

# Programme Budgeting: Factsheet

## Tower Hamlets Joint Strategic Needs Assessment 2010-2011

### Executive Summary

- Programme budgeting (PB) is a method for separating healthcare spending into categories for analysis. PB data has been collected by the Department of Health since 2003/04 in 23 disease-based categories. This data can be used to benchmark spend against other areas, and to look how spend has changed over time.
- There are several tools that allow us to benchmark spend and outcomes. In Tower Hamlets, there is a higher spend and significantly poorer outcome for cardiovascular disease and cancer, which may mean that more investigation is needed into how efficiently money is being spent in these areas.
- PB makes a powerful case for how demands are made on the NHS, for instance Tower Hamlets has had the highest spend in England on trauma and injuries for 2 years, this equates to roughly £10 million a year more than expected.
- The main method for working with programme budgeting data is marginal analysis (PBMA). PBMA looks at the marginal benefits that can be made by moving investment to more cost effective programmes or interventions. To use PBMA successfully there needs to be a well defined project that is aligned well with the commissioning cycle, with high level engagement.

### Recommendations

- More needs to be done to demonstrate the value of programme budgeting data to commissioners and people in finance.
- Programme Budgeting should be used more to identify areas where increased spending is not achieving better outcomes.
- Programme budgeting data can be used alone, or can be used to identify areas where a deep dive is necessary to identify why outcomes are poor.
- We should look at the feasibility of using programme budgeting at a lower geographical level.
- If we could look at programme spend by different groups, such as gender, deprivation level, ethnicity, this would be illuminating, although may be difficult to get data for.
- PBMA (Programme Budgeting & Marginal Analysis) can be carried out to see how investment can be moved at the margins to make the healthcare system more efficient.

### 1. What is Programme Budgeting?

Programme Budgeting has its origins in US Defence Budgeting in the 1960s; it was developed as a way of defining costs and outcomes to stop spending on defence projects from getting out of control. Programme budgeting is a way of tracking expenditure in different programme categories. The Programme Budgeting approach helps healthcare commissioners to think about the following questions:

1. Can we say we are investing in health, not simply paying for health care?
2. What are the aims/objectives for each programme we invest in?
3. Recognising that resources are limited, can we redeploy what we currently have to better effect, say by using marginal analysis?
4. How will we evaluate progress and stay on track (activity, spend and outcome) during the financial year ahead?
5. Are we achieving allocative efficiency (spreading investment correctly across programmes) and technical efficiency (spending money correctly within programmes)?

All PCTs in England have submitted an annual programme budgeting return to the Department of Health since 2003/4 which gives spend separated into 23 main categories, which makes programme budgeting data a useful resource for benchmarking or comparing how spend compares with other areas. The data are usually published about 10 months after the end of the previous financial year, for instance the 2009/10 data was published in January 2011. The national programme budgeting data allows for cross sectional and time series comparisons, at England, SHA and PCT level. The programme budget categories map directly to HRGs and to ICD 10 codes. The categories that are used for the national NHS Programme Budgeting data are not the only possible categories, and some local programme budgeting exercises or examples from different countries have used different categories. The national categories are disease group based, but programme areas could also be client group based like looking at services for elderly people or people from a certain ethnic group, or could be service based, for instance looking at child health services.

The nationally produced tools look at Programme Budget at PCT level, but NHS Comparators also has data for admissions and prescribing that goes down to practice level.

The main 23 programme budgeting categories used by the Department of Health are shown below. These are partly based around the ICD 10 chapters. There are also further subcategories that have been added over the years, for instance specific cancers.

