnership were an early adopter of linked individual level health and social care datasets and have been able to link longitudinal health and social care activity and cost data at individual service user level for a number of years, enabling more comprehensive and detailed analyses, at individual or aggregated level (e.g. by care group or geography or other grouping), than has previously been possible. These data were used to map the programme budget so as to understand current resource patterns and this paper summarises the results of the analysis and presents recommendations for other partnerships.

[8] http://www.isdscotland.org/Health-Topics/Health-and-Social-Community-Care/Health-and-Social-Care-Integration/

Mapping the Health and Social Care Programme Budget

The following charts give an illustration of the potential to use the linked individual level dataset to understand how health and social care resources are allocated and utilised by Partnerships. The charts use 2011/12 data.

Figure A5.1: Sample of demographic data from joined IRF dataset

IRF Number	COHORT FLAG	Ageband for Older people pivots	5 year age bands	10 year age bands	Datazone	P&K/ Not P&K	Locality * 5	Settlement	Ward	Locality* 4	GP Practice	Deprivation Quintile (1=most deprived; 5=least deprived)
41606	NON ADP	65 to 74	65-69	60 - 69	S01005045	P&K	Perth	Perth	Perth City South	South Perth	13975	5
59568	NON ADP	under 65	35-39	30 - 39	S01005014	P&K	Perth	Perth	Perth City South	South Perth	14342	1
94190	NON ADP	75 and over	80-84	80+	S01005061	P&K	Perth	Perth	Perth City Centre	North Perth	14037	1
30991	ADP	65 to 74	65-69	60 - 69	S01005025	P&K	Strathearn	Comrie	Strathearn	South	10017	2
118499	NON ADP	75 and over	80-84	80+	S01005128	P&K	Strathmore	Blairgowrie	Blairgowrie and Glens	North	10407	4
25598	NON ADP	75 and over	85+	80+	S01004979	P&K	Kinross	Kinross	Kinross-shire	South	13481	5
2827	NON ADP	under 65	45-49	40 - 49	S01005015	P&K	Strathearn	Crieff	Strathearn	South	10835	3
43028	NON ADP	under 65	20-24	20 - 29	S01005100	P&K	NW Perth	Luncarty	Strathtay	North	99961	5

Each row in Figure A5.1 above is a unique person, and there are approximately 120,000 people in this dataset. This section of information is essential to the filtering of the dataset, to start looking for correlations, shapes and patterns in the data.

For example, filtering on the GP Practice column enables us to consider only the patients from one GP practice or a cluster of GP practices. Filtering next on age group will restrict the information for those GP Practice patients to a specific age group.

One of the key filters is the 'Locality*4' column that enables us to select one of our localities and analyse all the information we have concerning consumption, GP behaviour, unplanned admissions and Care Home usage etc. and from that build profiles of our localities for developing the Strategic Plan.

After the locality filter, one of the most critical filters is the SIMD deprivation quintiles where we can start comparing the consumption of Health and Social Care resources by quintile 1 (most deprived cohorts) against, for example, the consumption of quintile 5 (least deprived cohorts). Essentially it is in these comparisons we start to see gaps in delivery and opportunities to invest and disinvest in service areas and target populations.

Figure A5.2 looks at another selection of individuals and their Social Care consumption.

Figure A5.2: Sample social care data from joined IRF dataset

Total Social Care Net	Total Heath Net	Total Health & Social Care Net	Net Hcc Access Team	total Adult Care Management	Net Comm Alarm Team	Net Hcc Ot Team	Net Hcc Reviewing Team	Net Out Of Hours Service	Net care Home Private WEEKS	Net Care Home LA WEEKS	Net CAH Private Provider Annual Hours	Net PKC Care at Home ANNUAL HOURS
£131,165.66	£960	£132,125		£69							£8,550	£122,547
£101,419.02	£14,927	£116,346	£477	£1,778	£182	£3,502	£8,101	£2,072				£85,230
£93,233.92	£2,508	£95,742	£136	£1,313	£182		£206				£3,281	£88,116
£84,728.43	£13,155	£97,884	£68	£5,113	£26,511			£188			£1,327	£51,514
£70,492.68	£2,006	£72,499		£561								£69,816
£69,158.89	£3,061	£72,220			£1,090							£68,069

Hcc = Health Care Costs, CAH = Care at Home, PKC = Perth and Kinross Council

Unlike the demographic data in Figure A5.1 which is used to filter the dataset, this section focuses on the costs and activity of the filtered data and allows for sorting of the data by highest to lowest cost/consumption in order to understand who are the high/low consuming cohorts. The “Total Social Care”, “Total Health” and “Total Health and Social Care” costs allow generation of locality consumption budgets and to monitor our “Shifting the Balance of Care” strategies.

Figure A5.3 is a continuation of the same unique people from Figure A5.1 but here demonstrates an example of their consumption of Health Care resources.

Figure A5.3: Sample hospital data from joined IRF dataset

Acute Non Elective Inpatient Episodes (SMR01)	Acute Non Elective Inpatient Net	Acute Non Elective Inpatient Days	Acute Non Elective Inpatient Admissions	Acute Elective Inpatient Episodes (SMR01)	Acute Elective Inpatient Net (SMR01)	Acute Elective Inpatient LOS	Acute Day Case Net	Acute Day Case Episodes	A & E Attendance	A & E Net
6	£12,805	29	5			0				
1	£1,602	5	1			0			1	£103
3	£5,829	17	3	1	£6,328	5			2	£206
1	£1,698	7	1			0				
2	£2,781	12	1			0				
3	£6,431	15	2			0				
7	£64,687	135	5			0			2	£206
1	£2,461	8	1			0				
5	£29,063	67	2	1	£741	2			1	£103
1	£1,030	3	1			0			1	£103
4	£8,977	25	2			0				
2	£1,069	1	2	17	£64,697	66	£382	1		

Similar to Figure A5.2, this section is to enable the costing and ordering of the filtered data to understand the scale and cost of service use (for example, unplanned admissions (Acute Non Elective Inpatients) or planned admissions (acute elective inpatients)). Other information in this section covers e.g. prescribing costs and number of items prescribed etc.

