Further Resources to Interactive Learning Module

Programme Budgeting and Marginal Analysis

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Key reference in several chapters

Chapter 2

Recent endorsements of PBMA
Annual population value review, Department of Health, published annually.

Chapter 3

Chapter 6
This module is about programme budgeting and marginal analysis. It’s a tool that should be of help to people who hold a commissioning function, whether they work in a primary care trust, or they work with a practice based commissioning group, but it will also be of interest to people who work in a clinical setting, who are on, if you like, the receiving end of the commissioning function.

The premise is simply this: that anyone who holds a commissioning role, anyone who has stewardship for public funds, should ask themselves a few essential questions. And they are these:

How much do we spend on the major health programmes, such as heart disease, or cancer or mental health?

Secondly what good does that investment do? What sort of outputs do we see in terms of people going through hospital, medicines being prescribed, contacts in the community services. And what sort of outcomes do we see? Are people getting better?

Thirdly, the comparative question. How do we compare with other PCTs? What do they spend in these health programmes? What outputs do they get in terms of the productivity of the local system. What outcomes are they generating in terms of efficiency in the local system?

Fourthly, what are the programme objectives? Just sit and consider for a moment, ideally with people who use the service, the patients themselves, the people who provide the service, the managers who run the service, what are we trying to do?

So for mental health for example, what are the objectives of the mental health programme? And it doesn’t take long for people to align themselves around a sense of common purpose, which will probably be along these lines. We’re here to try and prevent people from having this particular condition, we’re here to support them with rapid diagnosis and treatment if illness does strike. If we accept that some illness is not essentially curable, we’re here to support them through what may be a life long condition and help them to live life to the fullest and we’re also here to support their carers. Now that would be just four aims. But if we can line up around a common purpose then we have a good chance of moving forward around the programme budget deployment.

And then fifthly, how can we get closer to delivering the programme objectives within the given level of resources?

So this is not just about a needs assessment, it is about identifying the needs out there and what needs are not being met. This is about a needs addressment, how do we address the needs that we see, with the very finite resources which we have in front of us. And those resources, given the macro economic picture for the NHS might be the same, or they might even be fewer resources in a given year. Whatever that envelope of resources is, this is about spending it to best effect.

Of course the span of health care purchasing is so wide and some of the data are so incomplete that it can be a daunting prospect, but the guiding principle might be this one. It’s better to light a candle than to curse the darkness. So plunge in, have a go, light your candle and shine some light on your little bit of darkness and that’s progress.

The way to think about programme budgeting will be as a verb, not a noun. It’s a way of thinking and a way of doing. It’s a way of framing new questions and objectives. It’s a way of planning, co-ordinating, working with other people communicating, networking and then reporting back. All those ‘ing’ words which make it a verb. It’s so much more than just a noun. It’s not just a programme budget. It’s not just a static spreadsheet and set of atlases.

It might be helpful to think of programme budgeting and marginal analysis with the analogy of maps and journeys. The programme budget spreadsheet and atlases provide the maps and the marginal analysis is what informs the direction of travel. Without a map of course we wouldn’t know where we were coming from or where we were going. We could neither describe the journey to others, nor interpret their directions, but it’s not the map that is important, it’s the movement.

Where then to begin? A good place to start would be to look at the programme budget spreadsheet for your Primary Care Trust, look at the atlas, see what it says about spend and output and outcomes and issue a local report. These local reports are being produced for every PCT by the Association of Public Health Observatories, so there will be one in summary with your Director of Public Health...
and you may find further amplification in the annual report of the Director of Public Health.

Next step would be to convene some advisory groups in those programmes which look particularly interesting to you. They may be programmes where your expenditure appears to be particularly high or particularly low compared to similar PCTs. It may be those where the objectives are different. But convene an advisory group, include in that advisory group people who represent the patient interest, clinical interests, people who can tell you about finance and contracting. And then think within the group of innovative ways of employing the programme budget to meet the programme objectives.

Take that advice from the group then and feed it into changed clinical behaviours and into new contracts with providers. Use it to make a difference. Then, having made a difference, track what’s happening. Track activity, track the spend, have a look at the outcomes against the plan, then feed that back systematically so that there’s a continuous loop of evaluation, change and re-evaluation.

Continuing with the theme of patient journeys and maps, think of each programme as a patient journey and ask about the balance of investment and the balance of management thought and activity at each step along the patient pathway and work with agencies outside the NHS. Schematically that can be drawn as a patient pathway as an arrow and it starts with those aspects of the patient pathway which are related to protecting good health. What does the evidence show about what works to prevent people falling ill in the first place in this particular health programme? How much are we doing for that? How much are we spending? How much are we working together on that? And are we doing enough? And then what about diagnosis and screening and finding people early on and making an assessment of what’s wrong with them and what the therapeutic plan should be. Are we investing enough and in the right place for that step in the patient pathway?

Next is going for cure, trying to restore health in those conditions where cure is a possibility. But bearing in mind that not all illness is intrinsically curable, for example, diabetes, people will live with that for a long time, if not the rest of their life. The issue then becomes how do we help people adjust to chronic disabling conditions with the minimum of adverse impact on their functioning and on their quality of life.

And then lastly there’s the whole area of easing the passing. Making sure that when people reach the final step in their patient pathway, as we all must, that we have a well managed death in a place of our choosing and that that’s actively managed. An example of a practice based commissioning group looking at that particular step in the patient pathway took place in oncology, in the East of England. The group of GP’s asked an oncology unit, ‘what happened on the last day of life?’ of every patient who went through that oncology unit from that particular group of practices for a 3 month period. And the result of that audit was interesting to all concerned. They found that people were being sent for a chest x-ray 3 hours before they died. Why? They found that a significant number of people died while still connected to active chemotherapy. Again one asks the question, why? Quite a number had died in hospital when their expressed wish was to have been allowed to die at home. Again we ask why?

So these are examples of the sorts of questions that be asked in the patient pathway, and people can look at spend activity and intended outcome and maybe re-design things to better effect.
Programme budgeting and marginal analysis (PBMA) is accepted in national policy within the Department of Health. It features in a number of the World Class Commissioning competencies, specifically now competency six, where a Primary Care Trust that aspires to levels two or above in that competency will need to demonstrate that it’s doing programme budgeting and marginal analysis.

The Audit Commission in a report in December 2007 entitled ‘A prescription for partnership, engaging clinicians in financial management’ endorsed the PBMA approach. A subsequent report jointly from the Health Care Commission and the Audit Commission in July 2008 entitled Are we choosing health? looked specifically at investment in the prevention agenda and it endorsed a programme budgeting approach as the right framework for making sure that money for health promotion found it’s way to it’s intended purpose and that there was merit in looking at the prevention agenda programme by programme so that there are different issues in a mental health preventative programme as there are for example in a cancer or a hearing, or a muscular skeletal or a respiratory programme.

Then there is a publication available on the Department of Health’s programme budget website entitled ‘Annual population value review’. These are updated every year as the name implies and they give a step by step users guide to how to write a report on programme budgeting and marginal analysis from the perspective of a Primary Care Trust.

Now all of these endorsements of PBMA are congruent with the ‘next steps framework’ set out by Lord Darzi by the NHS where he looked at eight different themes. Each of these themes, whether they are prevention or continuing care or maternity services or child health, they all map conveniently to programme budget categories, so it’s all entirely compatible.

Turning then to the published evidence base, a good place to start would be the BMJ -British Medical Journal’s themed issue of the 18th October 2008, which looked at the whole area of tough choices and rationing, and there was a sub section in there called ‘Moving Forward on Rationing: an Economic view’ from which two short quotes are appropriate:

Donaldson and colleagues from Newcastle, England and Canada said,

“If we are to explicitly manage scarce resources we need to operationalise the economic principles of opportunity cost and the margin. Programme budgeting and marginal analysis is a process for doing this and has been used in over 70 jurisdictions worldwide.”

They went on to say,

“Without using such frameworks, powerful providers who do not represent any well defined population in the way the health authorities do, will continue to dominate health care markets. The result will not necessarily be in line with societal health priorities and result in escalating costs and a system that is unlikely to be sustainable in the longer term.”

So that’s a peer reviewed commentary on programme budgeting that’s been published. In that same issue, the editorial by two American commentators said this:

“Donaldson and colleagues argue convincingly that explicit attention to comparative costs and relative values, using methods like programme budgeting and marginal analysis can allow genuine reallocations.”

Another key reference and one that’s been used by many people who work in this field of programme budgeting is that by Danny Ruta and colleagues, also in the BMJ 2005. It was called ‘Programme Budgeting and Marginal Analysis: bridging the divide between doctors and managers’ and isn’t that exactly what we’re trying to do? Bridge that divide, get people on the same side of the fence and get people sharing a common purpose about the programme objectives and where the resources are being deployed. That particular reference gives a very nice five step process to doing a marginal analysis and that’s been widely road tested now. So that’s a highly recommended reference when you read further.

So finally, to wrap up the map between programme budgeting, the policy base and the evidence base is this new policy of QIPP – Quality, Innovation, Productivity and Prevention. Now that could be a definition of what programme budgeting is all about and it’s important at this point just to make the distinction between productivity and efficiency.
Of course we want both, but productivity could be seen as maximising outputs in terms of patient episodes, pills prescribed and so forth from a given input. But what we're looking at here is efficiency in terms of outcomes, patients getting better for a given level of input. Take for example a cataract operations service in a local hospital. Productivity would be increased if more cataract operations were done for a given amount of input. But efficiency would improve if people could see better, more people could see better for a given level of input. So we mustn’t forget to measure our outcomes and remember that programme budgeting is about maximising outcomes not outputs.

And this is an opportunity to explain two types of efficiency that are now being talked about. On the one hand there’s technical efficiency which is about the outputs for inputs, but we’re talking about allocative efficiency here for programme budgeting, that means maximising the outcomes for a given amount of input. A quick way of remembering this would be technical efficiency is about doing things right, allocative efficiency is about doing the right things.

How would you know if you as a PCT or a group of practice-based commissioners were being allocatively efficient? The answer is, if there’s no one waiting for treatment outside a programme of care who has a greater capacity to benefit than someone who is already in the programme and receiving care.

So, to conclude, programme budgeting gets to the heart of the commissioning function. It asks new questions, steers us to new answers, fits well with national policies, and is grounded in a solid evidence base to which, we hope, you as the listener will add your experience in due course.
In the latter part of 2007 the then director general of commissioning and strategic development at the Department of Health, Mark Britnell, convened a series of discussion events to develop the values and the competencies that would define what he called ‘World Class Commissioning’.

At the heart of the initiative was the slogan ‘adding life to years and years to life’.

Imagine it as a two-way axis – length of life stretching out to the right, quality of life stretching up to the top.

Most people start life with a full quality of life, and this gradually diminishes over time as each of us accumulates our own personal portfolio of chronic disabling illnesses, such as diabetes, arthritis, loss of hearing, the first heart attack and so on.

We know from census returns that about the last nine years of a man’s life and eleven years of a woman’s life, people describe themselves as living with some sort of limiting condition.

A great deal of medical effort and expenditure goes into helping people in later life extend that life by months or years, even if this is of relatively low quality. The area under the extension represents health gain.

The argument in World Class Commissioning is that there would be a greater prize in extending quality of life rather than length and yields a much greater potential health gain.

The components of quality of life include not only absence of pain and disability, but having a job, house, relationships, physical activities, hobbies, being all you can be. This necessarily takes us beyond the NHS itself and into partnerships with local authorities and others.

So here are the World Class Commissioning values in turn.

1. Better health and wellbeing for all. This is about healthier longer lives with reduced inequalities.
2. Better care for all. This about evidence based care, measurement of quality, choice, control, personalised care.
3. Better value for all. This is where programme budgeting and marginal analysis, commonly abbreviated to PBMA, really comes in. We need investment decisions that are informed and considered. We want improvement within available resources. We need PCTs looking outwards to partners and not just upwards to the strategic health authorities. And we need to be able to satisfy independent regulators like the Healthcare Commission and the Department of Health.

The 11 competencies listed under World Class Commissioning are all served and supported by PBMA. We’ll go through them quickly in turn.

