



Investing in Health in North Yorkshire and York

Programme budgeting and marginal analysis



Where does the NHS money in NYYPCT go?

How much do we spend in the major health programmes?

What good does that investment do?

How do we compare with other PCTs?

What inequalities do we see within our PCT?

What are our objectives for each health programme?

What can we do to improve things, this year and next?

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Foreword

Investing in Health in North Yorkshire and York Primary Care Trust: Programme Budgeting and Marginal Analysis

It is the mission of our Primary Care Trust to engage with the population we serve to improve their health and deliver services of the highest possible quality, within the resources entrusted to us. In support of that mission, this report maps out where all the money in the North Yorkshire and York Primary Care Trust was deployed in the last financial year, the health outcomes and inequalities we observed, and suggestions for where we might go next.

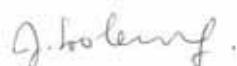
The report is structured around health programmes. It suggests a series of improvements that we might make at each step in the patient journey for each programme. Our aim is to “add life to years” and not just “years to life” and in so doing meet the newly published criteria of “World Class Commissioning”.

We continue to face the challenge of getting back into financial balance by the end of the coming financial year, but our driving motivation is to improve health as we do that, using to best effect the one billion pounds that have been entrusted to our stewardship. We are reliant on the collaborative efforts of clinicians in general practice, community and hospital settings, and this report provides feedback to them.

This will be an evolving document, amended and updated on the PCT website www.nyypct.nhs.uk as the year unfolds and as comments from the public and partners come in. It will feature in our Joint Strategic Needs Assessments with Local Authorities and provide a framework for appraising effectiveness, efficiency and equity. Since health improvement is necessarily a collaborative exercise, all comments and ideas are warmly welcome.



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Acknowledgments

This report was a team effort within the Public Health Directorate of NYYPCT and improved by the comments received from other Directors and their teams.

Special thanks to Kate Mabbott in the finance department of NYYPCT for compiling the 2006/07 return to the Department of Health, and for retaining the detail that made up that return.

Special thanks also to Dr Nagpal Hoysal and Dan Widdows for the public health data analysis.

Thanks to the finance officers in the hospitals, foundation trusts and other NHS organisations around the country who put together the financial returns for this PCT and all the others in England, making the comparisons in this document possible.

Some of the data were drawn from the work of the **National Centre for Health Outcomes Development** led by Prof Azim Lakhani.

Other information came from the Department of Health's **Programme Budgeting Project** managed by Andrew Jackson (www.dh.gov.uk/programmebudgeting). Their contributions are also gratefully acknowledged.

Caution on data accuracy

Care has been taken to ensure the information and sources are accurate, but some errors may persist.

The financial information should be regarded as “best estimates” under present data quality.

The purpose of this report is to inform, challenge, stimulate discussion, improve data collection on costs and outcomes, and develop a sense of common purpose in the assessment of needs and allocation of resources.

Greater detail and further checking will be needed before specific services are reconfigured.

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Executive Summary

1. This document explores **where the money in the local NHS has been deployed** in all the major health programmes, following the chapters of the International Classification of Diseases. It explores the activities and outcomes that that investment has yielded, and how we compared with similar PCTs and the national average. Since the PCT is the pivot of investment in health in the North Yorkshire and York health community, it is the PCT's responsibility to set this information out and make it accessible.
2. It is therefore both an audit and a plan for **equity, effectiveness and efficiency**.
3. It employs a well-trying economic tool known as "**programme budgeting and marginal analysis (PBMA)**", building on the project work of the Department of Health which has recently been endorsed as a core commissioning competency in the vision for "**World Class Commissioning**", in the report of the Audit Commission "**A prescription for partnership: engaging clinicians in financial management**" and in the Efficiency Appendix to the **NHS Operating Framework**.
4. It is congruent with the structure laid out for **Lord Darzi's** current review of the NHS: two of his themes (mental health and maternity services) map directly across to programmes in our framework, and his other themes (age groups and stages in the patient journey) are covered in each programme in turn.
5. The report is intended to address the **PCT's mission** statement of engaging with local people to improve their health and deliver services of a high quality within the resources entrusted to us – moving the services forward whilst maintaining the discipline of financial balance.

6. Outline of the document:

- The **introduction** explains the terms used in the document, the link with national policy context, the published evidence base and the ways in which we intend to use the information.
- The **big picture** section presents some summary statistics of investment in health broken down in different ways. Mental health, circulation and cancer are the three largest programmes of investment, as is the case in all PCTs in England. We appear to invest less than our peers in mental health, respiratory diseases, health promotion and social aspects of care, and more in genitourinary diseases, neurological disorders, dental health, gastrointestinal disorders, skin problems and musculoskeletal problems. **Inequalities in health** are striking, and this concept is introduced here and in each subsequent chapter.
- The next 23 chapters set out the **23 programme budget categories** in turn, systematically covering the entire PCT expenditure in 2006/07. They look at programme objectives, investment, age profiles, contributions of partners, inequalities, needs, outputs and outcomes, and make suggestions for enhanced activities in the year ahead. **This section is incomplete and we are seeking the input of the public, patients, clinicians, NHS managers and our many partners in local authorities, voluntary agencies and independent sector.** One of the developmental challenges, with significant implications for redeployment of resources, is the implementation of guidance from the National Institute for Health and Clinical Excellence (NICE), so all NICE guidance is logged for each programme.
- Each chapter concludes with a series of **challenges** for every step in the patient pathway. A summary of challenges for each partner appears at the end.