Figure A5.4 below demonstrates the importance of using nationally available datasets from the General Register Office Scotland for population predictions. Using this data will enable accurate forecasting of future costs/populations/activity, for example, the development of future budgets or identifying future service delivery pressures. This information also allows the demonstration of future pressures of the “do-nothing” scenario.

Figure A5.4: Standardise the use of population data

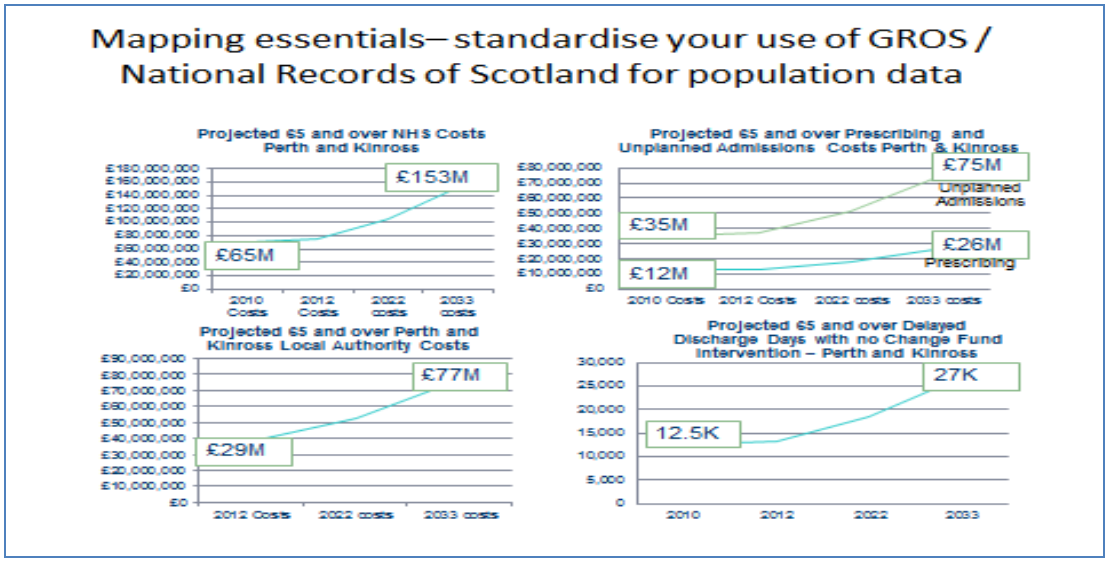


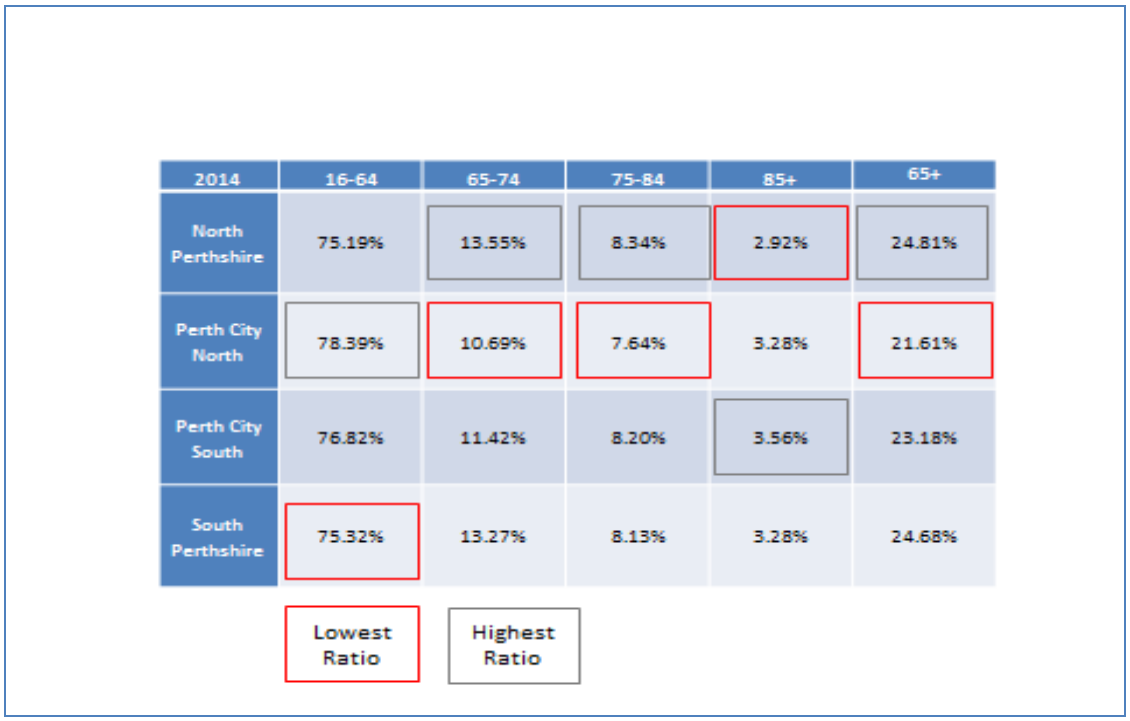
Figure A5.5 is an example of locality analysis to understand in which localities consumption is happening and how it compares with the consumption of other localities; these data need to be used alongside per capita resource use to inform investment/disinvestment opportunities.