Competency 1: Leading the local health economy

Leaders have a clear grasp of where they are, a vision of where they want to go and the ability to bring others, who may be more specialised and technically skilled, on a shared journey to get there. There are many contributors to health and health care, some of them outside the NHS, but only the PCT has the full overview and is therefore obliged to share the big picture so that everyone can see their part in it.

Since health and health care are hugely complex and there are so many people who hold a stake in success, it makes sense to break the task into meaningful, manageable chunks. This is what the 23 programmes of programme budgeting allow us to do.

The basic list of 23 programmes can be broken down into sub programmes and cross-tabulated with other breakdowns such as age group, locality and provider organisation, or indeed steps in the patient pathway. Additional features of leadership include openness, accountability and integrity. Putting the current deployment of investment and outcome into the public domain for scrutiny and comment demonstrates those attributes. And above all leaders inspire a sense of common purpose. The programme objectives provide that common purpose. This is the ‘mission’ in commissioning.

Competency 2: Work with community partners

This is where we put the ‘co’ into commissioning. The strongest and most formulised partnerships in the community are the local strategic partnerships with local authorities. The NHS role in these partnerships is to make sure that the NHS agenda feeds into a wider discussion of determinants of health and well-being and vice versa. Where possible organisations should pool resources for joint commissioning and collaborating joint provision too. The programme budget work has been referenced in the joint strategic needs assessments of a number of PCT’s in 2008, and where there are specific health targets in the local area agreements these can be picked
up as programme objectives in the PCT’s own five year strategic plan. Under the programme specific recommendations the PCT’s can make reference to the importance of new partners in meeting objectives. Including, where relevant, carers support groups, voluntary organisations, sports, leisure, and arts organisations. That point is emphasised elsewhere in this module under the mental health example.

**Competency 3: Engage with public and patients**
If there is to be genuine public and patient consultation on the current state and future direction of health programmes, the public and the PCT’s partners must have access to basic information on current deployment and resources, health outcomes and comparative performance. The PBMA reports and annual reports of directors of public health should do this and these should be available in printed copies and on the PCT website. A significant organisational development step would be to get public involvement (including patient and carer involvement), in programme specific marginal analysis advisory groups. This was recently tested in a pilot scheme funded by the NHS institute and has been shown to work. These groups need to be established in all key programme areas.

**Competency 4: Collaborate with clinicians**
One of the central reasons for adopting a programme approach to commissioning is to get clinicians involved in programme objectives, monitoring programme outcomes and advising on the programme budget. The powerful stimulus to change is for clinicians to look at programme performance achieved in other PCT’s. Programmes provide a convenient framework for clinical dialog between commissioner and provider organisation. GP’s can engage as either commissioner or provider, but the greatest strength is the clinical input to marginal analysis advisory groups, and we cover that again in the sixth competency below.

**Competency 5: Manage knowledge and assess needs**
One of the ways of managing knowledge is to order it under meaningful and manageable headings, which is exactly what programme budgeting allows. It is a convenient set of headings under which to log data, evidence and qualitative feedback, to look at inputs, outputs and outcomes, to show inequalities, comparative performance and models of good practice. Note that all NICE guidance has been mapped to programme budget categories and you’ll find that under www.nice.org.uk. In fact the NICE definition of a needs assessment is “a systematic method for reviewing the health issues facing a population leading to agreed priorities and resource allocation that will improve health and reduce inequalities.” Notice the reference to resource allocation, which is a necessary and integral part of needs assessment, hence the keenness of public health to employ PBMA for needs assessment. In fact we could talk about needs addressment. That would be a better term wouldn’t it, than needs assessment? People don’t want their needs assessed, they want them addressed.

**Competency 6: Prioritise investment**
This is where marginal analysis comes in. The essential steps are well tried and well described in the peer reviewed professional literature and can be summarised thus: and it’s a list of points.

1. Convene a marginal analysis advisory group in the chosen programme, typically including service users and carers, clinicians in primary and secondary care, local authority where relevant, NHS commissioning or finance managers and public health or health economists.

2. Establish the resource assumption for the programme budget. Will it be steady state, will it be an increase budget, will it be a decrease budget? Understand the envelope that you’re working to.

3. Consider ideas for disinvestment. This is reigning in or stopping activity of lower efficiency. That can be called a hit list.

4. Consider ideas for new investment that would meet the programme’s objectives. That would be your wish list.

5. Agree some criteria for judging priorities on those lists. By what criteria will you judge whether something should be taken out of service or added in to service. What are the things that matter? Make the list and give them weightings.

6. If possible do a full economic appraisal of marginal costs and benefits from the various options. If that’s not possible at least do it qualitatively, recording the assumptions that were made and the value judgements so that there’s an audit trail.

7. Because all of that relies on data which may be imprecise it is still necessary to consult

8. Make it happen. That’s the implementation stage.
Chapter 3 – World Class Commissioning (cont.)

9. Evaluate. Check whether the costs really did fall as expected, whether the outputs and the outcomes were as expected. So evaluate whether it was working in practice in your hands.

10. Repeat, annually, in perpetuity.

In support of the fifth step in that process, that of agreeing the criteria against which priorities for investment and disinvestment should be set, the following is a draft set of criteria to help standardise the process. The weightings would be set by the group. These are illustrative, these are taken from one particular PCT who have discussed this at board level, they don’t necessarily have to be adhered to in every PCT, they are here as a starter for your own discussions. Here they are:

1. Effectiveness and cost effectiveness. And the questions under that would be:
   - Is there a measureable evidence based benefit for the individual and / or the population?
   - Does it meet professional guidelines, evidence of best practice and deliver service models that are known to improve outcomes?
   - How big is the benefit and how long will it last?
   - What will it cost, including any savings?
   - And what is the relationship between cost and effect?

2. Quality, safety and clinical governance.
   - Does it meet mandatory legal requirements and healthcare commission standards?
   - Does it deliver safe services within clinical governance framework?
   - Does it support professional standards and competence?
   - Will the Royal colleges approve?
   - Does it reduce professional isolation and support clinical networking?
   - Does it minimise mortality, the risk of harm from the medical process?
   - And does it reduce serious, untoward incidents?

3. The patient and the carer experience.
   - Does it support service delivery at times and places convenient to patients; either closer to home or within reasonable travel times, where possible including consideration of convenience of accessibility, waiting times and choice?
   - And does it help meet public perceptions of the NHS as elucidated in surveys?

4. Feasibility and sustainability.
   - Is it affordable, within the income being generated through tariffs and potential capital investment in estate and infrastructure?
   - Is it sustainable giving the changing workforce, sub-specialisation, working time directives including training, recruitment, retention of staff and potential changes over the next five to ten years?
   - Are the clinical networking arrangements with other clinical and tertiary providers to support the model feasible?
   - Can implementation be reasonably achieved having minimal impact on the delivery of services and with available staffing?
   - And are the changes acceptable to service users and partner agencies?

5. Is policy and strategy fit?
   - Does it deliver equitable services within local and national strategy?
   - Does it address the known nature and scale of the problem and deliver a patient focussed, functionally integrated services?
   - Does it take into account the role of the NHS within wider society and the social care and regeneration agenda?
   - And does it fit with carbon reduction?

Returning then to the World Class Commissioning’s competencies,

Competency 7: Stimulate the market
And here by focusing on programme objectives rather than current providers there is an opportunity to pause and think afresh. Market stimulation is compatible with the establishment of long term collaborative arrangement with all potential providers, actively nurturing and encouraging new ones, for example the voluntary sector, and of course actively managing the phased transfer of work out of existing providers, perhaps an existing hospital.

Competency 8: Promote improvement and innovation
There is arguably far too much inertia in historical precedent dominating the provision of health care. We are stuck in a rut, and such innovation as we have seen has been disjointed and incremental rather than strategic and transformational. The published experiences of places like British Columbia in Canada or Norfolk, is so that a programmed approach can be truly
transformational by challenging and liberating clinicians innate creativity, but yet to do so within the discipline of a known budget.

**Competency 9: Secure procurement skills**

One of the underdeveloped procurement skills is the specification of clear outcomes for example the programme objectives in a PBMA approach, and thereafter having a process of assurance, incentives and sanctions.

Here’s a fundamental question for any PCT: Are we investing in health, or are we simply paying for health care? There’s a big difference. The purpose of PBMA is to get the PCT onto the front foot so instead of being reactive and merely paying for healthcare through a series of contracts using centrally determined tariffs until the money runs out, it’s proactive, and uses it’s budget in a purposeful way to invest in health care.

**Competency 10: Manage the local health system**

Since local health systems are complex we need to find a systematic and comprehensive way to simplify and co-ordinate them. The 23 programmes of the Department of Health’s PBMA project address this need. One of the key financial summaries is a table. It lists the 23 programmes down one side, think of that as the rows in the table, and where the PCT’s money goes, the hospitals, communities services and so forth making the columns of the table. This single table, with the programme budgets running across the rows and the providers of services running down the columns, all adding up to the bottom right hand corner which is the total money available. That single table brings together the public health and clinical interest, which is the programmes, the commissioning provider interest, which is the columns and of course the financial interest, since the whole table is showing where money is being deployed. But, managing and co-ordinating the money is barely half the picture. The outputs, i.e. the productivity and the outcomes, i.e. the efficiency are every bit as important. When all PCT’s are working to the same standard like this it’s possible to make comparisons with other places, especially those that are demographically similar, looking at the variants and using that as a starting point for a discussion on how we might do better. Those data are available through the programme budgeting atlases.

Individual programmes give us a framework to which we can attach our proposed actions on inequality, assess the impact of demographic shift; the demographic shift in mental health can be very different from the demographic impact on the cancer programme or the infection programme for example. And then we can use them to plan for the impact of new technology and we can draw on patient feedback and so on.

And finally…

**Competency 11: Making sound financial investments.**

The cardinal features of sound investment are; not breaking the annual budget; supporting the viability of all essential partners; being able to demonstrate that all reasonable steps have been taken to get a good health return on the investment and that return is as good locally as in any comparable PCT elsewhere. Demonstrating responsible stewardship of fund implies writing an annual report, in lay language, accessible in a number of ways, including on the PCT website, supplemented where appropriate by public meetings and feedback to staff and partner organisations.

PBMA has attracted the interest and endorsement of external auditors, though data accuracy needs to improve.

PBMA is an evidence-based approach endorsed in national policy. So here are some key phrases to take away and ponder:

Commissioning should be transformational, not just transactional.

We need to put the mission into commissioning.

Measuring successful outcomes. In world class commissioning, as in programme budgeting, outcomes are assessed at different levels. For example at a personal level the question might be did the patient with the heart attack survive and recover? Then at the programme level the question might be, overall are the mortality rates for circulatory diseases improving? And then at the community level, and the question might be, with respect to heart disease, is Scarborough, or Truro or Manchester a healthier place to live than it was five years ago?

Finally take a moment to reflect on personal and organisational development needs.

This list of competencies is a good syllabus to cover but you can choose the order of priority and the depth of coverage to suit your personal and organisational needs.
Chapter 4 – Marginal Analysis in Action

This chapter is entitled marginal analysis in action. It takes some tips and tricks from the Norfolk primary health PBMA pilot, and I'd like to acknowledge the leadership that Linda Kemp a health economist from the University of East Anglia gave to making this a success and the funding that was received from the NHS Institute for Innovation and Improvement.

To reintroduce the topic what is the PBMA, remember there are two elements. The PB is the appraisal of the allocation of resources to programmes alongside their activity data. The MA, the marginal analysis, is the added or lost benefits and added or lost costs of a proposed change in the allocation of resources. This is an economics based approach to managing scarce resources; it’s a way of explicitly assessing the costs and benefits of proposed changes in the delivery of health care.

PBMA for this example focuses on some key questions. There’s the programme budget: what are the total resources available for the programme that we are going to look at? And in this instance it’s the mental health programme. And on which services are these resources currently deployed?

The marginal analysis element consists of constructing a hit list, what services can be provided as effectively but with fewer resources? Or, what services should be stopped or scaled back? Thereby releasing resources. That generates the funds by which a wish list can be resourced. On the wish list side, what services are candidates for receiving more resources?