7. By focusing first on health themes, and thence on providers of care, the programme framework puts the **health of the population** at the forefront of planning, rather than the financial health of organisations.

8. It is a **unifying framework** that makes links between public health, finance, commissioning, quality assurance and performance management, but in a way in which members of the public and clinicians can engage. It is part of the PCT's contribution to Joint Strategic Needs Assessment since health outcomes include community well-being in the widest sense, and the NHS is only one contributor among many to meeting those needs.

9. If the PCT is to succeed in its objectives of improving health and reducing inequalities whilst restoring financial balance, it will need to give regular feedback to general practitioners on their own and each others' pattern of prescribing and referral, including the costs and outcomes, grouped into health programmes. We want to move beyond "**medicines management**" and "**referral management**" to the more integrated approach of "**disease management**" and "**programme management**". Such programme management would take in every step from prevention to terminal care. If we truly focus on health improvement in the broadest sense we will stimulate joint assessment and delivery with local authorities, especially social services.

10. Unless we frame **new questions** we will get old answers! A PBMA approach gives us an adjunct to commissioning that is transformational and not merely transactional.

11. If there is to be a coherent structure to **clinical liaison** between primary (general practice), secondary (hospital) and community care across our large patch, and to get patients' views into the mix, we need a common framework. PBMA is ideal. In effect, such clinical liaison is based on **marginal analysis** – looking at the incremental changes in costs and benefits when programme budgets are increased,

decreased, or deployed in new ways. Acquiring familiarity and skill in marginal analysis will be part of the developmental agenda for the PCT and its partners.

12. If the PCT is to give a proper account of its **stewardship** of approximately £1billion of taxpayers' money, then this is a convenient framework in which to do it.

13. It is our intention, as a PCT, to be able to explain to the public we serve, our Health Scrutiny Committees, the Strategic Health Authority and the regulatory bodies that, in each programme:

- We are **improving health and tackling inequalities**
- We can demonstrate an understanding of the **efficient use of resources**
- We have included the **public, clinicians** and **partners** in our plans.

14. We recognise that framing our accountability and forward planning in health programmes is still new, and a lot of the data on costs (such as programme budgets) and outcomes (such as patient-reported outcomes measures – PROMS) are weak or missing. That means we should **specify greater precision in what we collect**, and not abandon the framework. It is better to light a candle than curse the darkness!

15. We are seeking the assistance of the academic infrastructure in **health economics** and **epidemiology** in York, the Public Health Observatory and regional universities and medical schools to strengthen our model. We intend to share our experience as it grows – perhaps in peer-reviewed articles and presentations at conferences – and learn from the work of others. That process has already started.

16. Finally, this is an **evolving document** and will grow as more input is received from its readership. It will be found on the PCT website and periodically updated. We are particularly keen to receive comments on the programme objectives (our mission for commissioning) at the start of each section, and the suggested plans (where we go from here- both stopping and starting programme activities) at the end of each section.

Explanation of terms and abbreviations used in this document

PCT Cluster: “Prospering UK – Prospering smaller towns – Prospering smaller towns - B”

(These are based on determinants defined by the Office of National Statistics)

Along with NYYPCT, the following PCTs are included in this cluster:

- East Riding of Yorkshire PCT
- East Sussex Downs and Weald PCT
- Gloucestershire PCT
- Herefordshire PCT
- Lincolnshire Teaching PCT
- Norfolk PCT
- North East Essex PCT
- North Somerset PCT
- Northumberland Care Trust
- Shropshire County PCT
- Somerset PCT
- Suffolk PCT

Abbreviations and terms used in the health programmes sections.

Adjustments = a necessary financial adjustment to spread more evenly the cost of lead commissioning arrangements and to bring in the cost of those services funded by non-NHS bodies such as Social Services.

GP prescribing = the prescribing budget of general practitioners in North Yorkshire and York PCT

Ambulance = services provided by the Yorkshire Ambulance Service (YAS)

Other NHS = all other NHS providers (often specialist hospitals)

Opportunity cost = the potential benefits that are foregone when a resource is used in a particular way.

Miscellaneous = private providers, voluntary agencies and PCT management costs

Unified weighted population = This is a theoretical population that takes account of the variation in age structure and health between PCTs. It allows more robust comparisons to be made between investment in NYYPCT and its peers. It is the weighting used to determine how much financial resource comes to NYYPCT. Because of our relatively affluent population overall, the effect of weighted capitation is to reduce the financial allocation to our PCT.

GMS/PMS = General Medical Services and Personal Medical Services

YHFT = York Hospitals NHS Foundation Trust

HDFT = Harrogate and District NHS Foundation Trust

STHT = South Tees Hospitals NHS Trust

SNEYT = Scarborough and North East Yorkshire Healthcare NHS Trust

LTHT = Leeds Teaching Hospitals NHS Trust

ANHST = Airedale NHS Trust

HEYT = Hull and East Yorkshire Hospitals NHS Trust

TEWVT = Tees, Esk and Wear Valley NHS Trust

BDCT = Bradford District Care Trust

YAS = Yorkshire Ambulance Service

Introduction: Programme Budgeting and Marginal Analysis - a fresh approach to health improvement, needs assessment, commissioning and accountability.