Figure A5.5: Consumption allocation

	Total Consumption	Unplanned Admissions	Care homes	Care at Home
North Perthshire	£19,736,351	60.28%	24.86%	14.76%
South Perthshire	£16,031,388	63.88%	20.61%	15.52%
North Perth City	£8,322,591	51.93%	33.85%	14.23%
South Perth City	£8,873,241	54.15%	30.29%	15.56%
All 65+	£54,625,091	57.37%	28.00%	14.63%

Figure A5.6 simply allows identification of population pressure points for different age groups to inform strategic planning activities or, may help explain variation in consumption costs across localities.

Figure A5.6: Population distribution of Perth & Kinross localities



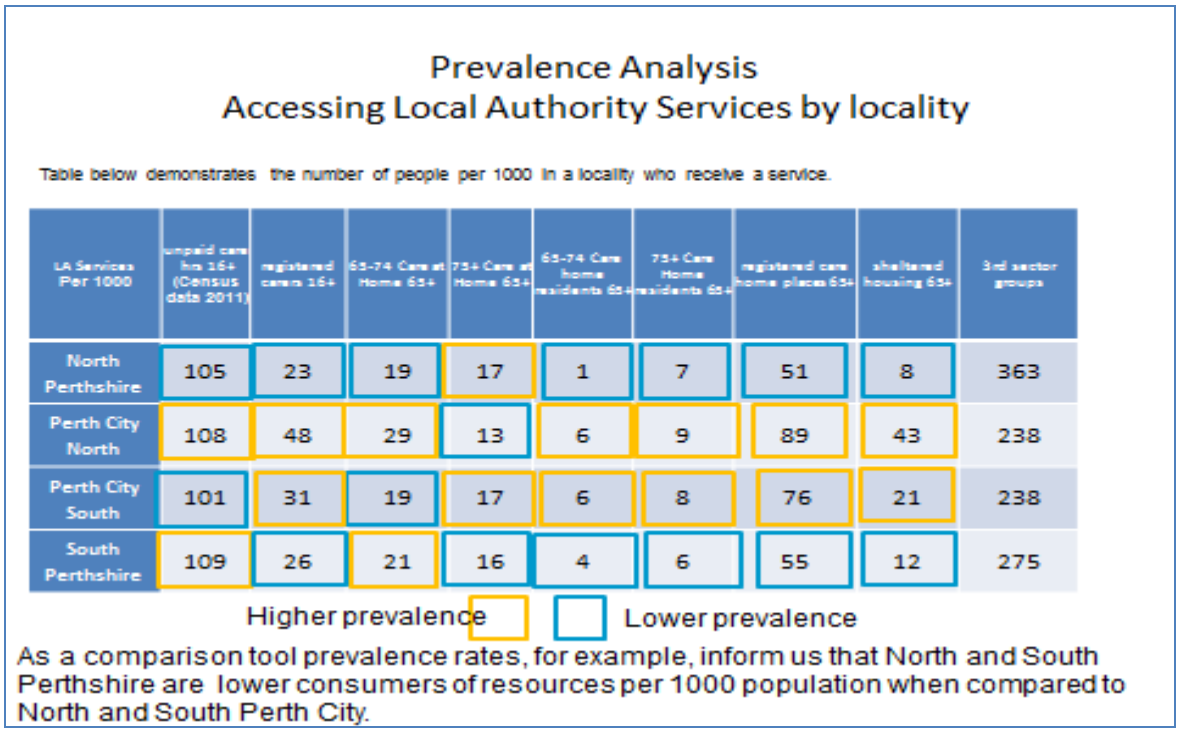
2014	16-64	65-74	75-84	85+	65+
North Perthshire	75.19%	13.55%	8.34%	2.92%	24.81%
Perth City North	78.39%	10.69%	7.64%	3.28%	21.61%
Perth City South	76.82%	11.42%	8.20%	3.56%	23.18%
South Perthshire	75.32%	13.27%	8.13%	3.28%	24.68%

Lowest Ratio

Highest Ratio

Figure A5.7 demonstrates how the use of data can be used to develop simple analysis. By looking at the prevalence rates for different services and different age groups it is possible to build a picture of how the different localities access and consume services. The use of prevalence rates removes the problem that large concentrated populations can cause when looking at data. Large populations consume more resources and access services in greater volumes than smaller populations. It is only when these are converted to access and usage rates that it is possible to observe where over or under consumption is actually occurring. The example above demonstrates how the City based localities of North and South Perth City access the sample services at greater rates than in the rural based localities, North and South Perthshire.

Figure A5.7: Prevalence analysis -accessing Local Authority Services by locality



Prevalence Analysis
Accessing Local Authority Services by locality

Table below demonstrates the number of people per 1000 in a locality who receive a service.

LA Services Per 1000	unpaid care hrs 16+ (Census data 2011)	registered carers 16+	65-74 Care at Home 65+	75+ Care at Home 65+	65-74 Care home residents 65+	75+ Care Home residents 65+	registered care home places 65+	sheltered housing 65+	3rd sector groups
North Perthshire	105	23	19	17	1	7	51	8	363
Perth City North	108	48	29	13	6	9	89	43	238
Perth City South	101	31	19	17	6	8	76	21	238
South Perthshire	109	26	21	16	4	6	55	12	275

Higher prevalence Lower prevalence

As a comparison tool prevalence rates, for example, inform us that North and South Perthshire are lower consumers of resources per 1000 population when compared to North and South Perth City.