This PBMA pilot in Norfolk was sponsored by the NHS Institute and it had a number of outcome objectives. First and foremost it was to test the model of programme budgeting and marginal analysis at the micro level proposed by Ruta and others in the BMJ 2005. It was tested in three different programmes of care and in three different geographical localities of which our worked example is just one and it had four important end points. We wanted to assess acceptability. If we ran the marginal analysis groups would anyone turn up and would they stick with it?

Second we wanted to test data availability. If you run a group like this is there sufficient data available on costs and outcomes to make it a meaningful discussion?

Thirdly we wanted to test the practical value. Would such a group lead to real change in real time or was it just a theoretical exercise? And lastly, we wanted to test its generalisability. Can you role this out, can you put it out on an industrial scale? Because remember, what we would like at the end of the day would be for every PCT, all 152 of them, to be running a number of marginal analysis groups on a regular basis. So it has to be generalisable and not just work under the special conditions of a trial with special funding.

And as I hope to demonstrate at the end we found that the answer to all of those questions was a yes. But in some cases a qualified yes.

So next slide, what do we need for PBMA? Well you need an area to analyse. You need a good facilitator or project lead, who can be the PBMA champion and stick with it and see it through. That may be someone from a neutral background like public health or health economics, or it may be one of the committed practitioners say in a general practice or in a hospital. And you need an advisory and stakeholder group.

The composition of that group is important. It should always encompass service users, clinicians and managers, but depending on the topic you may want to also include people for example from the local authority. The size of the group needs to have sufficient representation, we found between 12 and 20, but not too big to become unwieldy and not too big so that everyone can have a say.

It helps to draw on an existing group, if you have a diabetes network or a respiratory advisory group or something like that in existence, a cancer network, draw on that rather than create one from scratch.

There are two further issues just before you start, the role of the project lead and the role of an advisory stakeholder group.

The role of the project lead is to act as the facilitator and chair, to adapt the process to suit the organisation and the local context, to provide educational and technical support, the methods, the concepts, the costing, perhaps bring examples from published cases elsewhere, to undertake the relevant research, to help convene the advisory groups, to compile the results and to report back. And to analyse and evaluate the project. So that's a big job description and you need to right person for that.

For the advisory and stakeholder group, their job is to undertake the work, to ensure the process is completed, that the ends and objectives are met, to monitor the progress, validate the
outputs, to participate in the interviews after the implementation, to actually see it through to completion. To keep their organisations and their networks which they are there to represent informed all the way through and of course to act on the results.

In the Norfolk advisory group for mental health we had representation from the following stakeholders; from the PCT itself, public health, commissioning, finance and costing; from the local Mental Health Care Trust we had clinicians and finance; from primary care we had GP's; carers were represented; a number of service users were there and the voluntary sector was represented by four different charities.

So what do we need for a PBMA exercise? You need to know the programme budget resource envelope. We were starting with a resource neutral expectation – there was going to be no more money, how could we use it better? You need to develop local criteria that are weighted. You need look at options for service change to the investment and disinvestments.

You need to have a business case template ready, so that when you focus in on likely candidates for investment or disinvestment you can work them up in more detail and you need to be able to score those business cases; combining the weights and costs to their prioritisation and ranking. And of course, make recommendations, review how you did and start over.

The next screen shot will show you a business case template and there you put the title of the proposed investment or disinvestment, a brief description of its strategic context, the proposed changes themselves, the criteria such as magnitude of benefit, duration of benefit, personal networks involved, the net costs, the number of beneficiaries and so forth.

So here schematically were the results of the pilot. Having determined the aim, scope and so forth, the programme budgets, we worked our way down the different sides of this flow diagram, which we'll now show in sequence.

The first was to define the set of criteria and weight them. This rather busy slide shows the summary of the Norfolk criteria. This took two meetings of the group to thrash out. What did people feel were important qualitatively when trying to assess whether something was a candidate for new investment or a candidate for disinvestment.

And here you see them spelt out, but we grouped them into four main headings. They were those which related to effectiveness, those which related to policy and strategy, those which related to feasibility and those which reflected quality of service.

We then asked people in another meeting to give their personal weights to them and we discussed the average scores and we thrashed out a consensus view on what weightings should be given to these criteria for this particular programme budget. And that's what it was: 30% for effectiveness, 30% for quality of service with 20% for policy fit and 20% for feasibility.

So having defined the criteria and weighted them we then started to identify options for change. The hit list and the wish list.

Here on this slide is a summary of 11 topics which made it onto the wish list from an original proposal for some 33. There was one relating to health promotion which was in the community setting. There were a number which related to complementary interventions which were in the community, primary and hospital setting. There were a number relating to clinical treatment, lifestyle support, carer support and specific to child and adolescent services.

On the hit list, from an initial list of 18 items, it was revised down to 9. Two of the proposed disinvestments related to prescribing antidepressants and atypical antipsychotics respectively. Some related to shifting to a different provider, some related to simply improving efficiency within existing services and some related to actually cutting back on services.

So having identified options for change it was then a case of scoring the proposals against the criteria that we had set in the earlier exercise. Business cases were developed for the following services and those criteria could be applied in some depth. Here they are listed, they are not immediately self explanatory but there was one which was about gardening for health, which was a franchised idea relating to the 'green gym' project, the green gymnasium project, which was about physical activity and a group activity specifically for people with mental health issues. There was the young peoples 'one stop shop' which was about bringing services together in one convenient place, a new assertive outreach service, a floating support initiative. A holistic mental wellbeing service that
was particularly strongly advocated by the user group, and a nurse led eating disorders service, which was a model we had picked up by a visit to a neighbouring PCT where their programme budgeting was showing that they were spending less but getting better outcomes.

We then calculated weighted benefit scores by combining the data above and it works like this: here were six proposals for new investment which came out top of the rankings for potential new investment and they were the weighted benefit scores for each. And assertive outreach and holistic wellbeing came out near the top of that particular ranking.

Putting that ranking of benefit along the bottom axis going out toward the right hand side, against the cost per beneficiary from this scheme gave us the following chart. And if you look to the two front runners on the right hand side which were perceived to give the greatest benefit there was a huge difference in the potential cost. The holistic wellbeing was very cheap and inexpensive and the one for assertive outreach was the most expensive per beneficiary. Schematically that can be shown by these two lines on the chart, with a small increment in benefit a huge rise in cost per beneficiary.

The next step was to rank some options and make some recommendations. Turning then to the disinvestment list. Here is a costed list of those disinvestments which would free resources to fund the wish list. And here they are now ranked in priority order. And potentially if those full disinvestments could be realised, we could have released £3.7 million from a programme budget of around £80 million. There’s a significant scope for redeployment of resources.

So we need to start at the top and work down as far as we can go within the practical constraints of changing clinical practice in real time. And the recommendation was to start with £194,000 of disinvestment, released by following the protocol for prescribing, and use that to fund the holistic mental wellbeing service which was estimated to cost £175,000. We would then move on down the disinvestment list and fund incrementally those on the wish list as far as we could possibly go.

So that was how the marginal analysis was constructed and run and the recommendations it made.

A sensitivity analysis was run. Did it matter if we changed the weightings, if we changed the costs, if we changed the number of beneficiaries, and the answer in essence was no it didn’t. You had to change those assumptions by a very wide margin before if changed the rankings and changed the decisions. So that was reassuring.

So finally there was the aspect of reallocating resources to improve the health outcomes. This is where the marginal analysis group handed over to the managers who were being represented on the analysis group. It’s very important that they have the authority to commit to a process which will then go back to base and be implemented.

The findings in summary from Norfolk and its peers were on the engagement side. In Norfolk the biggest area of difficulty was engagement with primary care. It was difficult to get the same GP’s to attend each meeting and stick with the process for the eight months that it took to run over a period of some six meetings. So we had to engage with those GP’s outside of office hours, outside of the meeting hours to keep them on board, sometimes by email.

The examples which were run in Hull, they found very good attendance all the way through, and in Newcastle where they simply grafted their initiative onto an existing group, they found that that was a useful model. So yes engagement is there but it needs working at.

As regards data all of the projects found that sufficient information existed for the project to run and to conduct the marginal analysis group, though in Hull, where they were looking at diabetes, they had to drill down into local data before their initiative could run.

In Newcastle they found some issues about sharing information across health and local authority partners and in Norfolk they found the least problem with the data of the three.

The practical value – all three found practical value. In Hull they found that spending across the care pathway brought to light a whole new area of information, particularly on prescribing in secondary and primary care. In Newcastle the outcomes that they proposed will be put forward into that years local delivery plan for consideration and that’s their implementation mechanism.

And in Norfolk it was found as a useful tool in mental health, particularly as so many of the
stakeholders had strong views hitherto, it was most useful in getting people lined up around a common purpose. And in terms of generalisability, all three sites found that this could be rolled out but a lot of training needs to done to embed it into core PCT practice. We need to prime the pump with training materials, such as the one you are looking at the moment, in order for people to engage with this process and move it more quickly.

The big strengths are that it engages clinicians and managers at the same time. It recognises opportunity, cost and scarcity and makes the evidence that people own it. It is transparent and open. It takes into account the evidence but also local as well as national policies and priorities and a whole variety of benefits and it can be adapted to local circumstances.

And the challenges to be overcome? It's important to get both engagement and trust within the advisory group. It's also a challenge to align it up with the planning cycle so that it feeds into the other decision making prioritisation that's going on in the PCT at large.

The incentives for change need to be strengthened because there is a huge amount of institutional inertia. It can be seen by some as additional work, it shouldn't be. It should be seen as the core role of the participants and written into their job plans for those of them who are salaried employees of the NHS.

And of course it's challenged by a lack of organisational stability and the continuity of personal. There's a huge amount of movement within the NHS and some key people can move on and get other jobs, so it needs to be resistant to change of that sort.

And finally a piece of additional reading, if anyone wants to look at the model we used to road test when we were doing our marginal analysis, a very good place to start would be Ruta, D and colleagues, Programme Budgeting and Marginal Analysis – bridging the divide between doctors and managers; British Medical Journal 2005: 330, 1501-3.

But have a go, get in there, try it, see if it works for you, and if it does please write it up because we need more case histories.
Transcript

Chapter 5 – Example of PBMA in Action: Mental Health

Perhaps the best way to convey what programme budgeting is all about and how it can make a difference is to tell a story. So here’s a story based on an experience in Norwich, which you’ll see from the slide is a fine City, twinned with a number of fine European Cities including Novi Sad and I must have walked or cycled past this sign umpteen times before I noticed that the smudge at the bottom of this sign is actually some graffiti. So if you blow that up a little bigger you’ll see it’s a sad person. So here’s some graffiti, someone saying mental health is an issue in Norwich. There’s a message here about always read your graffiti because that’s an example of public engagement.

So here we go, mental health in Norwich PCT which later became Norfolk PCT. The first point was that we had a relatively high spending mental health programme but hadn’t recognised that until very recently.

It took us two years of looking at the data to truly believe what we were seeing, but when we did look at it we found that the expenditure was generous in GP prescribing, in secondary care services, in an expensive tertiary referral centre in the private sector and even our grants to the voluntary sector were generous. But to our discredit we hadn’t really formed a sense of a common mental health programme, a sense of common purpose. We hadn’t made a statement of what our commissioning objectives were for mental health in the round.

Also active was a very powerful medical pharmacological model of care, basically doctors and pills were what you got if you expressed a mental health problem. But there was a very organised group of users who were eager for change, challenging us for change. They said ‘where are the arts? Where’s the exercise? Where are the talking therapies? Why are these evidence-based opportunities not available to us? And of course they were right.

So this made it an ideal candidate for a PBMA approach. We were going to pick up the issue of mental health in the annual reports for the Director of Public Health, and we were going to ask these questions for each health programmes, including mental health, what are the big issues and objectives? How much do we spend? How does it compare with our peers elsewhere? How is it broken down? Where is the money actually going? What health inequalities do we see and what are the trends looking like? And at the end of all of that how might be do better at each step in the patient pathway, this year and next year?