<b>N</b>	<b>Description</b>	<b>Expanded Description</b>
1	Infectious Diseases	All disease caused by infectious organisms, excluding tuberculosis and sexually transmitted infections
2	Cancers & Tumours	All cancers and tumours, malignant and benign. Including those with suspected or at risk of developing cancer
3	Blood Disorders	Disorders of the blood and blood forming systems
4	Endocrine, Nutritional and Metabolic Problems [ENM]	Disorders of internal metabolism and its regulation
5	Mental Health Problems	Problems of mental health including patients with Alzheimer's syndrome
6	Learning Disability Problems	Patients where the primary issue is the problem of learning disability
7	Neurological System Problems	Problems relating to the Neurological system
8	Eye/Vision Problems	Problems relating to the eye and vision
9	Hearing Problems	Problems relating to the ear and hearing and balance
10	Circulation Problems	Problems relating to the heart, and the circulation of blood in central and peripheral vessels
11	Respiratory System Problems	Problems of respiration, including tuberculosis and sleep apnoea
12	Dental Problems	Problems due to the teeth, including preventive checks and community surveys
13	Gastro Intestinal System Problems	Problems of the gastro intestinal systems
14	Skin Problems (Including Burns)	Problems of the skin, including breast.
15	Musculo Skeletal System Problems (excluding Trauma)	Problems of the Musculo Skeletal system, excluding trauma
16	Trauma & Injuries	Problems of Trauma & Injuries
17	Genito Urinary System Disorders (except infertility)	All Genito urinary problems except for those relating to infertility
18	Maternity & Reproductive Health	Maternity and problems associated with reproduction

19	Neonates	Conditions of babies in the neonatal period.
20	Poisoning	Poisoning, toxic effects and other adverse events, whether accidental or deliberate
21	Healthy Individuals	Individuals who have no current problems but who are involved in programs for prevention of illness and promotion of good health
22	Social Care Needs	Problems related to life-management difficulty and problems related to care-provider dependency
23	Other	Other conditions and Other congenital malformations

Programme budgeting data is limited in some ways, for instance it does not include much detail about primary care, much of which is included under subcategory 23a GMS/PMS; however the data is regarded as having improved over the years. In order to improve data quality, annual refinements to the programme budgeting data collection have been implemented. This means that year on year comparisons are not straightforward as changes in the way that activity is coded and reference costs are calculated will affect allocation of costs to programme budgeting categories from one year to the next. For instance in future, instead of using the Healthy Individuals category the guidance says that these programmes will be rolled in with the diseases these activities are trying to prevent where possible.

Turning financial activity data into programme budgeting data is resource intensive and there is evidence of data quality issues in some PCTs. In particular PCTs vary greatly on the proportion of spend that is classified under 'other' for instance Newham has 16.8% of spend under 'other' category compared to 8.9% of spend in Tower Hamlets. This may be an indication that data quality is more of an issue in Newham than in Tower Hamlets.

## 2. What is the local picture?

There are several tools for looking at Programme Budgeting data. These include the PCT Benchmarking workbook produced by the Department of Health; the Programme Budgeting Spend and Outcome Tool (SPOT)<sup>1</sup>, developed by the Association of Public Health Observatories (APHO) for the Department of Health; the Interactive Programme Budgeting Atlases available on the NCHOD/COPHI website<sup>2</sup>; the Diabetes Outcome Versus Expenditure (DOVE) Tool<sup>3</sup>, and the Maternity and Newborn Outcomes versus Expenditure Tool.<sup>4</sup>

The NHS Health Investment e-guide<sup>5</sup> recommends looking at investment using this step-step approach:

Step 1: Identify relative expenditure across programmes (use Programme Budgeting Benchmarking Tool)

Step 2: Identify the relationship between spend and outcomes (use Spend & Outcome Tool)

Step 3: Identify the broad drivers of spend and outcome information in more detail (use Programme Budgeting Atlas)

Step 4: Identify the drivers of spend in greater detail (use NHS Comparators and the Inpatient Expenditure Variation Tool)

These tools allow comparison with England and with ONS clusters which are areas that have similar characteristics. Health clusters have three levels; super group; group; and sub-group. Tower Hamlets is in the super group and group *London Centre*, both of which also contain Camden PCT, Hammersmith and Fulham PCT, Islington PCT, Kensington and Chelsea PCT, Wandsworth PCT, and Westminster PCT. Tower Hamlets has its own

<sup>1</sup> Yorkshire & Humber Public Health Observatory (2011). Programme Budgeting Spend & Outcome Tool. Available at:

<http://www.yhpho.org.uk/default.aspx?RID=49488>

<sup>2</sup> NCHOD (National Clinical Health Outcomes Database). Interactive Programme Budgeting Atlases. Available at:

<http://nww.nchod.nhs.uk> (NHS version only).