Figure A5.8, the 98% indicator, is a good example of how a well-balanced Health and Social Care Partnership supports it's over 65 populations to live safely at home. Using the linked Health and Social Care dataset enables calculation of the numbers in Hospital environments and in Care Homes and of those living at home (albeit with some receiving social care support). This example requires the usage of the correct population sizes as shown in Figure A5.4.

Figure A5.8: The 98% indicator - Proportion people 65+ living at home

	Institutional Environments		Total Living at Home	Community Environments	
Locality	% 65+ in hospital	% 65+ in Care Homes		% 65+ receiving >10.5 hrs Homecare	% 65+ remainder living at Home
North Perthshire	1.07%	1.35%	97.59%	1.04%	96.54%
Perth City North	1.09%	2.92%	95.99%	1.05%	94.94%
Perth City South	1.06%	2.41%	96.53%	1.04%	95.49%
South Perthshire	1.05%	1.08%	97.87%	1.02%	96.85%

Simple analysis of Figure A5.8 would lead to the question of why the city based localities proportionally have a smaller proportion of their population living at home (driven by greater

use of Care Homes) when compared to rural localities; this variation perhaps demonstrates that proximity to services causes greater consumption of these same services.

Figure A5.9: Trend in unplanned admissions by age

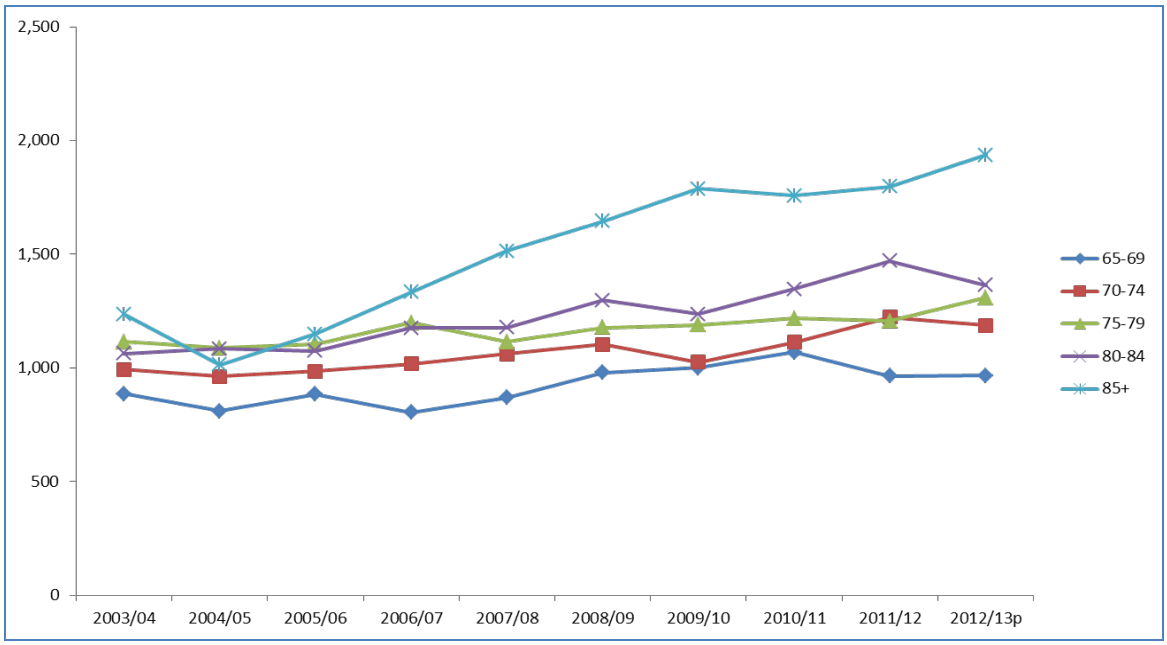


Figure A5.9 shows the trend in unplanned admissions for the over 65 population since 2003/4. This graph demonstrates the need to "zoom out" of data to observe it over longer time periods. Only then can it possible to be clear about the overall trend and behaviour of populations and not be misled by trends that appear over short term periods.

It is essential to understand these demographics and to be clear about the age of the cohorts who consume services. In Perth and Kinross the average age of a person receiving personal care at home is 82. This is key knowledge in understanding the impact of population pressures on levels and patterns of service demand.

Figure A5.10 is a good example of corroborative data when used in conjunction with Figure A5.9. This graph shows a constant increase in the percentage of inpatients referred to hospital based social workers and in turn may also reflect an increased frailty of our older population. This contributes to the increasing pressures that are faced by Perth and Kinross Council in meeting the demands for Care at Home and Care Home services and managing delayed discharge volumes.

Figure A5.10: Percent of 65+ emergency admissions who are referred after in-patient treatment for a Local Authority Service and enter a Delayed Discharge situation - April 2012 to March 2013