The next slide shows where we were with antidepressant prescribing and this was at March 2003 for a years worth of prescribing. And as you’ll see there were a number of PCTs representing the vertical bars across this chart, right across what was then the Central region of England. There are different types of antidepressant which cumulatively give you the height of the bar and there’s Norwich right at the end of the line, a quantum leap higher than anyone else – a very high prescriber of antidepressants. Last years report shows that GPs in Norwich prescribed 1.3 million antidepressants medication in 2003, that figure has gone up to 1.4 million in 2004. We need to look in more detail at the components of this expenditure and explore where effective (and cost effective) alternatives may exist. Incidentally note the brackets. When it comes to health economics we tend to be a little bit apologetic. I apologise for introducing cost effectiveness so I’ll put it in brackets, I thought in the context of that report. Clearly with programme budgeting we’re putting the economic appraisal right on the front foot, no need to apologise in future. It went on to say that there may be savings that could be made in this programme over all that could be allocated elsewhere, but only if the case is proven that there would be greater health gain by doing so, and that’s an important ‘but’.

So to move on, the next slide shows basically where we were going wrong and where to this day I think some PCTs are going wrong. We were looking at expenditure in terms of where does the money go by “provider” of health care not by health programme.

So here was our list. It begins with the Norfolk and Norwich University hospital, our biggest district general hospital and the next item was the general medical and pharmaceutical services, then the GP prescribing budget, then our own community services, then our next biggest District General Hospital, then and only then our first mental health trust and its budget was around £49 million out of an overall PCT budget of about £843 million. And then you need to move down that list before you
find another mental health provider, the specialist private provider of forensic and psychiatric care. And that was so far down the list that it looked as though mental health wasn’t a particular priority or a high spending programme. But when we looked at it the other way, when we looked at it by health programme you got a very different picture.

Because many of those providers were actually providing services for mental health, and this is just where mental health was the primary reason for contact. It was 13% of our turnover. It was £1 in every £6/7 that we spent, went on mental health and that came as a genuine surprise to our PCT board. They then said yes we really must explore just where that money is going and what return we are getting for our investment. We should be consciously investing in health care; we shouldn’t simply be paying for the bills that come in.

When we looked at comparative spend between us and others we noticed that the Norwich PCT was spending substantially more than a cluster of demographically similar PCTs. They in turn were spending more than the national average. We couldn’t find an easy justification for why Norwich should be spending so much more because our outcomes weren’t substantially better.

There was considerable press interest and significant support from the mental health user group for tackling the scale of GP prescribing. The headline in the Norwich evening news was ‘Why is Norfolk hooked on pills?’ And they extracted from the public health report and made the comment ‘£34 million had been spent on antidepressants in the period from the year 2000’ and the Director of Public Health was placing the onus on GPs the break the cycle by getting patients off antidepressants and seeking other ways of treating the illness. You can understand that putting ones head above the parapet is a nervous place to be, but in programme budgeting you need to take a few risks if you are going to make gains. I was concerned that GPs might take offence to this seemingly overt criticism but in fact the reality was completely the opposite.

Here’s a report from Dr Alan Gall and partners who were only too happy to explain their pioneering scheme to cut antidepressant pill use. Other GPs were quick to come forward and say they were keen to use talking therapies. Could we address the postcode lottery as they described it in access to talking therapies. A buzz began to get going.

Can you see the telephone logo at the top of the newspaper cutting? That was the start of a phone in campaign for people to tell their stories about mental health issues and these were run in the newspaper over a number of months. For example, the Chairman of the users group told his story about being put on to medication and then taking some considerable time to get off it again and his comment was ‘the drugs don’t work’.

The next cutting illustrates a visit we had from ‘rethink’ a mental health charity. They came twice to Norwich, they did some before and after survey work about GPs attitudes and they did a lot of de-stigmatising work through the arts in particular and debates in the public media. Just getting people talking about mental health issues and de-stigmatising the whole subject, and beginning to look at the best use of resources to get a return.

And some of the responses were from very small groups, for example, ‘if you’re lonely you’re not alone’. This is a bereavement group who said if you’ve lost a loved one there is no need to go straight to the doctor for pills and a hospital referral, why don’t you join our group and talk it through.

New allies and new allegiances were formed. This is a picture of Peter Wilson, the Chief Executive of Norwich Theatre Royal, who, when the Festival of Science came to Norwich helped run some seminars on looking at the evidence base about prescribing drama for people with chronic disease, particularly the mental health aspects of coming to terms with and living with chronic disabling conditions.

And so between us we began to articulate for the first time what the programme aims should be for mental health and they were these:

To promote positive mental health and prevent relapse.

To alleviate symptoms when mental illness does occur.

For those with chronic or intractable conditions, to promote maximum function and getting them integrated into society with leisure, recreation and employment.

And finally, to relieve the pressure of their carers.
Chapter 5 – Example of PBMA in Action: Mental Health (cont.)

And we backed up those aims with some objectives. And here are some in summary:

We wanted to show a measurable reduction in self-harm and suicide rates.

To reduce the high levels of antidepressant prescribing closer to the national norm and the norms for our peers.

To increase the non-medication therapies such as arts, exercise, talking therapies, group therapies.

And to reduce expensive out of NHS placements if equally good outcomes were available locally.

But of course not only prescribing was high, but bed usage was high too. We turned to the atlas of programme budgeting and began to map our expenditure against a number of outputs and outcomes in the mental health programme. And here you see a group of dots representing our peers, the PCTs which were similar to Norwich and the arrow coming in shows that Norwich tended to be the outlier again and again, in terms of a high spend and adverse or inefficient outcome. So clearly a picture was beginning to emerge that we weren’t getting the best return on our investment.

To prove the point that the evidence was having an impact, look at this email from Dr Hadrian Ball, the Medical Director of the local mental health trust. His email said “I’ve been constructing hypotheses and then looking at the data particularly using the correlation site”. You see he’s asking new questions, that’s exactly what we want programme budgeting to do. He goes on “on the basis on my observations the PCT has every right to be asking questions about how its investment in mental health is being spent”. That’s a very refreshing attitude from a partner on the provider’s side. The PCT has every right to be asking questions. And then thirdly he says “I’m very interested in getting our lead clinicians to be thinking about productivity. I think that the data available will provide us with a basis on which to move our thinking forward”. So he’s using the evidence of spend and outcome to improve value for money.

Programme budgeting also provides a very good framework for addressing inequalities programme by programme and the inequalities in mental health were stark.

Here’s a chart which looks at the electoral wards which make up the City of Norwich. There are 13 electoral wards and they are charted here left to right by rising index of deprivation within the electoral ward, so the most deprived wards are on the right hand side of the chart. On the upward axis is the admissions ratio standardised against the Norfolk norm for admission into a mental health bed. What was clear was that the chance of ending up as an inpatient in a mental health bed rose fivefold from the most affluent ward to the most deprived ward. And when this chart, this one chart was shown to the Local Strategic Partnership at City hall, local Councillors said we must do something about this. Is there an evidence base? What can we do? We said yes there is an evidence base, we can tackle the determinants at source and they said fine, have £300,000 this year and another £300,000 next year if you can address the determinants of mental ill health in our 5 most deprived electoral wards. And that’s what we did.

So here was an example of how we in the NHS were taking some money out of the mental health programme because we could demonstrate inefficiencies and wasted resource, but meanwhile someone else was putting money in from another source to tackle the prevention side. And how’s that money spent? Well here are some examples:

First there were the Norwich fringe walks, where people could be referred to our walking as a group activity in the fresh air, with all the benefits that that brings.

Secondly an initiative with the Norwich City Football Club, where a lot of youngsters got more active, took part in structured programmes with supervision and the mentor facility of the programme supervisor to co-operate and collaborate with others while being physically active. And a strong incentive here was those who stuck with the programme and who participated well were allowed to come and watch a match, and they were presented with a congratulatory certificate on the pitch at half time. A huge buzz for someone who may not have had such an opportunity.

Thirdly, and in particular for the girls was dance. This was another way of being physically active and takes you out of yourself and takes you into a group activity, restores self-esteem.

And fourthly the whole area of arts, using creative activities as a path back to health or to support
people living with an abiding condition. The two further education colleges in Norwich now offer foundation courses in arts for health, where the art students and artists of tomorrow are taught about health awareness, mental health awareness, learning disability awareness, physical impairment, and similarly the medical students, the doctors of tomorrow are taught about arts and health, so that they can think perhaps beyond the pill and the hospital referral when dealing with some of these conditions. So the artists of tomorrow and the doctors of tomorrow, in Norwich, have learnt to share each others language and talk to each other.

And another example would be the singing for health. The picture illustrates a physiotherapist in the dark top in the middle with the glasses, facing the camera, who is explaining to a reporter from radio 4 about the sing your heart out initiative at the mental health trust, where patients, carers, staff, doesn’t matter who can all come and participate in structured singing lessons and that’s evaluated extremely well.

So the big question then is did anything change as a result of thinking of the mental health as one big programme, of deploying the resources to better effect, of collaborating with people that we didn’t normally collaborate with? And the answer is yes.

First the antidepressant prescribing, here’s the picture at March 2006, and here’s Norwich. As you can see Norwich has fallen back within the span of the pack. That represents a 30% reduction in antidepressant prescribing costs.

There was a disinvestment in secondary care. Using the model of the atlas and going and visiting and ringing up people who were on that chart but who spent less on mental health and had better outcomes, we were able to copy bits of their model and come up with a way of taking £2 million out of the mental health budget.

The advantage for the mental health trust being they were going for a foundation trust status, and they were able to monitor that they were talking to their PCTs, that they had examined the efficiency of their model in detail, they had taken out costs, and that was a factor in enabling them to get foundation status.

And thirdly we were successful in getting resources to do a marginal analysis study. This was to look in much more detail at opportunities for taking money out and putting some of that money back in to better effect. But doing this through the structured programme led by a health economist.

So in summary, what we learnt from the mental health programme budget initiative was get the right people together and ask ‘how much does our area spend on each programme at the moment and what are the programme objectives? What activity does it generate and what results do they get? How do they compare with everywhere else? And what can we do better with those resources? The money, the people, the buildings and so on, between us’. 
Chapter 6 – Example of PBMA in Action: Diabetes

A second example of programme budgeting in action making a difference is taken from diabetes. The issue simply was this, that we had a budget in 2003/04 in Norfolk for diabetes test strips, and that budget was £2.25 million. A consensus statement had been published by a group of patients and primary and secondary care clinicians, indicating that for those patients who had stable type 2 diabetes they only needed to test twice a week.

We had evidence from our medicines managers in the field that there were many people with stable type 2 diabetes who were testing themselves up to 8 or 9 times a day and had been doing so for months and months and were clearly not at ease with diabetes and not making best use of a finite resource. So, we adopted the new recommendations as policy, and almost immediately this hit the headlines. “Trusts are letting diabetics down, vital testing strips are being rationed due to cost’ was the headline”.

The reporter’s coverage got it absolutely right, technically, the inch long strips were costing 14p each, patients said they often needed ten or more per week. Several PCTs were limiting patients with type 2 diabetes to only two. But what made this story interesting was the comment, heartfelt comment, from a local diabetes consultant which was this. “I think” he said, “PCTs are taking the health economics approach in trying to reduce expenditure, whereas they should take a more humanitarian position.”

And I think this introduces two popular misconceptions. One is that economics is about making economies, it’s not; it’s about trying to get all the money deployed. And that it’s in some way not a humanitarian position. Economists would argue it’s a utilitarian position, it is perfectly ethically justifiable; it’s about trying to get the greatest good for the greatest number.

This was the time, we’re talking about April 2004 now, when consultant Derek Wanless issued a report which encouraged us to have a “fully engaged scenario”. So I rang this consultant and said would you be happy for me to send a response, you have a look at it, if you’re happy with it I’ll send it to the paper, then you respond to my response and we’ll both say ‘what do your readers think?’ and we’ll see if we can get a discussion going about these tough choices with the population at large.

So on the 16th April, three days later, the newspaper ran my initial response. And the key paragraphs from that are that “there will never be enough money in the NHS to meet every need, let alone every demand, but there is enough to provide a decent service for everyone”. “Health economics is not about making economies or holding back money, it’s about being clear where the money goes, what good it does. What we’re trying to do is simply get the best outcomes from the money. It’s best to be open and honest with our NHS partners and the public about tough choices, that’s the humanitarian position. What do your readers think?”