What is programme budgeting and marginal analysis?

Programme budgeting is a well-established technique that involves looking at where our money has been invested in health programme areas (like circulation problems, mental health and cancer) instead of traditional budget headings (like GP prescribing, hospitals and community services). It is then possible to look at activity and outcomes that have been generated in those programmes and readjust the pattern of spending to get a better fit with needs and inequalities. That should lead to improvements in **efficiency** (value for money), **effectiveness** (better outcomes) and **equity** (fairer shares of resources and reduction in inequality of health outcomes).

The National Institute for Health and Clinical Excellence (NICE) has mapped all its guidance since May 2005 into programme budget categories (www.nice.org.uk)

Programme budgeting is often used in conjunction with marginal analysis ...

Marginal analysis is an appraisal of incremental changes in costs and benefits (“at the margin”) when resources in programmes are increased, decreased, or deployed in new ways.

If programme budgeting shows where we are starting from, then marginal analysis helps us decide how to move forward.

Under sponsorship from the NHS Institute, three PCTs have piloted a local marginal analysis approach, and the Yorkshire and Humber Public Health Observatory is one of these. The emerging findings were reported at the NICE conference in December 2007 and will be written during 2008. Under sponsorship from the NHS Alliance in partnership with Humana, an educational programme on commissioning for practice-based commissioners is being developed, with PBMA on its syllabus. Initiatives like these should lead to wider uptake of PBMA in practice-based commissioning.

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.

(NICE, 2005, Health needs assessment: a practical guide)

This definition fits very well with programme budgeting and marginal analysis.

A verb, not a noun! *Programme budgeting (verb)* is a way of thinking and working - a way of framing questions and objectives, of planning, coordinating, communicating, networking and reporting, helping everyone concerned to recognise the opportunity costs and trade-offs that have to be made as we constantly try to get a better fit between what the population needs and the resources available to do the job. It is more than just a *programme budget (noun)*. It's not the spreadsheet that matters but how we use it - not the map that matters but the journey.

Commissioning is the process by which we get a better fit between the needs of the population and the resources at our disposal. It works best when the partners share a sense of common purpose. Think of it as *co-mission-ing*. Programme objectives, if derived in consultation with all concerned, provide the sense of common purpose which gives us the mission for commissioning. A health programme approach provides the systematic, comprehensive and unifying framework we need.

Patient pathways

Programme budgeting recognises that we need a balanced portfolio of investment at every step along the patient pathway in each health programme. Where some patients have more than one condition ("co-morbidity") it is helpful to think of each in turn as well as the impact on the person as a whole. Pathways start with protecting good health and preventing illness, or preventing recurrences in a relapsing disease. Then, when symptoms do occur, the next step is to invest in rapid diagnosis and assessment so that the proper therapeutic plan can be put in action. Curative services are the next stage, and probably represent the major call on resources. Supportive care in chronic conditions is the next step, recognising that many diseases are long-standing but it is still possible to mitigate their disabling or handicapping effects and to take pressure off carers. Finally, we need to invest in "easing the passing" – making sure that everyone has a well-managed death, with

dignity, in a place of their choosing, wherever possible. Dying is the final step in every patient's personal journey.

All the programme outlines in this report conclude with a summary of suggested action points for each of these steps in the patient pathway, from prevention to end of life.

What is the policy context?

October 1997 "The New NHS, modern, dependable", DH

Para 6.2: "Partnerships between secondary and primary care clinicians and with social services will provide the necessary basis the establishment of programmes of care, which will allow planning and resource management across organisational boundaries."

Para 9.18: "Efficient use of resources will be critical to delivering the best for patients. It is important that managers and clinicians alike have a proper understanding of the costs of local services, so that they can make appropriate local decisions on the best use of resources."

March 2005. Programme Budgeting Guidance Manual: DH website

"The Secretary of State has asked for the collection of financial information that identifies all PCT expenditure, including primary care services, to programmes of care based on medical condition....The programme budgeting framework contained in this document was originally developed by the national Programme Budget Project Board and agreed with its many stakeholders (who include NHS, DH, NAO, Audit Commission and HM Treasury representatives)....The aim of the national programme budgeting project is to develop a primary source of information, which can be used by all bodies, to give a greater understanding of 'what we are getting for the money we invest in the NHS'".

24 June 2005. Financial management in the NHS. National Audit Office and Audit Commission

"The overall benefits of Programme Budgeting are considerable and include:

- showing where total NHS funds have been spent in a way that is useful and interesting to tax payers;

- enabling expenditure on particular conditions to be assessed against National Service frameworks and health outcomes;
- providing consistent data to compare one body's expenditure and performance with another's;
- assisting Primary Care Trusts in planning the provision of services, thus supporting more effective budgeting and commissioning.
- ultimately, the Department intends that Primary Care Trusts and Strategic Health Authorities will publish their Programme Budgeting figures as an audited note to their annual accounts, thereby increasing transparency about their performance."