<sup>3</sup> Yorkshire & Humber Public Health Observatory (2011). Diabetes Outcome Versus Expenditure (DOVE) Tool. Available at:

<http://www.yhpho.org.uk/default.aspx?RID=88739>

<sup>4</sup> Child & Maternity Observatory (2011). Outcomes versus Expenditure Tool – Maternity and Newborn. Available at:

<http://www.chimat.org.uk/outcomesvexpenditure> (Registration required)

<sup>5</sup>

subgroup, *London Centre-B*, while the other six PCTs are in subgroup *London Centre-A*, so there is no PCT to compare with at subgroup level. This is a reflection of how unique the demographics are for Tower Hamlets compared to other London boroughs. City & Hackney PCT and Newham PCT are both in *London Cosmopolitan* group.

Figure 1 shows the proportion of total spend in Tower Hamlets by main programme budgeting categories; the total spend for 2009/10 was £541.2 million. The biggest area of spend is mental health, followed by other, followed by cardiovascular disease. Compared to the cluster average, Tower Hamlets proportionally spent a lot more on circulatory disease, dental problems, trauma and injuries, and healthy individuals. Tower Hamlets spent less proportionally on infectious diseases, learning disabilities, gastrointestinal problems, respiratory illness, and social care needs, and 'other' category.

Despite the budget allocation increasing by 51% between 2006/07 and 2009/10 financial year (not controlling for inflation), the proportion spent on each category has not changed very much over the years. The biggest change has been the proportion spent on trauma and injuries jumping from 4.2% in 2006/07 to 6.5% to 7% in subsequent years. Tower Hamlets actually has the highest spend per head in the country for trauma and injuries. The proportion spent on neonates and the proportion spent on health individuals has dropped over this time period.

Figure 1. Proportion of total spend by main Programme Budgeting Category, Tower Hamlets, shown with cluster average, 2009/10 financial year.