Well we got five responses over the next couple of weeks that were printed in the newspaper. The first was from a Mr Cole in Cromer who said that rationing is very unfair. He made a very legitimate point that he, as a patient with type 2 diabetes, should be the one to determine how often to test, no one knows better than he and that the patient should make the call. And it’s good to get that sort of input, that’s exactly what we need to discuss, should the patient be the sole person who can arbitrate about how much resource should be deployed for their condition?

The second letter to come in was from a Mr Hutchinson based in North Walsham, who supported his colleague. In fact Mr Hutchinson is the local convener for Diabetes UK and he said that diabetes story was exactly right, the patient is the best person to decide.

And the next letter in was actually from a Mr Dean Bailey in New South Wales, Australia, who reads the local newspaper on the internet. His comment was it was quite wrong to cut costs on diabetes for people with type 1 diabetes. And of course that wasn’t what we were covering in our policy, so one of the constraints you will find if you engage in programme budgeting discussion with your public is some people get hold of the wrong end of the story. So we were able to reassure him that we weren’t talking about type 1 diabetes and that there was no restriction in that condition.

The next letter to come in was from a Mr Winstanley in Dereham for which we were very grateful, and he
Chapter 6 – Example of PBMA in Action: Diabetes (cont.)

was a patient with type 2 diabetes who said he had been testing very frequently, was only too pleased to stop testing so frequently and be more at ease with his diabetes, and his condition and to just get on with his life essentially. He asked the question ‘what practical purpose to these extra tests serve?’ So there we were, it was roughly 3 to 1 in terms of public response.

And the last one, well it really just made us smile. This was from a patient who in all good faith gave the contact details of a pharmaceutical company who could give excellent advise to anyone that wanted to know. So that’s what you get if you go for a public consultation. But remember this was Britain’s largest circulation regional newspaper, so a lot of people are beginning to think about the issues that arise from the deployment of a scarce resource.

And then we got the response as planned from the diabetes consultant, who made a very legitimate programme budgeting point. He said “Haven’t you just covered in your public health report that we have a very high anti-depressant prescribing level. Why can’t we disinvest in the mental health programme, buy fewer antidepressants and use that money to invest in the diabetes programme, on diabetes test strips for anyone who wants one?”

That is a very legitimate point; that is exactly what we are trying to get discussed in the programme budgeting approach. He asks the question “ Are you really getting the best health outcomes for the money?” Well our response to that is that we had other calls about our disinvestment that we were making in mental health and that we really wanted to see if we could absorb the diabetes programme within its existing envelope of resource.

And so on the 6th May, my response to his response went like this – “that given that we are starting from a £2.25 million investment in test strips, if we could reduce that sum to £2 million then that would put us in the middle of the reference range. By getting a better match between what was needed, what was requested and what was provided we would have £0.25 million to spend on diabetes nurses to support patient education, empowerment and confidence.”

And wasn’t that really what they wanted? Not to test more often, but to have the support they needed. We didn’t need to take any money out of the diabetes programme, we could simply redeploy it from testing strips into nurses. And that, to cut a long story short, is what we did.

Schematically this illustrates a really important point about the mismatch between need, which can be defined as the ability to benefit from the health care intervention, or, slightly more discretely than that, people who meet a stated entitlement from a policy, say from NICE guidance or in this case the Diabetes UK consensus statement. Then there’s demand, that’s what people ask for and is not necessarily the same thing and doesn’t overlap and then there’s the supply side, in this case the budget that’s available. And very often in health these don’t overlap exactly. So let’s take apart each segment of this and deal with it in turn.

First, there are people out here that make a demand that is neither needed nor supplied, and so they don’t get it. Like someone who is asking for more test strips than are within the protocol. What you do need is patient education and support so that’s where the investment needs to go.

Secondly there are some people who make demands that are met, by their healthcare provider or the diabetes nurse or doctor. But that is outside the guidance. It is wasting a scarce resource inappropriately and so what we need to address is professional education about what the guidelines say.

Up here at segment 3 there is an overlap between need and demand. Here a genuine need has been expressed, but it has not been met. It is outside the supply circle. Here again someone is inappropriately restricting someone to an intervention, in this case test strips, that they need. So once again we need professional education to make the professionals aware of what the guidelines say and to make sure they are within protocol.

Then we have section 4 out here. This is all the unmet need. These are people we may not even know they’ve got diabetes, or they may have had it for a long time with a mild condition and have fallen off the radar. So to address that problem we need to have case finding, disease registers, chronic disease management.

Some people are in section 5. These are the people whose need is met without them having to ask for it. People for example, vulnerable groups who live in a domiciliary care setting. We will go to them with practice nurses or visits to their GP, test them for their diabetes without them having to ask for it.
And very importantly is section 6 which is down here, the supply that is provided that is neither needed nor demanded. All that waste and hoarding that’s going on in bathroom cabinets up and down the country.

So schematically where do we want to be? We want the circles to overlap as best we can. That in essence is what commissioning is all about. That’s what world class commissioning is all about and that’s what programme budgeting and marginal analysis takes us to.

That transformation starts by reframing the questions. It’s all about asking new questions. So by regarding test strips as part of a diabetes programme, rather than a prescribing budget, we were able to change the discussion and change the decision.

So commissioning requires a sense of common purpose, and those would be the programme objectives. It requires a shared knowledge and it also leads to behavioural change. It’s an awful lot more than simply writing contracts and paying for services.

And just to conclude this, it was good to receive a follow up letter from another diabetes consultant in that same hospital in October 2006, who says “the main reason for writing is that in the programme budget you mention ambulance costs of £56,000. We’ve been doing some work with ambulance trust. It turns out they are treating 2,100 blue light ambulance call outs with diabetic hypoglycaemic emergencies, which was a tremendous shock to us as we thought that there we no hypoglycaemic patients being admitted. It does appear that most of these are being treated by the ambulance trust.”

So here was an example of using financial information to open up a whole new area of clinical activity that prompted a clinician to look afresh at the patient experience and take corrective action.
Chapter 7 – Economic Appraisal

This chapter is entitled economic appraisal, the science behind the art of tough decisions.

In outline, what we will do is this: we will use a cancer commissioning scenario to introduce some of the tools of economic appraisal, their strengths and their limitations and how to use them to make more robust resource allocation decisions.

Imagine then that you are part of a Primary Care Trust, a non executive team and your Primary Care Trust relates to a local cancer centre. At issue is the patient pathway or the pattern of treatment for a cancer – let’s call it cancer x – that we want to agree in the forthcoming contract with the local cancer centre. What we have to do is choose between a number of treatment options, but they have different costs and different outcomes and that is a fairly common decision making scenario that confronts Primary Care Trusts and practice based commissioners.

You don’t have to make your decision in a complete vacuum, the PCT has already issued a mission statement and it’s this, and it’s fairly typical of mission statements up and down the country: ‘Our mission is to secure the most effective, equitable and efficient services for our population within the resources entrusted to us.’

So let’s just unpick those three E’s and in a moment you’ll be prompted to decide which you think should dominate if there’s a trade off between them.

So the first E was effective, so generally speaking we want to prioritise those things which work best. I don’t think anyone would find that contentious.

Then the E for equitable, generally speaking we want to make sure that as many people as possible have access to the service, and certainly that people with equal need should have equal access. So that’s what we mean in this context by equity, and most people would find that non-contentious.

And thirdly we want to be efficient, that is we want to use the resources which we hold in stewardship, as a primary care trust, to best effect. So we want to get, as the saying goes, the biggest bang for our buck, we want to be efficient and get the maximum health gain from that fixed resource. And again people would find that non-contentious. However, it may be that something that is slightly more effective is so much more expensive that it’s neither efficient nor affordable and therefore not equitable. Or something that is equitable, in that it is affordable for everybody and everyone has access, may not be the most efficient deployment of resources nor may it be the most effective.

So we generally have a trade off. So here’s your first think point: pause the scenario and vote in your own head. Generally speaking which of these three domains do you think should predominate? Effectiveness, equity or efficiency? Once you’ve decided you can move on.

Let’s turn then to cancer x and find out a bit more. Let’s assume that it’s universally rapidly fatal if not treated, it’s really serious. Then the incidence of x, that is the number of new cases coming on the stream, is 300 new cases for our population, per year. There will be 300 new cases this year, there will be 300 new cases next year, 300 new cases the year after that. All of them will die rapidly if not treated. Then, let’s assume there are 3 possible treatment packages, and we’ll call them A, B and C.

Now that may be a combination of chemotherapy, radiotherapy and/or surgery, but it’s the package of treatment that has a cost attached. Next, assume for the purpose of the scenario that there is good evidence from the clinical trials of the typical outcomes and typical costs. So you don’t have to ask yourself I’d need more data on cost or outcome. What you’re given is the best we’ve got and assume that it’s robust. Next, just to give you a context, the budget from which we will be making our choices is £1.5 million. And that has been newly enhanced, the board has just uplifted that budget. So don’t in the first instance say I’d like more money. Try and reach a decision within the money that’s been set. And then finally just assume that after the first year any continuing costs that occur are no different from the population average.

Here then are the options:

Option A which is current treatment adds 3 years of life and costs £5,000.

Option B adds 5 years of life and costs £6,000.

Option C adds 6 years of life and costs £15,000.

Now, before you do any arithmetic in your head, just scanning that list, which leaps out at you as the most attractive option? Is it A because it’s the cheapest? Is it B because it’s the cheapest?
significant additional outcome in terms of years of life for a small increase in cost? Or is it C which is clearly the most effective albeit substantially the most expensive? Which one appeals to you?

Now let's have a look at the numbers. First of all, affordability and therefore population coverage our equity dimension.

Treatment A at £1.5 million divided by £5,000 per treatment would allow 300 people to be treated, and remember there are 300 new cases every year. In fact, treatment A is the existing treatment and that was why the PCT set the budget at £1.5 million. That makes current treatment affordable.

Treatment B which costs £6,000, divide that into the £1.5 million available, allows 250 people to be treated and for C the sums work out at only 100 people could be treated.

Now which looks attractive? Is it A which gives universal coverage? Is it B or is it C? Do I want to change my mind if I had voted B or C before? Just pause at that point and ask yourself do I want to change my option now?

Now let’s put all the different dimensions onto the same chart. You will see the first column lists the three treatments, A, B and C. The second column reminds us of the costs, which is the data you’ve seen before, £5,000 for treatment A, £6,000 for B, £15,000 for C. The third column gives you effectiveness, in terms of added life years per patient and that’s 3 years, 5 years and 6 years respectively. And then the fourth column is the equity issue from the affordability slide that we looked at before. Treatment A allows 300 people to be treated, treatment B: 250 and treatment C: 100.

Now we can look at the efficiency and on this slide it works like this. For treatment A, if 300 people each get 3 added years of life on average, we would have bought from our available budget, 900 life years for our population. For treatment B, 250 people each get 5 years on average and that yields us 1,250 life years and treatment C, 100 people getting 6 years gives 600 life years.

So there you have it, the numbers there are spread in front of you, another vote is required now. Are you attracted to A because that allows universal access and nobody goes untreated? Are you attracted to B because that is clearly the most efficient? It is generating more life years for the population as a whole from the resource that you were given. Or are you holding out for C? Because that is the most effective for the individual patient who receives the therapy. Now you’ve got all the detail, which would you go for - A, B or C if you were the non-executive on this PCT?

So the question now is what price equity? What price efficiency? What price effectiveness? Take efficiency for example. If you want to go for B and be efficient that is a perfectly defensible position, but you would have to decide what the eligibility criteria would be for the 50 people who don’t get treated, or the 250 people who do get treated. What might that be? Because this is a common scenario. We can’t discriminate on the basis of age alone, but we could perhaps prioritise on the basis of future life expectancy, if someone has other illnesses and is not expected to live more than 2 years anyway there’s no point going for a treatment that offers them 5 years of survival, for example.