28 November 2006. Letter from DH Director of Finance to all SHA directors of finance, public health and commissioning.

"Purpose ... to ask you to communicate the 2005/06 programme budgeting figures to all PCTs, NHS Trusts and NHS Foundation Trusts within the SHA boundary."

"... Analysis of expenditure in this way should help PCTs examine the health gain that can be obtained from investment, and will help inform understanding around equity and how patterns of expenditure map to the epidemiology of the local population."

December 2007. "World class commissioning"

The vision statement and list of commissioning competencies of this major re-launch of NHS commissioning both refer to programme budgeting as a tool for "world class commissioning".

December 2007. "A prescription for partnership: engaging clinicians in financial management."

This report from the Audit Commission endorses a programme budget approach and cites an example from the mental health programme.

December 2007. The operating framework for the NHS in England.

The efficiency appendix states: "PCTs should use programme budgeting information to review the relationship of expenditure to outcomes in their highest spending commissioning categories (typically Mental Health, CVD and Cancer) and identify opportunities for improved value for money."

December 2007. Lord Darzi's NHS review

Two of his themes (mental health and maternity services) read across directly to programmes 5 and 18 respectively in our framework, and his other themes (age groups and stages in the patient journey) are covered in each programme in turn.

Is there a published evidence base?

Yes. Programme budgeting has built up a large evidence base over many years, in this country and abroad, and in a variety of health care settings. A few illustrative examples are listed below:

Brambleby P. A purchaser's guide to purchasing healthcare. Clinician in Management. 1993. 2:6, 3-6. Note: this paper is 15 years old! It called for programme budgeting as a framework for commissioning, setting out the authority's view on fair shares between programmes and giving its officers operating parameters within which to pursue efficiency.

Brambleby P, A survivor's guide to programme budgeting. Health Policy 1995; 33:127-145.

Enthoven A. In pursuit of an improving National Health Service. London: Nuffield Trust, 1999 (pp 32-39; Motivated purchasers free to buy selectively) Note: Prof Alain Enthoven is an American academic, economist and health manager. He was an early implementer of programme budgeting in his former role as Assistant Secretary for Defense in the US, before moving into healthcare management. He was later the proponent of an internal market ("commissioning") for the British NHS. This reference includes the quote, on page 34: "Effective commissioners need Programme Budgeting and Marginal Analysis ...".

Mitton C, Donaldson D. Twenty-five years of programme budgeting and marginal analysis in the health sector, 1974-1999. J Health Serv Res Policy 2001; 6: 239-248.

Brambleby P. The quiet revolution. Dec 2004, ACCA, Health Service Review, 5-7. Note: this was commissioned by ACCA and aimed chiefly at a finance audience.

Ruta D, Mitton C, Bate A, Donaldson C. Programme budgeting and marginal analysis: bridging the divide between doctors and managers. BMJ 2005;330:1501-3.

Note: The authors state: “Recent NHS reforms give doctors increased responsibility for the efficient and fair use of resources. Programme budgeting and marginal analysis is one way to ensure the views of all stakeholders are properly represented.”

Brambleby P, Dixon J. The HSJ Debate: Programme budgeting is better for the health service than payment by results. Health Service Journal 21 July 2005, 18-19.

Brambleby P, Jackson A and Gray JAM. Better Allocation for Better Health and Healthcare: the First Annual Population Value Review. NHS National Knowledge Service, Commissioning Directorate, Department of Health. Feb 2007

Martin S, Rice N, Smith P. The link between health care spending and health outcomes: evidence from English programme budgeting data. Centre for Health Economics, University of York, CHE Research Paper 24. 2007.

What have we got so far?

For four financial years (2003/04 to 2006/07), all PCTs in England have submitted a return to the DH listing how their total expenditure was deployed across 23 “Programme Budget Categories”. In 2006 the expenditure data were linked to outcome data under the auspices of the National Centre for Health Outcomes Development (NCHOD) and are available to those on the nhs net (nww.) in the form of user-friendly interactive maps, nested plots and correlation charts.

In October 2007 the fourth year’s programme budgets returns were published (2006/07), and this time with additional information on sub-programmes.

The first 20 programme budget categories relate to the chapters in the International Classification of Disease (version 10). Category 1 relates to infectious diseases, category 2 to cancers and tumours, and so on. A further 3 programme budget categories were added to this list to capture the remaining areas of spend that did not easily fit with the first 20. These are: 21 – healthy individuals (eg smoking cessation, well-person clinics), 22 - social care needs (eg respite care, joint projects with social services) and 23 –“other” (eg General Medical Services and workforce

development). In time, these three extra categories may be absorbed into the main 20.

In order to get to a figure for each programme budget category to send to DH, PCTs have to add together the component parts: hospital expenditure, community expenditure, GP prescribing, and the rest. That level of detail is not sent to the centre but is held locally by each PCT, and reported here for NYYPCT (see “big picture” and individual programme budget chapters). These component parts are very different in the different programme budget categories. For example, GP prescribing is a prominent feature in the endocrinology and circulatory diseases programmes but much less prominent in the cancers programme. This local detail should be used in local commissioning and liaison with clinicians and the public to inform any local redistribution within the programmes or between the programmes. Recent government policies such as “Choosing Health” and “Our Health, Our Care, Our Say” call for a redistribution of resources from treatment to prevention and from hospitals to the community. Any such shifts should be appraised for patient convenience, safety, effectiveness and value for money in a “marginal analysis advisory group”.