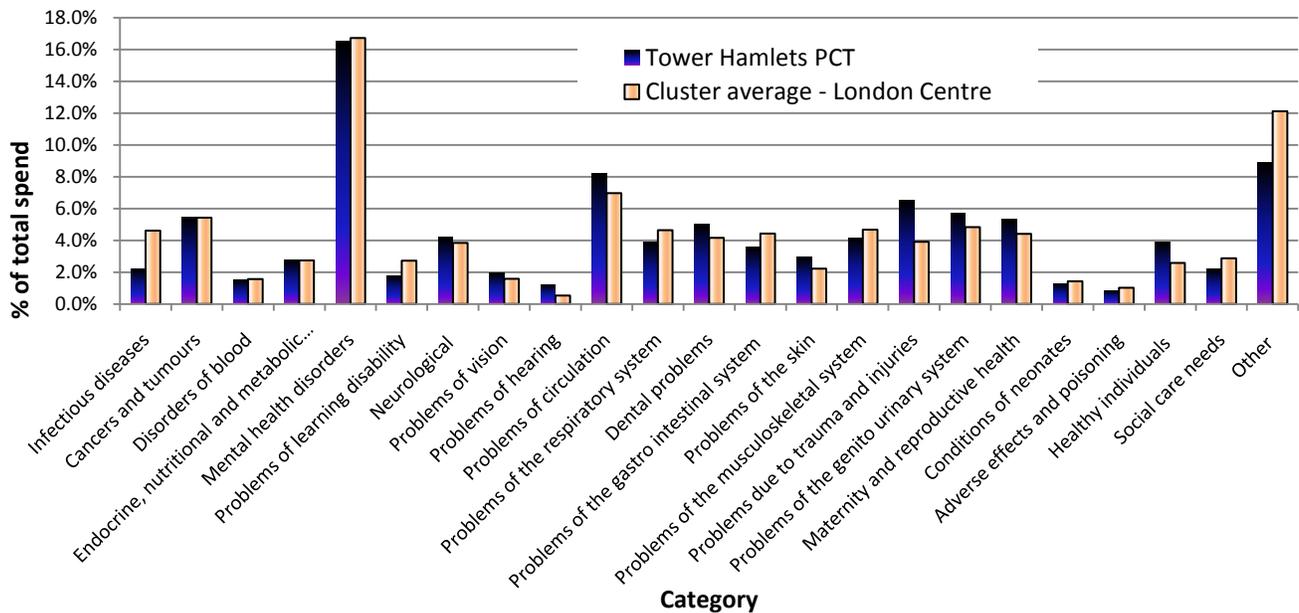
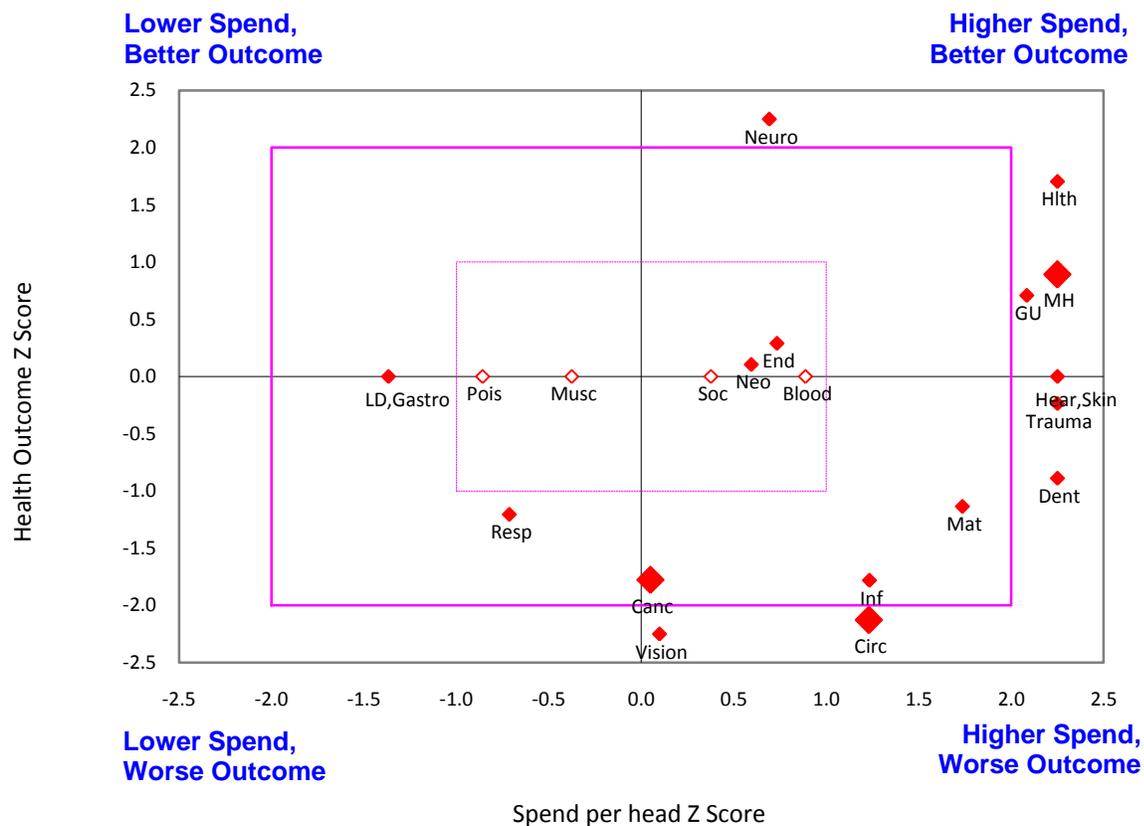


Figure 2 shows the quadrant chart from the Spend and Outcomes tool for Tower Hamlets. Each dot represents a programme budget category. The three largest spending programmes nationally (Mental Health, Circulatory Diseases and Cancer) are represented by larger dots. A programme lying outside the solid pink +/- 2 z scores box, may indicate the need to investigate further. If the programme lies to the left or right of the box, the spend may need reviewing, and if it lies outside the top or bottom of the box, the outcome may need reviewing. Programmes outside the box at the corners may need a review of both spend and outcome.