But none of this is easy. Some people have criteria restricting eligible patients just to the trial data, so if the evidence from the clinical trial was just people of a certain age, who didn’t have certain co-morbidities (that means other illnesses), then you can say well those are the same criteria for inclusion in our treatment protocol, because that’s all the evidence shows. Some people say it well it depends on co-dependants. If it was a carer, or someone who had dependant children they should get priority. None of it is easy but if you go for option B you will have to be quite clear what price you are putting on going for efficiency and how you would handle the fact you are not going for the most accessible nor the most effective treatment. And a different set of arguments would pertain to treatment C if you went for that. Yes it’s the most effective, for the lucky few who get it, but what will you do for the majority who don’t get it? These are the questions which remain to be answered.

A brief summary then of what we’ve got so far. A is the most equitable and everyone has access, B is the most efficient and maximises total population health gain from a fixed budget, C is the most effective. A and B satisfy the utilitarian ethic, they are both examples of trying to get the greatest good for the greatest number, either everybody gets treated, or we have maximised health gain from a fixed budget. And that’s a perfectly legitimate ethical stance. C of course satisfies the Hippocratic ethic to which many health care professionals ascribe, if they’ve haven’t actually formally taken the oath, which is to do the very best for the patient in front of them. And that too is a perfectly defensible
Chapter 7 – Economic Appraisal (cont.)

ethical stance. Here what we are witnessing are two perfectly legitimate ethical stances meeting head on. This is the essence of commissioning and trying to be open and explicit about the trade offs we make when we take these tough decisions.

Just to bring this into the real world, here are some extracts from patient letters. This is a real life example of a patient who was denied a C type of therapy, very effective but prohibitively expensive, in favour of a what we had taken as a decision of a type B therapy, which was also what NICE had recommended as being the most cost effective. And the husband wrote in about his wife’s lack of access to type C therapy.

‘I make the observation that this policy appears to be totally lacking in any element of human compassion.’

We wrote back to this gentleman and explained in lay language the reasons behind our decision, both nationally and locally. He wrote back and it was a telling observation. He said:

‘There is only speculation that it may not be cost effective coupled with a strong desire to save money at all costs.’

Well the first half of that sentence is right, we don’t have precise data on cost effectiveness, but we do try to do the best we can with the data available. We certainly need to press for more evidence of cost effectiveness and we do need to build in a sensitivity analysis – what if our estimates are out by 5%, 10%, 20%, where does that take us? But the second element does need further explanation to the public that we serve. Economics is not about saving money, it’s about deploying all the money we have to best effect. We’re not trying to save it, we’re trying to spend it and we’re trying to spend it to best effect. But here’s a really, really important reminder, to us as clinicians involved in making tough decisions, and those of us in management positions too. And that is that the people who pick up the tab, the people who pay for any inefficiency in the system are the public and the currency in which they pay for our inefficiency is not pounds, shillings and pence, it’s avoidable distress, disability or even dying before their time. So the pursuit of efficiency is deadly serious, literally. And it’s an ethical imperative on all of us to try and be efficient with the resources that we commit.

Moving on, here is an extract from the MP’s letter where the previously mentioned gentleman wrote to his Member of Parliament, the Member of Parliament wrote to us. It’s a direct quote:

‘I hope that between you and the hospital something can be done for my constituent.’

I’d like to suggest that that’s not the most helpful comment and I suspect that it was written for the patient’s benefit and pushes the onus back on the Primary Care Trust. A more helpful comment from our elected representatives would be one of these:

Either ‘I will stand up in Parliament and push for more resources for the National Health Service, so that we can raise the bar so that everybody can get treatment B or C’

But being realistic that’s not going to happen and that’s not an infinitely sustainable position. What we would like MP’s to do is say:

‘Well the Primary Care Trust is doing exactly what we have asked it to do. We are asking it to be a responsible steward of public funds, we are asking it to be efficient and we are asking it to be equitable and we are asking it to take these decisions so that the greatest good is achieved for the greatest number and so I’ll support their decision. We must welcome the fact that people can get cancer treatments of A or B even if we can’t always get the very best.’

In 1999 the American health economist Alan Enthoven was visiting the United Kingdom to give the Rock Carling lecture and his topic was how the New Labour administration at that time, two years into it’s period of office, was getting on with the internal market and he shared a draft of his evolving text in which he was taking it as read that the job of PCT’s was to be maximally efficient. In
Chapter 7 – Economic Appraisal (cont.)

effect going for treatment B was axiomatic. That's what we should do. So I sent him this example and I said what would your answer be? And I asked his permission to use his reply for teaching purposes and he was kind enough to grant that, and this is what he wrote in reply:

‘Your example really made me think. The typical American reaction would be that everybody should have treatment C and we don’t accept that resources are limited. That got us to 13.5% of gross domestic product and rising. Reflection would drive me back to treatment A, it would be just too unfair to deny people any treatment at all in order to pay for a more effective treatment for some, but the attraction of the greater total life years is hard to pass up. I think I could face people and explain the choice of treatment A, but not the others.’

So there you have it, even a leading health economist finds it difficult to make these trades offs and in that particular instance there is a case to be made for universal access.

Some of you following this may quite legitimately be asking at this point, but hang on a minute, you’ve only been talking about length of life, what about quality of life, isn’t that important too? Well of course it is. This quote by Hubert Bland from his book ‘The happy moralist’ illustrates the point.

‘Length’ he said, ‘must be measured by sensation not yards. The English Channel is wider to someone who is seasick than the Atlantic is to someone who is not’

And the parallel with cancer care I hope is obvious, that it’s the quality of that enhanced survival that matters, not just its length.

So let’s look at that diagrammatically in the next slide. This slide looks at the relationship between length of life and quality of life for our chosen treatments – A, B and C – and we are now going to factor into our decision making the trial evidence about quality of life, as well as length of life. So along the horizontal axis we see length of life, on the upward axis we see quality of life. And that’s measured on a scale from 0, which is the worst possible quality of life, to 1 which would be the best imaginable quality of life, as couched in the patients own terms, in terms of distress, disability and getting on with daily life and so forth. And there are a number of instruments which allow you to do that.

So let’s start with treatment A, let’s assume that on average over the 3 years of that survival, people experience quality of life which they would rank at 0.7. Of course they will be ups and downs, the day after the operation, the day before the chemotherapy and so forth, but on average 0.7 for 3 years.

Now look at treatment B. Treatment B gives added survival but there is a price to pay in terms of quality of life. That’s rated by patients at 0.5 on average over the 5 years.

And now look at the curve for treatment C. That is more expensive but it offers a much better quality of life, 0.8 for the average duration which stretches out to 6 years.

Before we do any more sums or arithmetic, where is your inclination now, now that we’ve factored in quality of life? Which treatment would you go for as a matter of policy? A, B or C? If you were a B are you more attracted to A now because of the quality of life or are you more attracted to C?

Let’s do the arithmetic. Here what we are doing is moving from a cost effectiveness analysis when we were looking at a single natural unit of outcome – length of life – to a more complex measurement of outcome, which we call cost utility analysis because we’re looking at quality adjusted survival. Further on in this scenario, this gives us the power to look beyond cancer to other sorts of treatment when we make other trade offs. But let’s just work it through for our 3 treatments. In the second column you see length of life multiplied by quality of life, so treatment A is 3 years times 0.7 quality of life - that yields 2.1 quality adjusted life years. These are the ‘QALYs’ that you may have heard of, that’s all that ‘QALYs’ mean. Treatment B 5 years at 0.5 quality gives you 2.5 quality adjusted life years and for treatment C it’s 6 times 0.8 which is 4.8 quality adjusted life years. Now look at the final column and the simple arithmetic there. Remember the price, the affordability of these treatments hasn’t changed a jot, all we know now is about quality of life. But if you multiply it out, for A 300 people getting 2.1 QALYs gets you 630 quality adjusted life years that you’ve bought for your population. For treatment B it works out at 2.5 times 250 which is 625 and the sums for treatment C work out at 480 QALYs for the population.

There’s another vote coming on – which would you go for now? A, B or C? A not only gives you universal access, it gives you the best population health gain. B is slightly better per patient in terms of QALYs but it’s no longer yielding the greatest.
**Chapter 7 – Economic Appraisal (cont.)**

QALY life gain for the population. Though it’s so close in number it’s effectively the same as treatment A. And treatment C is very much better, it’s narrowed the gap in terms of population health gain, but it’s still offering far from universal access and it’s not allowing maximum population health gain. Which would you go for?

Having run this scenario with numbers of different groups – sometimes chiefly clinical, sometimes chiefly managerial, often with members of the public and often in mixed groups – generally speaking the majority will go for treatment A at this point, because it offers universal access and it is the most population efficient. However, it may be the case, and let’s just make it so for this scenario, that NICE has ruled that treatment B is the treatment of choice and let’s also assume that there’s no new money available to go with that ruling. The PCT, let’s say, votes for an extra 20% in order to make option B universally accessible. However, where is this money to come from? Let’s assume that the board takes it from the chiropody budget, this is not an entirely imaginary scenario – I have seen this done but the economics weren’t worked through. What we can now look at is a marginal analysis, this is a very common scenario in health care commissioning. What we’re doing is looking at the added benefit and the added cost over the existing status quo. If we have the money to spend we can move people from treatment A to treatment B, the marginal cost, the extra cost per patient is just £1,000, so instead of £5,000 we’re spending £6,000. The marginal benefit per patient is going from 2.1 to 2.5 QALYs so they’ve gained 0.4 QALY per person. The number of extra patients we can afford to treat if we put in £300,000 and the marginal cost is £1,000 each is 300. In other words we can put all 300 through the program now. And we will have made a population QALY gain of 120.

Now let’s just have a look at the opportunity cost, that is the opportunity forgone once resources have been committed in one way and not in their original purpose which in this case was chiropody, and let’s assume we’re talking about chiropody for the elderly. The cost per person for this scenario let’s assume is £500. That might be ten treatments at £50 each spread over a few years. Now having your feet done doesn’t add years to your life directly, so let’s assume there’s no added survival benefit. But let’s assume these older people had another 10 years of life in which to enjoy the added mobility that that foot care had given them so they can get down the pub, they can visit the post office, they can have a bit of a social life. And let’s assume that the quality of life gain is 0.05 per year, very small but tangible. Multiply that up and you get 0.05 quality of life times 10 years and you’re getting 0.5 QALYs per case. Multiply through and you find that the opportunity cost of £300,000 taken out of chiropody, would actually be 600 cases and 300 QALYs. Whereas having put it into cancer as our previous slide only 300 people were benefitting and we were generating 120 QALYs. Maybe, just maybe, the money is better left in chiropody because it is doing more good for more people. That is the choice that now confronts the PCT and that is the whole purpose of putting some science behind the art of making tough choices.

In summary what we have done in this scenario is considered the following economic concepts, the following tools in the health economists toolbox. We’ve looked at opportunity cost, the benefit forgone when resources are deployed in a different way. We’ve looked at effectiveness, efficiency and equity and the trade off between them. We’ve looked at cost effectiveness analysis when we were looking at added years of life for a given amount of investment. We could equally have been looking at change in blood pressure, or reduction in tumour size or other measures, simple single measures of effectiveness. And then we went on to do a cost utility analysis, we looked at quality adjusted survival and that helped us not only change our minds in the cancer case but it also allowed us to look at the difference between a cancer investment and something completely different which was a chiropody investment. And despite its flaws and faults that is a great advantage of cost utility analysis and that’s what it’s for. And lastly we considered the importance of the margin, what’s the extra benefit and the extra cost when we move something into a service or what have we lost at the margin when we take it out of a service. The concept of the margin is very important in programme budgeting and marginal analysis because it’s all about moving away from the status quo, doing a little bit more of something or a little bit less of something.

And finally, in conclusion, here are the learning points:

There is a trade off between effectiveness, efficiency and equity. World class commissioning requires us to confront these and be honest and open about them. To have an audit trail of why we decided what we did.
Economic considerations help lay out the choices more explicitly but they don’t tell us, and they should never tell us, what to do. They are not a substitute for thought, they are not a decision making tool, they are a decision informing tool and we can make much more informed decisions, much more explicit and open and honest decisions by using economic techniques. But never use economics alone to tell you what to do.