The Department of Health’s programme budget spreadsheet, available at www.dh.gov.uk/programmebudgeting , allows anyone to look at any PCT and ask:

- What the PCT’s “distance from target” with respect to overall funding is – essential context for other comparisons.
- What its per capita spend was in each of the programme budget categories, and what its rank is amongst the other 150 PCTs.
- How the PCT spend in any programme budget category compares with a cluster of similar PCTs, the SHA average and the England average.
- Examples from this source appear throughout this document.
- Remember, these figures are “best estimates” and subject to error, but as they are used the estimates will improve. Every PCT needs to know at least roughly what its major health programme investments are, what they achieve and how they compare with elsewhere. Think in terms of maps and journeys. It is the journey that matters, not the map, but if that journey is to be discussed with others, some sort of map, even a rough one, is necessary.

How can we use programme budgeting in NYYPCT?

Interpret all cost data as “best estimates” since the methodology is ambitious and in its infancy. Even so, some trends will chime with local experience and local knowledge, especially low and high spends, and should prompt further action. With greater use, accuracy will improve.

Start with the big picture:-

- Look at the PCT programme budget spends and those of others in the cluster.
- Unpick the detail in those programmes – discuss and understand them.
- Start framing some new questions. Remember: if we keep asking the same questions we are likely to keep getting the same answers; if we always do what we always did we will always get what we always got!
- Tap into the creativity of local clinicians, managers, public and partners – think of new ways of deploying those resources to fill gaps and improve health outcomes before adding or subtracting resources from a programme as a whole.
- Reframe the commissioning questions thus:-
 - What is the broad pattern of PCT investment across the health programmes?
 - What are our programme objectives? Challenge the status quo and set objectives at every step along the patient pathway.
 - What do our public, partners and professions want?
 - How much do we spend at present?
 - What activity do we see?
 - What outcomes are we getting?
 - How do all these compare with our peers?
 - Is there a better way to match programme resources (people, buildings, money) to programme objectives?

How can we do a marginal analysis within a programme budget?

Step 1

Convene an advisory group, ideally with patient, clinical and management membership as a minimum, and local authority representation where relevant.

Use or adapt an existing clinical advisory group where possible.

Step 2

Broadly map out for the group what is known about inputs (money, staff, buildings), outputs and outcomes in the chosen programme.

Compare these with similar populations elsewhere.

Step 3

Decide on the local prioritisation criteria by which investment and disinvestment ideas will be judged – eg magnitude of health impact, duration of impact, numbers of people affected, congruence with local priorities, etc.

Decide on the weighting (eg points out 100) that each criterion will carry.

Step 4

Look at local public feedback, local clinical ideas, published evidence and guidance (eg from NICE) that might suggest ideas for “doing different” in the chosen programme.

Construct a “wish list” of possible new developments, and a “hit list” of possible disinvestments or cash-releasing efficiency gains, for the programme.

Step 5

Assess the costs and benefits of each item on the lists, using the weighting criteria, and put them in rank order. Match potential disinvestments to potential investments until the programme budget amount is reached.

Step 6

Make recommendations and consult with stakeholders.

Set some markers of success by which progress can be measured.

Implement the changes and evaluate both costs and outcomes.

Share the learning.

Repeat in perpetuity!

To summarise ...

- There are many spin-off benefits from a programme budgeting and marginal analysis approach now that we have a national template to follow:
- It provides a vital **feedback** loop to the local NHS, on costs and outcomes, without which no system can operate effectively.
- It provides a **standard framework** that allows clinical teams and managers in all NHS settings, and their non-NHS partners, to see where the money is going in terms of health gain objectives, what activity is going on, and what outcomes are being generated.
- It encourages **innovation**, both stopping things and starting things, but within the discipline of a known budget.
- It enables clinicians to recognise and help manage the **opportunity cost** of their actions – the money can only be spent once so it must be spent well. It should reduce the risk of overspending because once the programme budget has been set, the task is to focus on what we do and how we do it.
- It encourages **participation** because it allows the public, patients, professions and our partner organisations to understand and have a say.
- It builds **bridges**. Programmes of care span organisational boundaries and traditional budget headings. A programme approach requires people to embrace common objectives and work together.
- It encourages looking at the whole **patient pathway**, from prevention and screening (as in the “Choosing Health” and “Our Health, Our Care, Our Say” strategies) through to palliative and terminal care. We want to achieve a balanced programme of spending across all the steps in the patient journey. It can be argued that we spend too little on prevention of disease and thereby avoiding the use of medicines and hospital admissions.
- It allows **comparison**. The national project has grouped PCTs into similar clusters as shown below and as used throughout the latter part of this report.
- It encourages **co-ordination** because other PCTs, Hospital Trusts and the Strategic Health Authority can see how the different pieces of the bigger jigsaw fit together. This is important for major capital investments.
- It provides a convenient framework for **performance reporting** and regulation.