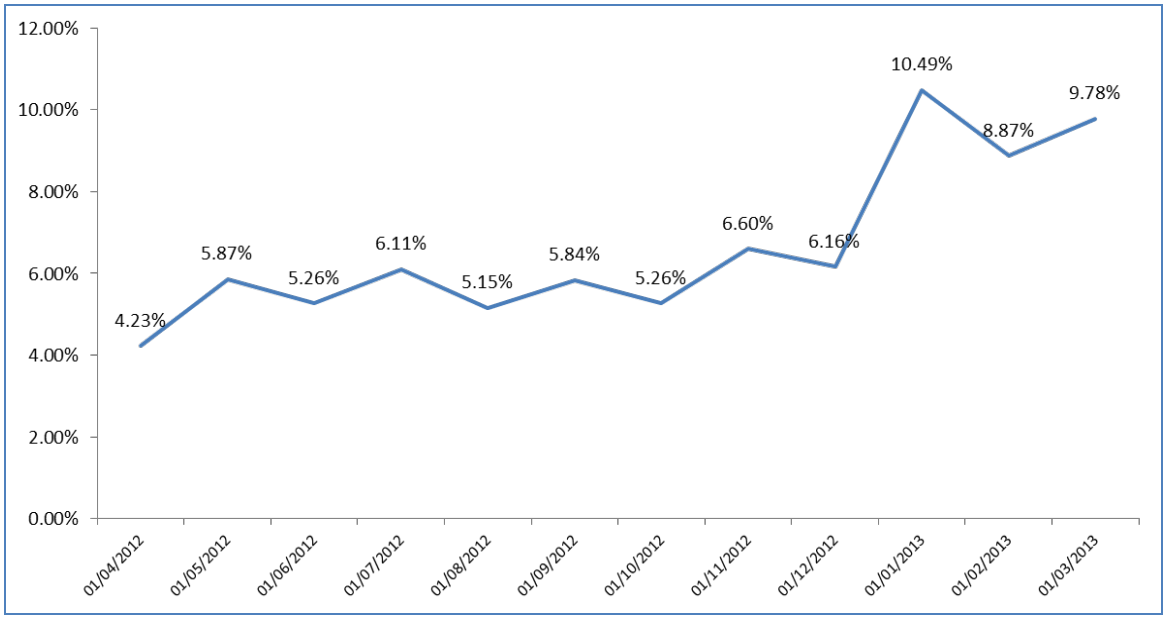
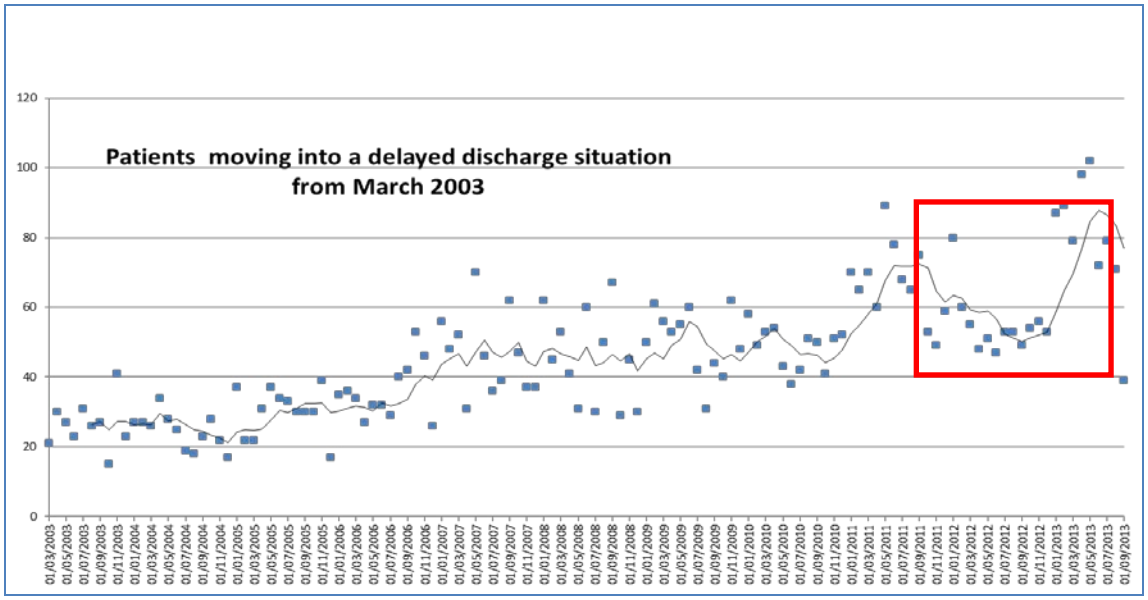


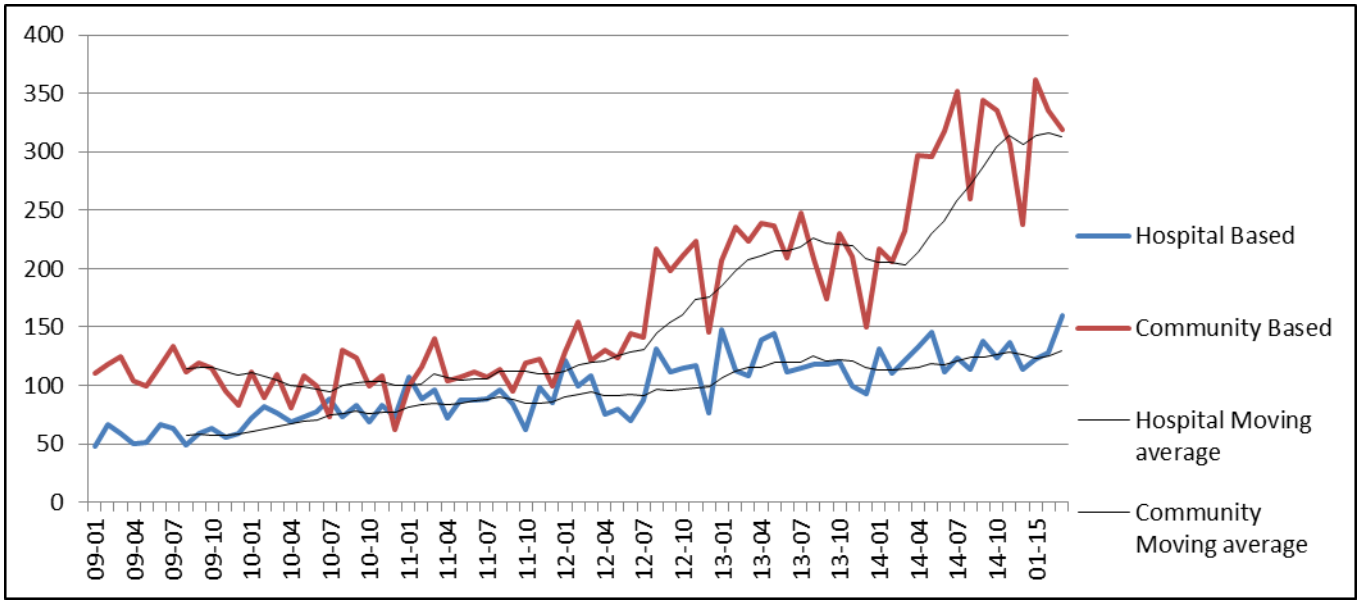
Figure A5.11 demonstrates the importance of considering data over the longer timeframe when analysing services and activity. Analysis of the effectiveness of Change Fund interventions aimed at reducing delayed discharge, initially monitored performance by considering only the period in the red box i.e. start of the Change Fund, and the behaviours and successes within that period.