And finally there is no avoiding value judgements. A lot of the quality adjusted survival is based on people’s values of quality of life. These are not precise measurements, they are an attempt to quantify the unquantifiable. And because there is no avoiding value judgements, we as commissioners need to consult with the public and the providers and just do a reality check before we make our final decision.
Hello, I'm Andrew Jackson, I'm from the Department of Health and I'm going to outline how to use both the programme budgeting spreadsheet and the programme budgeting atlas.

In this chapter I'll show the Programme Budgeting Spreadsheet and in the next chapter I'll show the Programme Budgeting Atlas.

Let me start first with some definitions. What is programme budgeting?

Well programme budgeting is a retrospective appraisal of resource allocation broken down into 23 programmes of care. These programmes of care are based around international classification of disease.

So I collect data from PCTs every autumn looking at how PCTs spend their allocation in areas such as cancer, Cardio Vascular Disease (CVD) or mental health. Once we PCTs have assimilated data, which shows how they spend their allocation, PCTs can use this information to work out how they want to spend their in future allocations.

Moving money from one programme budgeting category to another can be facilitated by using a technique called marginal analysis, which is a type of cost benefit analysis. For example, if you move money from one programme to another do you get a better return for your investment in terms of Life to Years or Years to Life?

There are 23 programme budgeting categories based on ICD 10 classifications. The top 20 are well known, such as cancer, CVD and mental health. Though we have three add ons.

Category 21: healthy individuals. Category 22: Social care needs – that's PCT spend on social care in this instance. And finally category 23, that wonderful 'other' condition. In programme budgeting it's mainly primary care spend, so the spend on GP's pay for example.

In the latest iteration of the world class commissioning competencies, programme budgeting features at level 2, 3 and 4 at in competency six.

So level 2 requires PCTs to use programme budgeting for strategic investment and disinvestment initiatives.

Level 3 requires PCTs to develop programme budgeting or equivalent methodologies as a way to demonstrate whole system approaches to investment and disinvestment.

And level 4 requires a mature programme budgeting approach to identify key priority care pathways, disease groups or disinvestment plans for the next ten years.

How the spend data is compiled. All PCTs send the Department of Health information on the programme budgeting expenditure every autumn.

To help PCTs do this there are some building blocks. PCTs therefore estimate their expenditure using returns from their providers for their admitted patient care: returns from their providers for non-admitted patient care; returns from the business services authority, which you may know better as the PPA, primary care prescribing. PCTs use their own data for community care, for example, using surveys, and importantly any expenditure on GMS or PMS goes to category 23, other.

This slide shows PCT programme budget expenditure in 2007/08. Out of total expenditure of £93 billion the highest spending programme budget category is mental health with a spend of over £10 billion. Mental health has consistently been the highest spending programme since we started the collection in 2003/04 and is consistent for international data as well. The second highest spending programme is problems with circulation with a spend of £7.2 billion. The third highest is cancers and tumours with a spend of almost £5 billion.

Programme budgeting expenditure data is available on the Department of Health’s website. The latest data was published on the 16th July 2009 and future updates will also be posted on the same site.

For the latest spreadsheet, whilst the format is similar to previous years, we have made a number of improvements. For example, we’ve improved the presentation of the headline data; we’ve made it easy to hide or un-hide sub-categories; we’ve improved navigation around the spreadsheet; there are additional primary and secondary care split charts; there are additional drop down menus, for example, population basis cluster expenditure type; we’ve made the raw data simpler to extract; and spreadsheets are now set up for easy printing.
We also publish data at cancer and CVD network and the 2009 versions were posted online on the 30th September 2009. The programme budgeting spreadsheet which I’m going to demonstrate next is available on the website at www.dh.gov.uk/programmebudgeting.

The contents worksheet outlines what’s included in the programme budgeting spreadsheet and includes quick links to each of the worksheets. The guidance on data use worksheet provides information about the data included in each of the following worksheets.

The definitions worksheet provides information about the type of expenditure included, for example showing what expenditure an older population needs. Provides information about distance from target and also information about the population basis and PCT clusters.

A PCT expenditure worksheet is the first worksheet which contains data. At the top of the worksheet there’s a tab which allows you to select your PCT or PCT of interest. So clicking on Sunderland PCT, this worksheet shows how Sunderland PCT spent its allocation over the last 4 years. Should the worksheet not update sometimes it’s necessary to click on the Calculate Now tab. Column G shows the latest data and shows how this PCT spent its allocation in 2007/8. So for example, in 07/08 this PCT spent £3.6 million on infectious diseases, £27 million on cancer, £70 million on mental health and £43 million on problems with circulation.

From 06/07 we introduce sub-categories and clicking on the sub-categories icon will reveal these.

Whilst there aren’t sub-categories for all programme budgeting categories, some such as cancer has a wide range of sub-category data. This is helpful because you can link the sub-category expenditure data with outcome data.

Programme 10, CVD, has 3 sub-categories plus other. So it has data on coronary heart disease (CHD), cerebral vascular disease, problems with rhythm and other.

Sheet four is the PCT benchmarking worksheet. Choosing another PCT provides another set of data. The second drop down provides data on whether you are comparing spend on your own population, with or without a distance from target adjustment. PCTs which are under target allocation will spend less money per programme budgeting category and vice versa.

The next drop down provides denominators for PCT by population. So there are three options here, raw population, Hospital and Community Health Service weighted population or our preferred denominator, unified weighted population. The next two drop downs are based on PCT clusters. These are undertaken by the Office for National Statistics (ONS) for us and we recommend using option two which clusters PCTs into twelve groups.

Row 17 shows the PCTs population in terms of the resource allocation weighted population. So Blackpool PCT shown here had a population in 07/08 of 167,000. In this year it was over its target allocation of £534 million and 0.23% above its target allocation.

Column J shows spend per programme budget category, but this time per 100,000 weighted populations. So this PCT spent £20 million per 100,000 weighted population on mental health.

Column K shows PCT rankings from 1 to 152. The highest spending PCT has a ranking of 1 and the lowest spending PCT has a rank of 152. So in this instance, Blackpool PCT is one of the lowest PCTs in the country in terms of its expenditure on cancers and tumours. It is relatively high in mental health being the 37th highest in the country, but it’s the highest in the country for CVD with spends of over £22 million.

To the right is information on cluster averages and ranges and whole SHA expenditure for the 4 years.

Sheet 5 provides our first chart which shows across 23 budget categories how the PCT spent it’s allocation over the last 4 years. Programme 2 is cancer, programme 5 is mental health, programme 10 is CVD and programme 23 is other. In this case Blackpool PCT has recorded a large increase on its expenditure on CVD and has recorded a large decrease in its other expenditure.

Chart 2 in worksheet 6 compares how a PCT spends its allocation compared to similar sorts of PCTs. The selected PCT is shown as a yellow bar, cluster PCTs are shown in grey. So, for the first two years, Blackpool PCT spend less than its cluster PCTs; in 06/07 it spent slightly more than its cluster PCTs; yet in 07/08 it was significantly less than similar PCTs per 100,000 weighted population.

Chart 3 on worksheet 7 provides similar sorts of information, but by cancer sub-category.
Chapter 8 – Programme Budgeting Spreadsheet (cont.)

Chart 4 on worksheet 8 provides a scatter plot of how all PCTs spend their allocation. The selected PCT is shown in green, in this case Liverpool PCT. Its similar PCTs in the ONS cluster are shown as purple triangles and all other PCTs are shown as blue spots. There’s a wide variation across PCTs from the highest to the lowest, and similar PCTs spend their allocation right across the board. So some PCTs in this cluster are quite low spenders, whereas Liverpool PCT is the second highest spending PCT within its cluster.

Worksheet 9 introduces a 5th chart which shows a spider diagram. The PCT selected is shown as a dark blue line, similar PCTs are shown as the blue shaded area, the further away from the centre, the higher your spend. So for example on programme 11– problems of the respiratory system – Liverpool PCT is spending more than its cluster PCTs whereas in programme 7 – neuro – its spending less than its cluster PCTs.

Chart 6 on worksheet 10 provides us with the same information but at sub-category level.

The next two charts take the same information which was provided in the spider diagram’s but puts them in financial terms. So we’ve selected Manchester PCT here, which shows that for programme 5, which is mental health, their spend was £2.5 million more per 100,000 population than comparable PCTs.

Chart A on worksheet 12 multiplies through by population to show actual expenditure variation. For example, Manchester PCT spent more than £17 million more on mental health than we would expect. However on programme 15 it’s spending almost £10 million less than we would expect compared to similar sorts of PCTs.

Worksheet 13 simply provides PCT ranking information.

Sheet 14 provides information on whether PCTs spend their allocation in primary or secondary care, and sheets 15 onwards present information graphically.

The programme budgeting spreadsheet has the following strengths:

It’s accessible to all, including the populations PCTs serve.

It’s increasingly simple to use and manipulate and it provides comparisons in year and over time.

After a relatively short time using this spreadsheet PCTs will be able to understand how they spend their allocations over the 23 diseases and their respective sub-categories; how and how much their expenditure decision patterns compare with PCTs nationally, locally or with similar characteristics as defined by ONS; and how their expenditure distribution has changed over time.
Transcript

Chapter 9 – Programme Budgeting Atlas

In this chapter I’ll show you how to use the Programme Budgeting Atlas.

The Programme Budgeting Atlas is provided on our behalf by the National Centre for Health Outcomes Development under contract to the Information Centre for Health and Social Care as part of the compendium of public health indicators.

The atlases link programme budget expenditure as presented in the spreadsheet with an array of outcome data. By using mapping software, bar charts and correlation plots the atlases provide an illuminating and user friendly way of analysing and presenting data.

The latest iteration of the programme budgeting atlases were published in Autumn 2009 and these atlases are available only via an NHS net connection from the following website: nww.nchod.nhs.uk. The atlases include a vast array of data configured in terms of expenditure as per the programme budgeting spreadsheet. Output data, be that primary care prescribing, for CVD, the percentage of low cost statins, admissions data, average length of stay data, bed days, all split for total admissions, non-elective admissions, elective admissions or day cases as well as day case rates.

The outcomes data includes mortality, both for total populations or for under 75’s in terms of years of life lost. Prevalence data are included from the quality and outcomes framework. The cancer incidence data are available. QOF data for blood pressure control or cholesterol control are provided. From Hospital Episode Statistics (HES) there are data emergency readmissions or deaths within 30 days of admission.

This is an example of the single programme budgeting atlas, this time for CVD. To load data click on ‘indicator’ below the Information Centre logo and then select the data you require. First of all let’s load some expenditure data so I’m going to click on ‘Programme Budgeting Expenditure: Circulation System: Millions of pounds per 100,000 unified weighted population for the latest financial year’.

On loading the data a map of England appears, so we’ve selected CVD per 100,000 weighted population using the PCTs own population, taking into account lead / commissioner arrangements. Data are represented in quintiles, with darker colours for higher values, in this case expenditure. If I click on a PCT, for example Northumberland Care Trust, it highlights blue in the map, but on the bar chart on the right hand side it shows the distribution of expenditure across all 152 PCTs and highlights Northumberland Care Trust spend in a vertical blue line. If you click on the bar chart itself it highlights the PCTs, for example, the highest spending PCT on CVD is Blackpool, the lowest spending PCT is the City of Hackney Teaching. By clicking on filter you can look up regions or ONS clusters. For example if I click on Strategic Health Authority, London, I now get a view of PCTs within the London SHA and the bar chart shows the distribution. So once again we will have Camden as the lowest spending PCT, and the highest spending PCT is showing here as Westminster. Again, you can click on the map to find out the distribution on the bar chart.

You can also filter in terms of ONS cluster. If I click on ONS area group, I can click on ONS area group, Coastal and Countryside, and maximise the map. I can see PCTs within the Countryside cluster, for example, Cumbria, North Lancashire and again Blackpool.

In the bottom right hand side there’s a table that shows England averages and also SHA averages, and hovering over these shows on the bar chart the position of the SHA.