The Big Picture

The Big Picture 1:

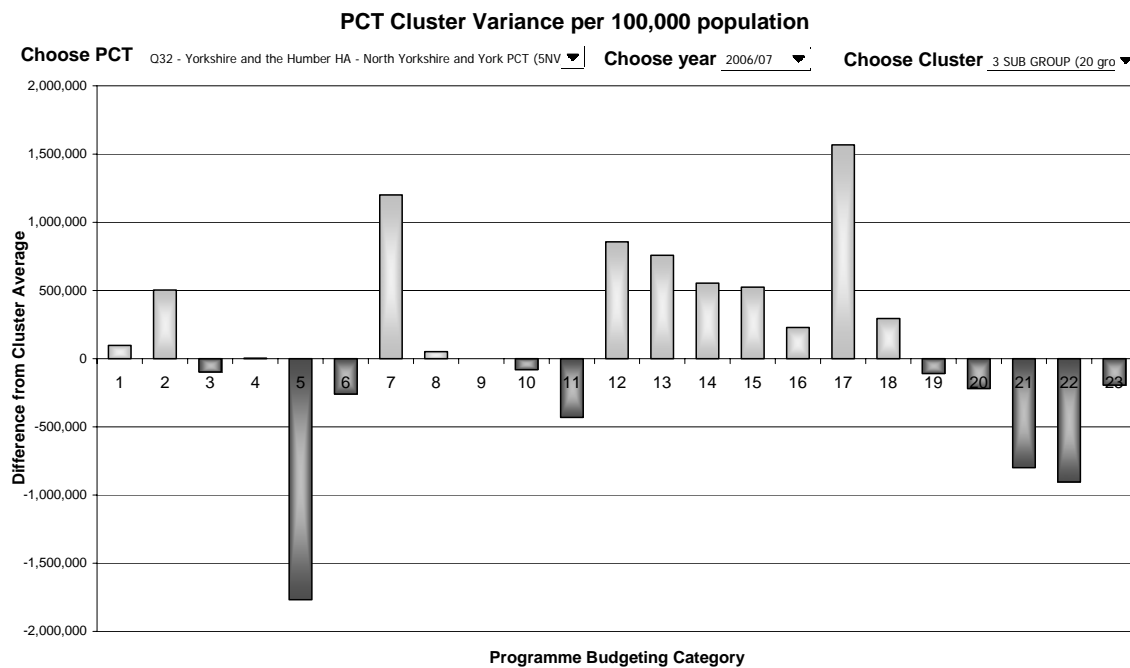
Where did NYYPCT invest its money, in all the major programmes in 2006/07, and how does that compare with elsewhere?

(2006/07 returns to DH, as at 4 October 2007, continued on next page.)

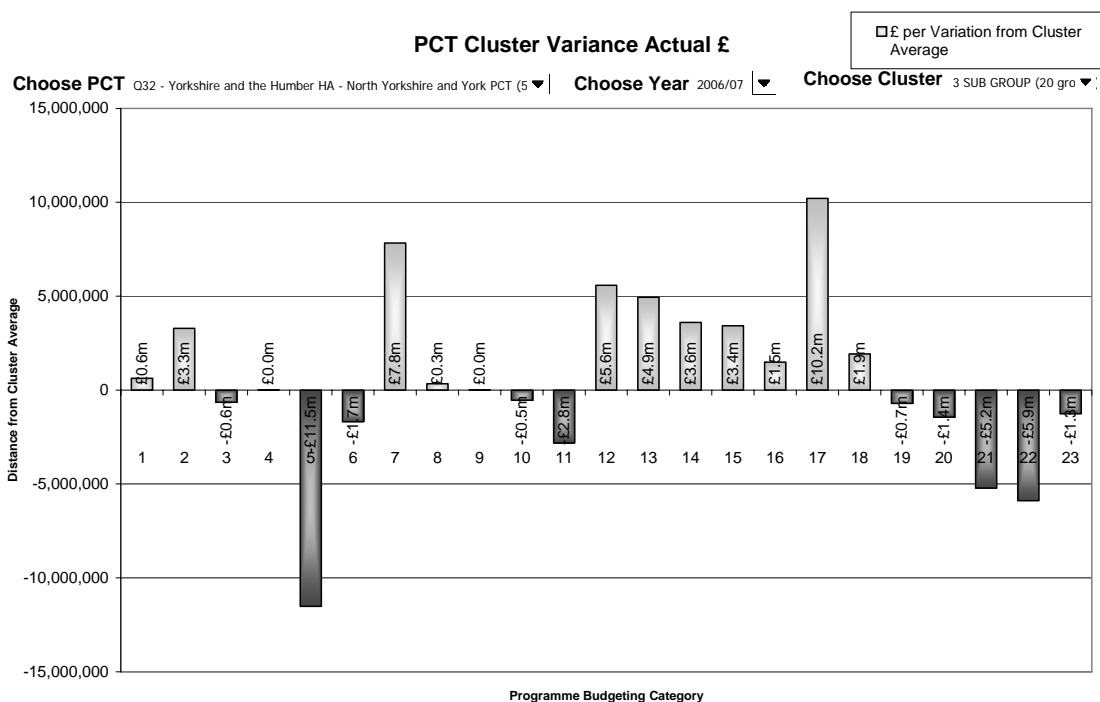
Programme Budget Category	Spend per 100,000 unified weighted population		
	NYYPCT £s	Cluster average (of similar PCTs) £s	England average £s
1 Infectious diseases	1,577,000	1,480,000	2,060,000
2 Cancers and tumours	9,282,000	8,778,000	8,178,000
3 Blood disorders	1,445,000	1,544,000	1,655,000
4 Endocrine, nutritional and metabolic problems	3,772,000	3,770,000	3,672,000
5 Mental health problems	13,758,000	15,525,000	16,603,000
6 Learning disability problems	4,784,000	5,045,000	4,834,000
7 Neurological system problems	6,953,000	5,751,000	5,533,000
8 Eye/Vision problems	3,141,000	3,090,000	2,704,000
9 Hearing problems	588,000	587,000	623,000
10 Circulation problems	13,479,000	13,561,000	12,222,000
11 Respiratory system problems	6,097,000	6,529,000	6,516,000
12 Dental problems	5,723,000	4,867,000	5,204,000
13 Gastrointestinal system problems	8,289,000	7,531,000	7,341,000
14 Skin problems	3,092,000	2,539,000	2,832,000