Figure A5.11: Perth & Kinross delayed discharges March 2003-March 2013



This was unable to explain the upward trend in delayed discharges from around March 2013, and it became clearer after looking at the long term trend from 2003 that there was a strong continuous upward trend that the Change Fund "reducing delayed discharge" activities were trying to influence, and that must be taken into account in the analysis.

Figure A5.12: Social Care Assessment pressures



	2009	2010	2011	2012	2013	2014	2015 to date	2015 EOY estimate
Hospital	691	918	1052	1191	1428	1503	494	1606
Hospital Assessments Per Week	13	18	20	23	27	29	31	31
Community	1329	1196	1335	1940	2572	3402	1242	4037
Community Assessments Per Week	26	23	26	37	49	65	73	78

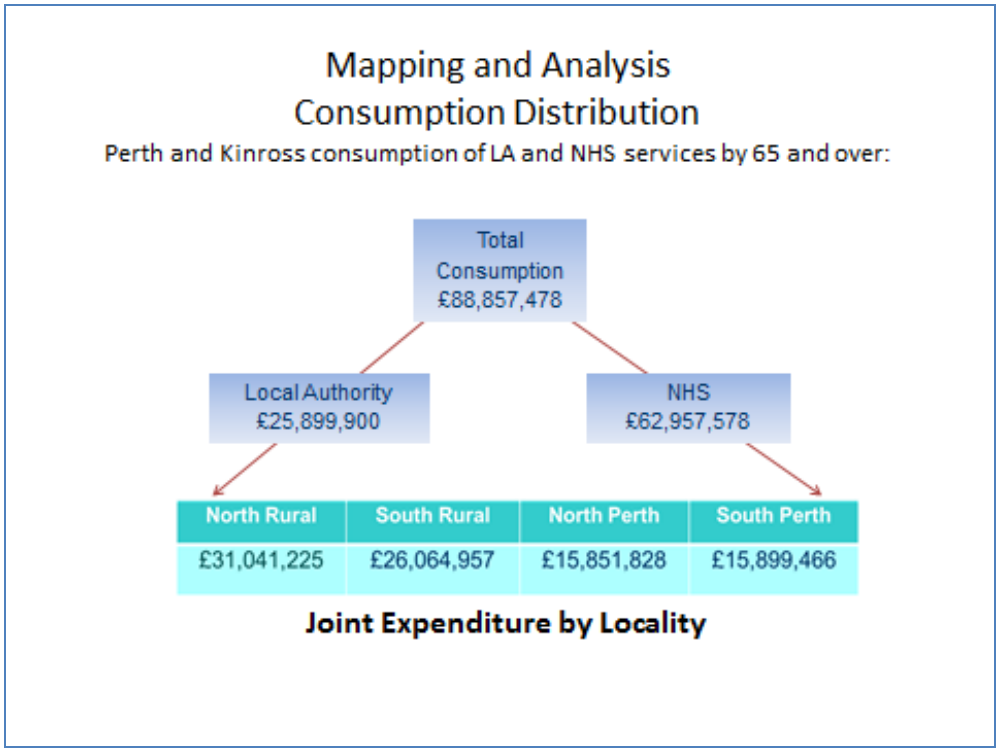
Figure A5.12 is an example of the benefit of not only extending the timeframe of analysis lines but also widening the cohort under scrutiny. By extending the timelines from 2012 – 2014 to 2009 – 2014 it enabled a clearer understanding of the sustained upward trend in assessments carried out in hospital environments.

Of more interest was in widening the cohort to include community based assessments which showed an even greater increase in assessments being carried out in the community and therefore more pressure from communities when compared to hospital.

Note that clients will have more than one assessment in any year so this is not a count of increasing clients but of increasing Social Care workload.