There’s a vast array of outcome data on the programme budgeting atlases, for example, let’s start with mortality data. If I scroll down, clicking on mortality for all circulatory diseases, click on directly age standardised for persons rather than males or females. Data are 3 year moving averages for outcomes data, so it’s 2005-2007 at present. This time a high mortality is shown by a dark red colour, a low mortality is shown by a lighter colour. So there is a concentration of high mortality in the trans Penine regions, for example and in the north east. As well as having a bar chart we also had confidence intervals. So for example if we click on the highest mortality which is Blackburn and Darwin you can see a confidence interval clicking in here.

There’s also an array of input data in here, so for example we’d look at FHS prescribing data. Click on the latest data available, this shows prescribing on CVD expenditure for each PCT per head of 100,000 weighted population. And again the bar chart shows the variation in prescribing across the programme budgeting category. From Tower Hamlets at the bottom, right through to Tameside and Glossop at the top.
We’ve taken one of the better care, better value indicators for low cost statins as part of the prescribing for CVD, here shown Q4 2007/8 with a high percentage represented as a dark colour, a low percentage a light colour. For example, if you look at North West England there’s a lot of people PCTs have a low percentage of low cost statins, whereas if we look at the bar chart Northumberland Care Trust have managed to get a rate of 84.6%, the lowest being Bury PCT at 48.5%.

We’ve loaded a lot of information from hospital episode statistics in terms of admissions, length of stay and bed days.

So clicking on hospitalisation it gives me lots of options for admission data, so I can show all admissions for age standardised population for CVD. Again a high admission rate is shown as a dark colour and a low admission rate is shown as a light colour, and the variation is over threefold from the lowest PCT, which in this case Herefordshire and the highest PCT which again in this case is Blackburn with Darwin. Admission data can be split into elective and non-elective. So first of all let’s look at elective admissions. We’re getting a very similar picture here in terms of variation. If you look at Cornwall for example its got a very high elective admission rate, as has Norfolk and parts of North West England. You also get non-elective data. Looking at the 2007/08 year, you get a slightly different distribution here and picture for non-elective admissions. The lowest PCT in the country this time being Plymouth, the highest this time being the Heart of Birmingham PCT.

They also provide data on length of stay, again looking at circulatory system problems, you can get length of stay for all admissions, your range being from around 2 ½ days to over 4 days, with Luton having the highest length of stay for all admissions and Eastern Coastal and Kent having the shortest length of stay for all admissions. Yet again you can split this into elective and non-elective. Let’s go for elective admissions, age standardised, all ages, 2007/08, with relatively short length of stay for elective admissions ranging from North East Lincolnshire through to Stoke on Trent and Staffordshire. For non-elective admissions the averages are somewhat longer with quite a range here, with Solihull with the lowest length of stay and in this case quite an outlier, the North East Lincolnshire Care Trust with length of stay 5.9 days.

Using QOF data we are able to provide quite a lot of process indicators. So for example we can check how well a PCT is doing at controlling the blood pressure of its patient of CHD. And here you have a range with Camden at the very bottom there with 86% through to Doncaster PCT at 91.6%.

There’s also an array of prevalence data available from the quality and outcomes framework. So first of all let’s have a look at prevalence data from coronary heart disease. And again there’s the distribution of prevalence of coronary heart disease from QOF. PCTs in the North have quite a high prevalence, PCTs in London tend to exert much lower prevalence. And finally from prevalence, if you have a look at prevalence from stroke, a similar picture emerges of a higher prevalence in the North and parts of the South West but relatively low prevalence in parts of Central London.

This is an example of the double atlas which allows you to load the exactly same data and correlate them accordingly. So first of all let’s load some spend and outcomes data. Again we’re in the CVD atlas, this time it is spend for 100,000 weighted population 2007/08. And here the data have loaded on the X axis. If we now load the mortality data, scroll down, this is mortality for all circulatory system problems.

Again all persons, directly age standardised, 2005-2007 moving average. On the right hand side we have a correlation plot, so on the X axis we have mortality increasing, on the Y axis we have expenditure increasing. If you’re in the bottom left hand corner you have a low spend and you have a low mortality. This time it’s Kensington and Chelsea PCT. Moving to the right we have increasing mortality but still low spend, and we have Islington PCT, Heart of Birmingham PCT, Manchester PCT and Blackburn with Darwen PCT. So they have relatively low spend on CVD but relatively high mortality.

These PCTs may want to consider if they should increase their spend on CVD to improve their outcomes. At the top right we have PCTs with a high spend and a high mortality, in this case Blackpool PCT, so hopefully in time their expenditure on CVD will bring their mortality rate down.
Having identified a PCT with a high mortality and low spend it’s important to dig down to find out what’s going on. So taking the example of Heart of Birmingham PCT we notice that they’ve got a high mortality yet appear to have a low spend. Let’s triangulate the different sources of data in the programme budgeting atlas. Let’s first of all start with FHS prescribing.

So first of all let’s have a look at both expenditure and the volume of prescribing. Loading first the expenditure data, loading second the volume data. Now Heart of Birmingham had a low spend, and if we look at their expenditure and volume on FHS prescribing for CVD we see that this is quite low. With volume being on the Y axis and expenditure being on the X axis here. We can also check how well they are doing on low cost statins and the easiest way to do this is use the single programme budgeting atlas. Loading the percentage of low cost statin use and clicking on here, we see Heart of Birmingham is actually performing very well on low cost statin use, so that is not a problem.

Next thing to do is look at some of that admissions data, so back to the hospitalisation data, look at elective admissions first of all, 2007/08, then look at their non-elective admissions as well. On the Y axis we can see Heart of Birmingham’s non-elective admission rates, and Heart of Birmingham has one of the highest non-elective admission rates for CVD in the country. But on its elective admissions on the X axis it’s towards the centre of the distribution.

The next indicator to look at is average length of stay. So if again you look at elective and non-electives, first of all we’ll load their electives and then we’ll load their non-electives. Clicking on the map to pick up the data. So the correlation plot here shows Heart of Birmingham’s length of stay for elective and non-elective admissions and they are in the middle of the distribution for both indicators.

I’m now going to turn to the QOF data to look at the prevalence of coronary heart disease and also the prevalence of hypertension. Again using the map to locate Heart of Birmingham Teaching PCT, the X axis has prevalence for coronary heart disease, the Y axis has prevalence for hypertension. Now despite Heart of Birmingham’s high mortality rate, it appears it has a very low recorded prevalence for both diseases.

For every indicator, if you’re not sure what the indicator is showing, if you just click on the tab here and it will bring up a word document which explains exactly what is included within the indicator.

The programme budgeting atlas shows graphically how PCTs spend their allocation, it provides back up information in terms of output data, whether that be admissions, length of stay, bed days or prescribing. It also provides an array of outcome data, whether that be mortality, prevalence or incidences.

The challenge now is for you to go and triangulate all of these data for each of the programme budgeting categories for your PCT to understand how you spend your money and what
Chapter 10 – NHS Comparators website

Hi, my name’s Kathryn Knight. I work at the NHS Information Centre in Leeds. I’m Senior Information Analyst there and I work on the NHS Comparators website, which I’m going to be taking you through today. This website is free for the NHS to use and it supports practice based commissioning, as well as programme budgeting and marginal analysis.

NHS Comparators is a free analytical tool for the NHS to allow them to compare themselves on a range of indicators at GP Practice level. Once you have received a username and password (which you can get from e-mailing enquiries@ic.nhs.uk) you need to enter it here, accept the terms and conditions and you can then enter the site.

The home page gives you the latest information about comparators included in the latest release and any areas of the data with issues that you need to be aware of. You can also access some online tutorial videos from this page.

You can view data by provider (which drills down to NHS trust level) or by commissioner (which drills down to GP practice level). We will focus on the commissioner view as the data here can help to support practice based commissioning. Data is available for the last 4 years, broken down by quarter. We aim to be 4-6 months out of date. To view all available comparators you can expand the high level groups here.

Comparators cover areas such as maternity, inpatients, outpatients, QOF (including prevalence, hospital admissions and reported vs expected prevalence), GP survey data and prescribing information.

This is a decile bar. If all 10 blocks are coloured then the selected organisation is in the highest 10% of peer organisations for this comparator. If one block is coloured then it is in the lowest 10%. This can help you decide which comparators to investigate further.

Different ‘report sets’ are available which group together comparators that cover similar areas. For example if you select diabetes, all comparators related to diabetes will appear. A cost or activity view is also available, and depending on which you have selected, different comparators will be available to view.

If we select the total admissions comparator, you can see what data you are presented with. The bar chart shows the age/sex standardised rate of admissions per 1000 population for the selected PCT. You can then select a GP practice which will show data for all practices within that PCT. A table containing the data is also displayed under the chart.

There are various filters available to allow you to drill down further into the data. You can split the data by programme budgeting categories or consultant specialities. This then allows you to view activity by the individual programme budgeting categories, to highlight if you have a high number of admissions for particular clinical condition, again using the example of diabetes.

You can download all of your data into Excel at any stage for further analysis by clicking here. You will then get a workbook with the data for each practice, the table breakdown, chart image and query parameters.

We will now return to the list of comparators and look at another useful area of the website where you can look at the reported versus expected prevalence ratios for various QOF conditions. Again we will use the example of diabetes. The ratio shows the number of reported cases of the condition for every expected case. So in this example, 0.67 reported cases for each single expected case. The numerator and denominator for his comparator only cover those aged 17 and over.

If you have any questions about any of the comparators, their sources, definitions or the methodology used, you can look here in the definitions tab, or you can view the knowledge base where information is divided into chapters and the user guide is also available here.

To customise NHS Comparators you can use the features on this tab to save queries you want to view on a regular basis, to create a default setting for geographical areas, and to create your own groups of PCTs or practices, so that you can compare only the areas you are interested in.

Finally, if you would like to contact us about any questions or comments you may have please e-mail us at enquiries@ic.nhs.uk or call us on 0845 300 6016. Thank you.
Transcript

Chapter 11 – The Challenge

So to sum up this module there are a few final thoughts and points to take away.

In order to do programme budgeting and marginal analysis effectively we need a number of things. First of all of course we need data, and by data we simply mean information which has numbers in it. We need data on the inputs side, how much resource is there? Data on the outputs side, what are we getting as a result of that investment? And of course data on the outcomes, what is the population health gain? But data alone are not enough, we also need evidence.

Now evidence could be summarised as the appraised opinion from published journals and informed sources, such as the appraisals which come out of NICE for example which will allow us to mount a clinical case for change because quite rightly clinicians and their patients won’t want to change unless they can see that this is proven to be safe and effective.

But here too data and evidence themselves are not enough, we also need the narrative, we need to know patient stories, we need to know what matters to them, we need to know what their experience of care has been, we need to know what their agenda is, because where else will we go looking for data and measurement, where else will we start seeking the evidence.

And putting those three together, the data, the evidence, the narrative, we need to be operating in a culture where it’s alright to innovate and experiment, even to take a few risks as long as they are proportionate risks, because we need a culture where leadership is encouraged, not followership but leadership and programme budgeting and marginal analysis is a tool for leaders.

So there you have it, we’ve given you some examples of how to do programme budgeting and marginal analysis and what we would now like to leave you with is a challenge. Whether you’re a commissioner and responsible for the deployment of funds in a Primary Care Trust or a practice based commissioning group or whether you’re on the delivery side of health care responding to the requests and wishes and aspirations of commissioners these challenges are the same, and there’s just three. For any given programme, be it respiratory or mental health or circulation can you answer these questions?

First, are you improving health and reducing inequality in your chosen field?

Second, can you point to the fact that you are a responsible steward of public funds and indeed the public trust? Do you know how much money is going into this area of health care? And can you give some assurance that you’ve looked at value for money and that you know that it’s been deployed well and that if you had more resource where you would spend it and if you had less resource where you would take it out first?

And thirdly, can you point to engagement? Whatever your plans are can you show that other clinicians who engaged in that pathway of care know and understand where you’re coming from and that the public you serve also know and are engaged with those plans.

So there you have it, this is the end of the module programme budgeting and marginal analysis. It’s always better to light a candle than curse the darkness, so go out there and light some candles and who knows, you might even light a bonfire. Enjoy.