Programme Budget Category	Spend per 100,000 unified weighted population		
	NYYPCT	Cluster average (of similar PCTs)	England average
	£s	£s	£s
15 Musculoskeletal system problems (excluding trauma)	7,527,000	7,002,000	6,630,000
16 Trauma and Injuries (including burns)	6,267,000	6,038,000	5,736,000
17 Genitourinary system disorders (except infertility)	7,915,000	6,348,000	6,896,000
18 Maternity and reproductive health	5,423,000	5,129,000	5,771,000
19 Neonates	881,000	997,000	1,312,000
20 Poisoning	1,369,000	1,590,000	1,460,000
21 Healthy individuals	1,728,000	2,528,000	3,395,000
22 Social care needs	3,364,000	4,268,000	3,020,000
23 GMS/PMS	15,614,000	13,984,000	14,151,000
Other/Misc spend	4,892,000	6,715,000	6,807,000
Total	136,960,000	135,196,000	135,155,000

The chart below shows NYYPCT's distance from the PCT cluster average investment in each programme budget category in £s per 100,000 unified weighted population and is a graphical representation of the table above. Bars extending above the centre line indicate programmes where NYYPCT spends more than the cluster average. Bars extending below the centre line indicate programmes where NYYPCT spends less than the cluster average.



The chart below is similar to the above but instead shows the actual distance from the PCT cluster average investment in £s for each programme. For example, if we spent an additional £11.5 million in Programme 5 - mental health, we would be bringing it up to the average spend in PCTs similar to ours, or if we took £10.2 million out of Programme 17 – genitourinary system (which includes renal failure) we would be bringing it down to the average spend of PCTs similar to ours. If all programmes were brought to the average we would release around £11million – very close to our turnaround target for 2008/09.



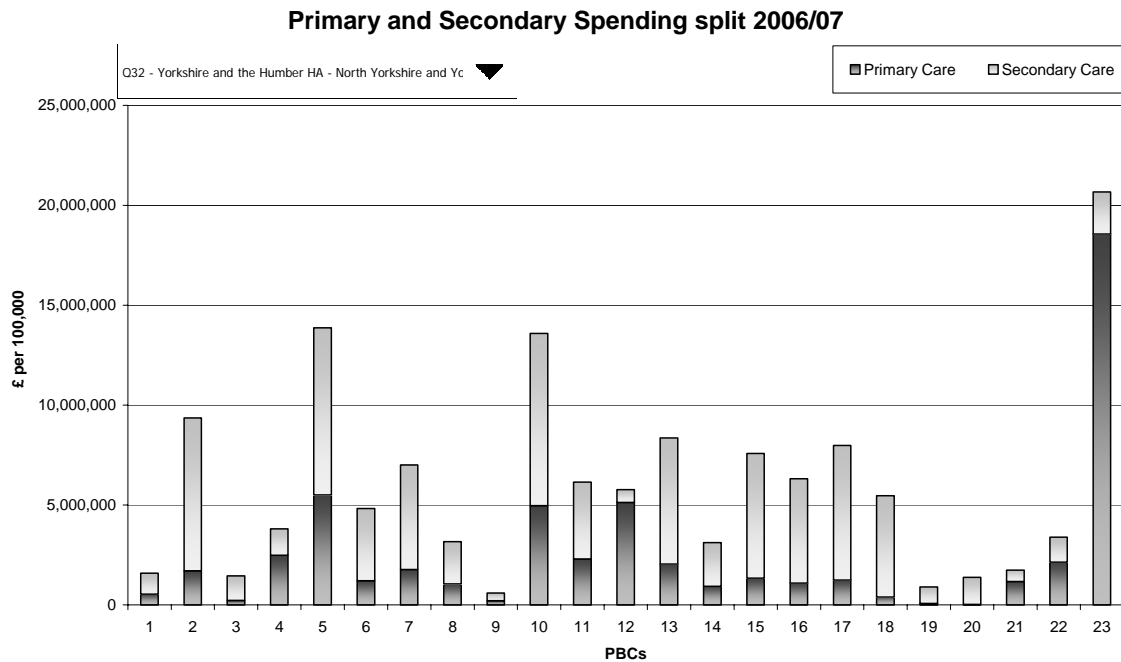
However, expenditure alone is not the determinant. We need to bear in mind the wide margin of confidence around the cost estimate, and we need to look at outcomes. We must be very careful that no money is redeployed until we have confidence that it does more good in the programme where we invest it than in the programme from which we took it. That is marginal analysis. We can also redeploy a lot of money within a programme without moving it between programmes.