Figure 2. Tower Hamlets, Spend and Outcome relative to other PCTs in England 2009/10



- ◇ No outcome indicators readily available
- ◆ Outcome indicators available

Infectious Diseases	Inf	Learning Disabilities	LD	Dental	Dent	Maternity	Mat
Cancers & Tumours	Canc	Adverse effects & poisoning	Pois	GI System	Gastro	Neonates	Neo
Respiratory System	Resp	Hearing	Hear	Musculoskeletal	Musc	Neurological	Neuro
Endocrine, Nutritional & Metabolic	End	Circulation	Circ	Trauma & Injuries	Trauma	Individuals	Hlth
Genito Urinary System	GU	Mental Health	MH	Disorders of Blood	Blood	Social Care	Soc

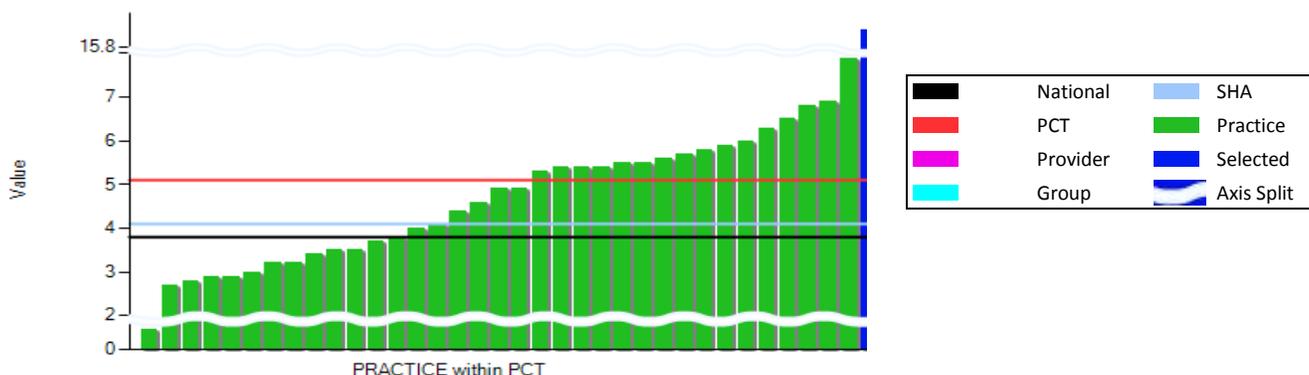
Based on the Spend and Outcome Tool data for 2009/10 financial year, Tower Hamlets was an outlier with significantly higher spend per head than national on seven Programme Budgeting categories: Mental Health; Hearing; Dental; Skin; Trauma & Injuries; Genito Urinary System; and Healthy Individuals. Trauma & injuries and Healthy Individuals have been high spend outliers for 3 of the last 3 years, while Mental Health, Hearing, and Skin problems have been high spend outliers for 2 of the last 3 years. Tower Hamlets did not have significantly low spend for any categories in 2009/10.

In terms of outcomes, Tower Hamlets had significantly poorer outcomes than national for 4 categories: Endocrine, nutritional and metabolic; Neurological; Vision; and Circulation. Mortality from circulatory disease (mainly CHD and stroke) has been an outlier for poor outcome for 2 of the last three years and is showing a pattern of getting further from the England average. Infectious diseases mortality was also an outlier for worse

outcome than national for two out of the last three years. Tower Hamlets did not have significantly better outcomes for any category. Outliers are defined as being more than 2 standard deviations from the average.<sup>6</sup>

NHS Comparators has acute data and prescribing data by Programme Budgeting category. It also has more timely data than nationally produced PCT level tools, with data usually about 7 months behind. Figure 3 shows an example chart from NHS Comparators, this is CVD admissions rate for practices in Tower Hamlets, ranked from lowest to highest for Q2 2010/11. It shows how practices rank against the PCT, SHA, and national average as well.