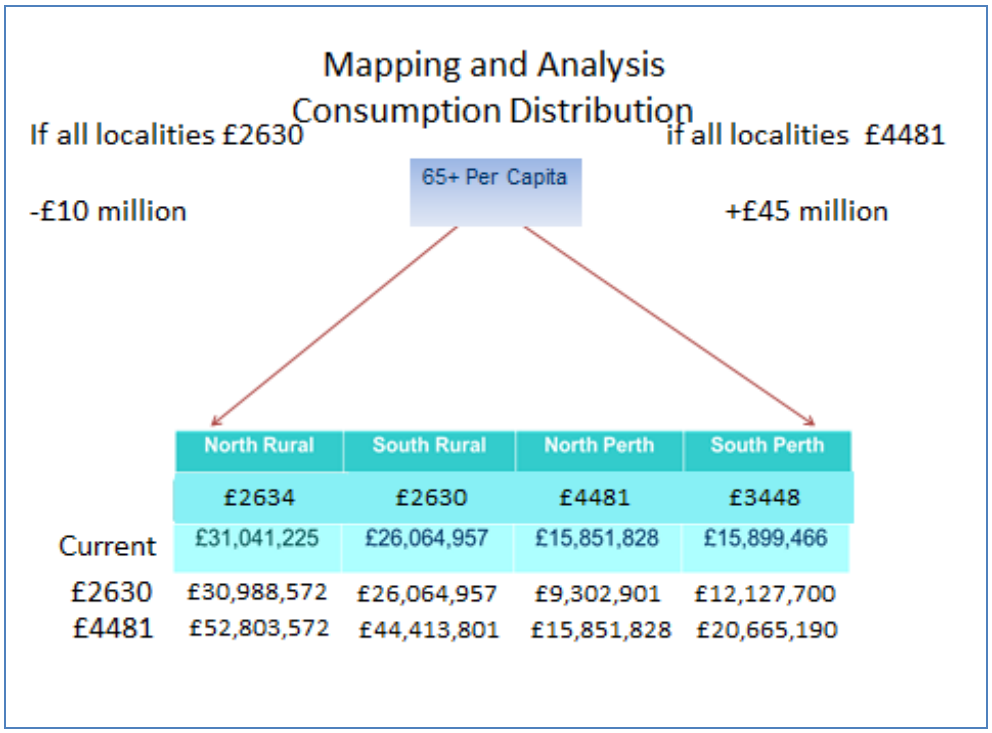
Figure A5.13 shows total consumption of Local Authority and NHS services by over 65s split into geographies. From this we can observe where the greater consumption of services occurs.

Figure A5.13: Perth and Kinross consumption of LA and NHS resources for people aged 65+



However, consumption alone does not explain the cost or efficiency of a service and therefore, it is more meaningful when we convert the consumption to per capita rates as shown in Figure A5.14. This allows us to begin to show patterns of resource consumption by the different localities. Looking at consumption alone does not identify which locality has the consumers which consume the most; instead it identifies which locality consumes the greatest resources. To understand, for example, which locality consumes more resources than the average requires the conversion of consumption to a per capita cost. This is done by dividing the locality consumption cost by the size of the appropriate population.

Figure A5.15: Variation in resource consumption by locality



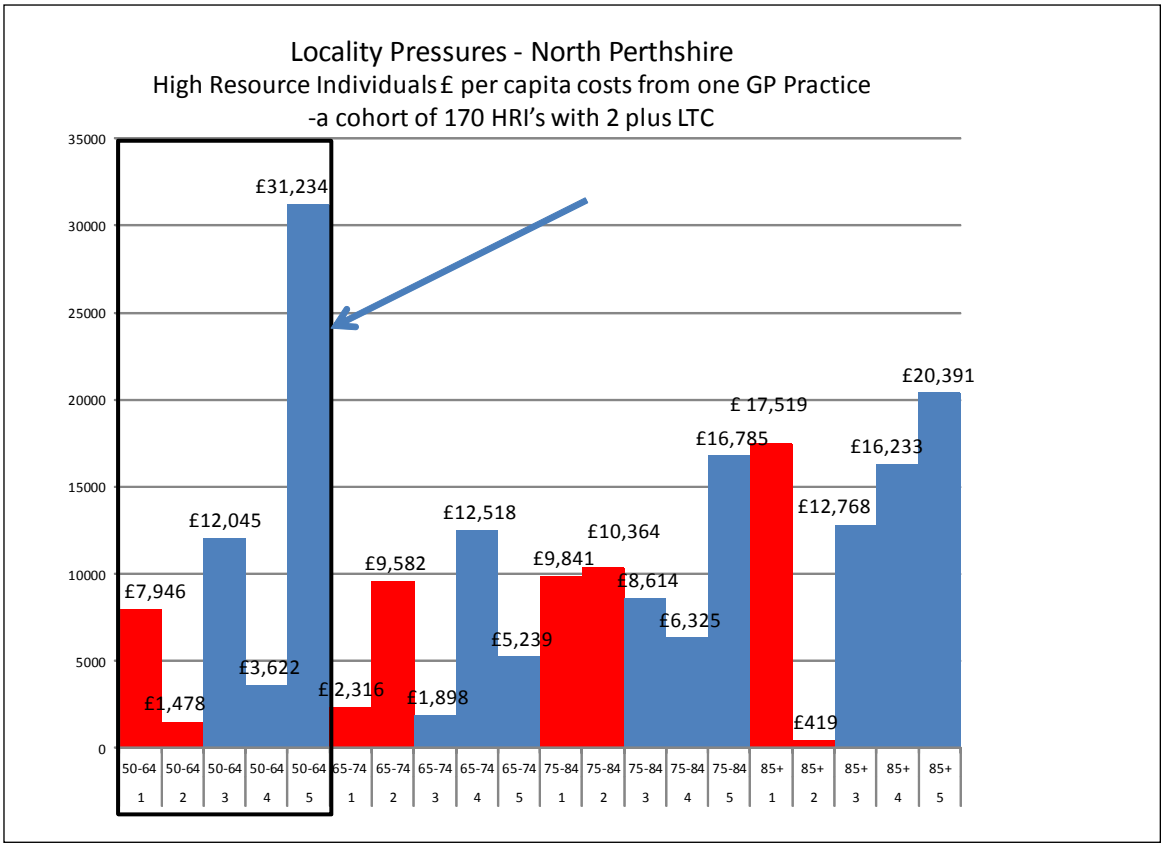
	North Rural	South Rural	North Perth	South Perth
	£2634	£2630	£4481	£3448
Current	£31,041,225	£26,064,957	£15,851,828	£15,899,466
£2630	£30,988,572	£26,064,957	£9,302,901	£12,127,700
£4481	£52,803,572	£44,413,801	£15,851,828	£20,665,190

Once done, Figure A5.15 clearly shows the lower consumption per capita of the rural localities (£2,634 and £2,630) when compared to the urban localities (£4,481 and £3,448). Additionally Figure A5.15 enables calculations to understand how changing consumption behaviour may affect overall consumption. If all localities consumed at rates similar to South Rural Perthshire then there would be a consumption reduction in the region of £10m. Alternatively if all localities consumed at rates similar to North Perth City there would be a consumption shortfall of £45m.