Figure 3. Total admissions per 1000 population for Category 10: Diseases of Circulation, Tower Hamlets GP Practices. Selected practice in blue is Health E1.



### 3. What are the effective interventions?

Programme Budgeting is often combined with Marginal Analysis (MA) which is an economic appraisal technique that evaluates the incremental changes in costs and benefits that will occur if programmes are increased, decreased or deployed in different ways. PBMA (Programme Budgeting with Marginal Analysis) has been tried in three different English NHS regions - Hull (Diabetes), Newcastle (CAHMS), and Norfolk (Mental Health), with mixed results.<sup>7</sup> PBMA was mentioned as a technique in World Class Commissioning and in previous NHS Operating Frameworks. In New Zealand, the Pharmaceutical Management Agency PHARMAC has used the results from PBMA as a lever to slow down the rapid increase in drug costs. PHARMAC is in a unique position to do this as it is both the regulator and the purchaser of pharmaceuticals for the whole country.<sup>8</sup> There are examples of PBMA being used in other parts of the world as well.

The most successful examples of PBMA have been pragmatic, i.e. starting with the system as it is rather than redesigning from scratch; and have been participative, i.e. with engagement from different groups like commissioners, public health, finance, clinicians, members of the public, carers, third sector. Drawing on an existing group, for instance a cardiac network, was a good place to start. Having a facilitator who has expertise in the PBMA process and having sufficient project support were seen as crucial factors in carrying out a successful exercise. Making sure that panel members understand the time commitment needed for PBMA is important. If investment is to be moved, finding meaningful data on costs and outcomes is very important. In the Norfolk example, the criteria that investment decisions were made were grouped into four main categories; these were

<sup>6</sup> Yorkshire & Humber Public Health Observatory (2011). Programme Budgeting Spend & Outcome Tool. Available at: <http://www.yhpho.org.uk/default.aspx?RID=49488>

<sup>7</sup> Yorkshire & Humber Public Health Observatory. PBMA for HE Evaluation. Available at: <http://www.yhpho.org.uk/default.aspx?RID=8478>

<sup>8</sup> Grocott, R. (2009) Applying Programme Budgeting Marginal Analysis in the health sector: 12 years of experience. Expert Review of Pharmacoeconomics & Outcomes Research 9: 2(181-187) Available at: <http://www.expert-reviews.com/doi/full/10.1586/erp.09.2>

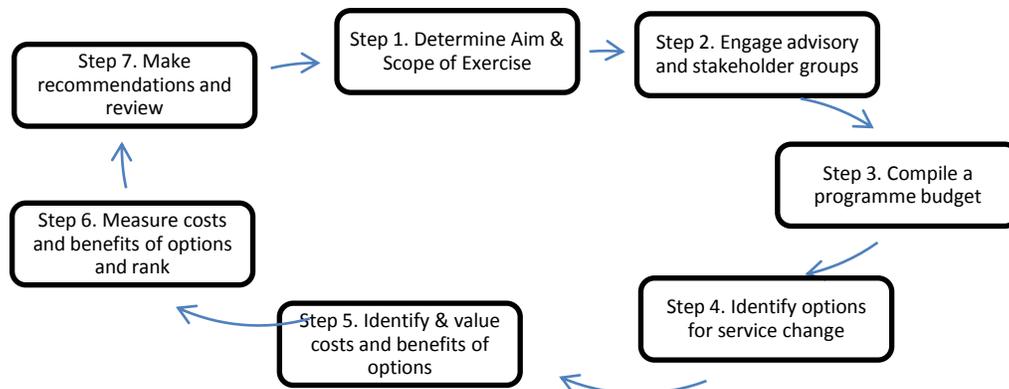
effectiveness, feasibility, policy & strategy, and quality of service.