This leads to questions concerning the drivers of consumption, such as proximity and access to services or levels of deprivation. North Perth City is relatively deprived compared to South Rural Perthshire.

To show how deprivation might influence consumption of services by locality, data taken from ISD on High Resource Individuals in specific GP practices can be combined with the SIMD deprivation quintiles, to show the individuals who consume high per capital costs. Figure A5.20 shows a GP practice in North Perthshire looking at those with two or more long term conditions (LTC).

Figure A5.20: Deprivation Analysis and High Resource Individuals



The x-axis of Figure A5.20 shows the age group (10 year age bands) by deprivation quintiles 1 (most deprived) to 5 (least deprived).

This particular GP Practice shows that High Resource Individuals with the highest per capita costs are from the least deprived (quintile 5) communities compared to most deprived (quintile 1). This is not uncommon amongst the GP Practices we tested with this data.

Other types of useful information that can be generated to support a PBMA process include using datazones to map cost and activity of services. This can be supplemented with the use of the population data from National Records to show the application of population projection trends against a locality, allowing an understanding of future populations and, therefore, future demand and consumption of resources.

These different types of analysis are crucial for understanding consumption patterns of individuals in different areas with different characteristics in order to highlight where there are potential areas of investment and disinvestment.

Lessons learned

The integration of Health and Social Care and the development of the Strategic Plans for the Integration Partnerships require a level of business intelligence, consumption knowledge and analysis that is greater than normally used and applied as has been shown from the analysis conducted by Perth and Kinross.

If partnerships are to allocate resources in their Strategic Plans, to improve outcomes by investing in new interventions and disinvesting in others, then this can only be done by informed decision making. This can only take place when there are robust datasets and

knowledge that can be analysed to understand the patterns, trends and relationships in resources and outcomes that exist between services, geographies, care groups, pathways and cohorts.

These robust datasets are being developed by ISD through the HSCDIIP; and the Local Intelligence Support Team (LIST) will work with local teams to further develop these datasets and to support the analysis of the information within them.

Continually summarising and aggregating data, can lead to analysis becoming futile variations, trends, and patterns become lost. Analysis itself does not need to be a full statistical analytical understanding of a service or care group, instead it can be a simpler logical search for patterns, trends and relationships using pivot tables, graphs or other data analysing tools.

Therefore, to get the most insight from the data/information available requires a level of commitment, and resource, to continually drill down deep into the data looking for variation, outliers, unusual patterns and anomalies. It is in this detail that anomalies and variations are found.

When drilling down into data it is easier to pick cohorts of individuals who have something in common, whether defined by service use such as high unplanned admissions, high planned admissions, are high resource consumers of health or social care, receive Care at Home, are in Care Homes, receive Social Care support, have Learning Difficulties; or by patient characteristics such as have a long term condition flag (COPD, CHD, Epilepsy etc.); or by geography, e.g. GP Practice, are the clients of one team, all live in the same settlement, etc.

Once the data has been segmented by cohort, it is possible to compare how that cohort behaves. This can be done with different comparisons, including but not limited to:

1. Locality with Locality
2. Settlement with settlement
3. Age group with age group
4. Deprivation quintile with deprivation quintile
5. GP Practice with GP Practice
6. Year with year
7. Season with season

To fully understand the reasons underlying differences in resource consumption requires a longitudinal walk through of the processes and pathways of individuals and groupings of individuals; only then is it possible to identify the opportunities for re-design and subsequently, candidates for investment/disinvestment. This type of data and analysis can not only provide the information required to compile a programme budget for a PBMA process but also produce additional information and evidence to support the process and the identification of options for change.

Appendix 6: Template business case

This is the template business case provided to the groups in Caithness for evidencing each option against the agreed criteria. These were filled out and used to score each option against the criteria.

1. Option description
1.1. Title
1.2. Description of change
1.3. Reasons for change
1.4. Owner of business case
1.5. End date (for business case to be finished)

2. Evidence [By evidence, we mean published evidence, use of health and social care data, local and national data, expert opinion…..Evidence outlined under each criteria with the benefits of the change identified and the dis-benefits of not proceeding identified]
2.1. Access

2.2. Equity

2.3. Improved outcomes

2.4. Effective practice

2.5. Sustainable

2.6. Culture and values

3. Risks [Identify the risks involved and how these will be managed]

4. Cost of change [What would be the overall cost of the change; will the change save money and/or need investment? Provide some detail of these costs]

5. Future cost implications [After any initial cost impact will there be a recurring cost over a number of months or years? What is the time frame for the change?]

6. Implications for others [How will this change impact on other services and support areas? Both in terms of costs but also wider impacts on services and supports e.g. people who use the services, carers, staff, others and identify any interdependencies]

7. Timescales [Outline timescales and plan for finalising the business case and where possible those responsible for each section of the business case]

8. Consultation [How will consultation be undertaken and who will be involved?]

9. References [Provide references for the evidence used where appropriate]