The organisations involved in the process need to agree, in principle, the ground rules for redeploying any savings made at the outset of the exercise. For example can 100% of savings be redeployed within the Programme Budget? Are there any restrictions on transferring funds between levels of care, for example primary care to secondary care? These ground rules are essential to dispel suspicions of “cuts” and ensure full disclosure of ideas, especially for disinvestments. The main issue with carrying out PBMA is there are usually ideas for new investments but people have less of a stomach for finding disinvestment areas.<sup>9</sup>

A recent paper by Mortimer<sup>10</sup> recommended changes to the PBMA process; these were that PBMA should have a hard budget constraint with budgetary pressure; programme budgets can have broad scope but specific investment proposals linked to disinvestment proposals with similar input requirements; advisory/working groups should include equal representation of sectional interests plus additional members with responsibility for advocating in favour of disinvestment, ‘shift lists’ (programmes for disinvestment) should be populated and developed prior to ‘wish lists’ (programmes for new or more investment) and investment proposals should be linked to disinvestment proposals within a relatively narrow budget area. Whether these are really changes, or are just reaffirming the idea that the PBMA process should be cost neutral is debatable.

Figure 4 shows a schematic of the seven steps of the PBMA process.

Figure 4. Seven steps of the PBMA Process. From Health investment e-guide.<sup>11</sup>



#### 4. What is being done locally to address this issue?

Programme Budgeting data has been used locally to identify areas for investment like CVD where spend is lower than expected and outcomes are poor. Programme Budgeting data is not age-standardised so disease areas that affect older people may not be as prevalent as Tower Hamlets has a younger population structure than many areas. However as the population in Tower Hamlets get older, Programme Budgeting can help us to identify when spend needs to move to diseases of old age.

<sup>9</sup> YHPHO (2008). Road Testing Programme Budgeting and Marginal Analysis (PBMA) in three English Regions: Hull (Diabetes), Newcastle (CAHMS), Norfolk (Mental Health). Available at:

<http://www.yhpho.org.uk/resource/item.aspx?RID=10049>

<sup>10</sup> Mortimer (2010). Reorienting programme budgeting and marginal analysis (PBMA) towards disinvestment. BMC Health Services Research 10:288. Available at: <http://www.biomedcentral.com/content/pdf/1472-6963-10-288.pdf>

<sup>11</sup> NHS Health Investment e-guide. <http://www.networks.nhs.uk/nhs-networks/health-investment-network/documents/E-guide%20v1.2.pdf>

## 5. What evidence is there that we are making a difference?

Programme Budgeting has been used locally to inform commissioning priorities. A local prioritisation framework and scoring system was developed that incorporated considerations around impact on mortality, morbidity, inequalities, patient quality, patient safety and feasibility. This was used to feed into the commissioning process.

## 6. What is the perspective of the public on support available to them?

A review of public participation in priority setting in 2009 found that methods for involving the public varied a lot between cases.<sup>12</sup> There are examples of members of the public being involved in priority setting and PBMA.<sup>13</sup> For example in Tayside in Scotland Danny Ruta and colleagues used a PBMA approach to moving investments around child health but also used elements of needs assessment.<sup>14</sup> To get views of the public they ran a focus group with parents of children who had health problems. In addition a free telephone line was set up for a 24-day period which was advertised in the local press. The response was quite modest, with 45 phone calls. Most of the priorities that were identified by members of the public were the same as those identified through needs assessment and views of professionals.

A priority setting exercise in NHS Dumfries and Galloway also used public perspectives, which were inferred indirectly from using discrete choice experiments (DCEs).<sup>15</sup> 72 members of the public chose between alternative care systems. The results from these choices allowed trades offs between ten criteria to be inferred; these criteria were location of care, public consultation, use of technology, service availability, patient involvement, management of care, evidence of effectiveness, health gain, risk avoidance and priority area. All of the criteria except risk avoidance came out as significant in affecting individual's choices, with the most important criteria being a large health gain to many people; care being provided in teams; using cutting-edge technology; and 24 hour service availability. The DCE methodology informed the decision-making process that was used by NHS Dumfries and Galloway as part of their options appraisal process.

If commissioners are to involve the public in prioritisation it is useful to be aware of what their preferences are likely to be. A recent paper found that some members of the public in England prioritise interventions less if they perceive that individuals are partly to blame for their illness, as they do in the case of obesity or alcohol related disease.<sup>16</sup> They also prioritised interventions more if the interventions were life saving ('rule of rescue' argument) or were for children or young people ('fair innings' argument). Maximising the QALY gains to society at lowest cost also came out as a high priority.

<sup>12</sup> Mitton C, Smith N, Peacock S, Evoy B, Abelson J. (2009) Public participation in health care priority setting: A scoping review. *Health Policy* 91(3):219-28

<sup>13</sup> York Centre for Health Economics (1997). The state of health care priority setting and public participation. Available at: <http://www.york.ac.uk/che/pdf/DP154.pdf>

<sup>14</sup> Ruta, D. Donalson, C. Gilray, I. (1996). Economics, public health and health care purchasing: the Tayside experience of programme budgeting and marginal analysis. *J Health Serv Res Policy*. 1(4):185-93.

<sup>15</sup> Carnon, A. (2007) (Presentation) Involving the Public in Priority Setting: A case study in NHS Dumfries and Galloway [http://abdn.ac.uk/%2Fheru%2Fdocuments%2Fandrew\\_carnon.ppt&ei=ipTsTb3ck5Kv8QPcvamTAQ&usg=AFQjCNEc-SunmT5httyLgA-FtP6qRTxPfw](http://abdn.ac.uk/%2Fheru%2Fdocuments%2Fandrew_carnon.ppt&ei=ipTsTb3ck5Kv8QPcvamTAQ&usg=AFQjCNEc-SunmT5httyLgA-FtP6qRTxPfw)

<sup>16</sup> Mason, H. Baker, R. M. Donaldson, C. (2011) Understanding public preferences for prioritising health care interventions in England: does the type of health gain matter? *Institute for Applied Health Research*. Paper 46. Available at: <http://researchonline.gcu.ac.uk/iahr/46>

PCTs usually publish their strategic commissioning plans so that these are in the public domain. However they do not always publish elements of the priority setting process that has gone on behind the plan. Publishing a full list of investment and disinvestment options and why they have been chosen may be useful in future to make local NHS organisations more accountable and make the decision making process more explicit. The NHS Confederation (2008) recommend that a consistent priority setting process should be used for strategic commissioning plans, service developments (which are defined as being any changes that have resource implications for the PCT), and individual funding requests. Prioritisation involves taking a comprehensive view of an individual funding request or a service development, looking at the opportunity cost – i.e. the next best thing that the money could be spent on -, and setting the priority.<sup>17</sup>

## 7. What are the priorities for improvement over the next 5 years?

The priority should be to look at how programme budgeting data can be used to monitor spend on different categories, and to embed programme budgeting data more so that it is part of the commissioning cycle.

## 8. What more do we need to know?

Better local data on programme budgeting would be useful, for instance if we could look at data at a lower geographical level, or look at particular client groups. Having more timely data would be useful too as the national data is published around 10 months after the end of the financial year.

## 9. Key Contacts & Links to Further Information

The general contact email for JSNA queries is [JSNA@towerhamlets.gov.uk](mailto:JSNA@towerhamlets.gov.uk)

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The Department of Health contacts for Programme Budgeting are:

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James Wallis, Programme Budgeting Executive Officer, 0113 25 46780 [programmebudgeting@dh.gsi.gov.uk](mailto:programmebudgeting@dh.gsi.gov.uk)

There is an interactive learning module on PBMA here:

<http://www.healthknowledge.org.uk/interactive-learning/pbma>

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<sup>17</sup> NHS Confederation (2008). Priority setting: managing new treatments. Available at: <http://www.nhsconfed.org/Publications/Documents/Priority%20setting%20managing%20new%20treatments.pdf>