The Big Picture 2:

Who were the main providers of services to NYYPCT Residents in 2006/07?

NHS Hospital Trusts	£393,975,000
○ YHFT	£141,191,000
○ HDFT	£66,413,000
○ STHT	£58,852,000
○ SNEYT	£56,469,000
General medical, dental, pharmaceutical and ophthalmic services	£143,743,000
General Practitioner medicines prescribing	£121,400,000
PCT provider services	£130,496,000
Non NHS Providers	£73,960,000
Other NHS providers	£42,746,000
Other	£30,119,000

The chart below shows how expenditure was split in £s per 100,000 unified weighted population between primary (eg GP prescribing and general dental and optician services) and secondary care services.



The single largest investment in programme 23 (other) is the GMS/PMS contract that provides our GP services. Ultimately, our investment in these contracts will be allocated to each of the PBCs.

The table on the next two pages summarises our investment in each health programme by provider. The important thing to note is that all the expenditure on GMS/PMS contracts is currently grouped into programme 23 (Other). In time, this investment will be disaggregated into the relevant Programme Budget Categories (1-22)

Programme Budget Category	Spend in £1,000s with provider							
	YHFT	HDFT	STHT	SNEYT	LTHT	ANHST	HEYT	
1. Infectious Diseases	2,176	1,080	2,237	177	403	300	101	
2. Cancers and Tumours	16,318	5,507	5,714	5,620	7,997	2,106	2,286	
3. Blood Disorders	2,897	1,488	289	647	902	406	200	
4. Endocrine, Nutritional and Metabolic Problems	2,401	2,032	688	683	522	267	114	
5. Mental Health Problems	1,004	450	63	291	63	83	12	
6. Learning Disability	1		2	2	2	1		
7. Neurological System Problems	11,343	3,393	6,502	3,782	2,072	1,281	860	
8. Eye/Vision Problems	6,014	2,777	636	2,420	793	250	152	
9. Hearing Problems	1,227	291	144	377	201	186	80	
10. Circulation problems	15,492	7,047	10,888	4,440	5,647	2,272	3,218	
11. Respiratory System Problems	8,705	3,712	2,210	3,175	1,897	1,010	501	
12. Dental Problems	1,315	365	398	427	324	160	61	
13. Gastrointestinal System Problems	14,327	5,618	4,657	8,466	2,978	1,832	499	
14. Skin Problems	5,089	2,388	3,011	1,018	1,192	407	427	
15. Musculoskeletal Problems (excluding trauma)	11,638	6,858	4,781	4,469	2,267	1,585	513	
16. Trauma and Injuries (including burns)	9,450	6,507	2,814	4,903	2,811	1,578	639	
17. Genitourinary System Problems (except infertility)	16,470	5,942	9,267	4,149	3,802	1,783	1,043	
18. Maternity and Reproductive Health	8,162	7,003	3,077	9,245	1,368	2,436	293	
19. Neonates	1,597	836	287	552	1,105	536	288	
20. Poisoning	3,252	910	773	1,134	892	259	246	
21. Healthy Individuals	1,448	1,553	45	105	140	8	69	
22. Social Care Needs	57	17	2	96				
23. Other	805	638	365	293	206	2,365	750	
Grand Total	141,191	66,413	58,852	56,469	37,584	21,113	12,353	

TEWVT	BDCT	Non NHS providers	Other NHS providers	Primary Care	Primary Care Prescribing	PCT Provider Services	YAS	Other	Total
		11	249	*	3,084	639		320	10,779
		2,721	1,820	*	5,378	6,101		1,894	63,462
		948	275	*	826	705		298	9,880
		996	279	*	14,920	1,899	223	768	25,793
12,361	3,928	30,223	-17,982	*	10,234	44,053	268	9,012	94,064
3,242	98	14,305	5,945	*		8,180		934	32,711
		2,852	1,189	*	8,231	3,852	732	1,446	47,535
		60	521	4,827	2,027	323	19	653	21,474
		18	100	*	109	1,168		115	4,018
		1,739	2,061	*	27,509	6,431	2,604	2,803	92,152
		1,075	912	*	12,723	2,938	1,571	1,258	41,686
		12	122	32,165	12	2,981		784	39,125
		982	1,514	*	12,164	1,915		1,718	56,671
		63	539	*	5,184	1,189		636	21,142
		7,763	1,288	*	4,965	3,749		1,583	51,459
		353	1,293	*	1,700	5,690	3,803	1,308	42,849
		134	1,692	*	5,220	3,012		1,599	54,114
		324	1,236	*	1,299	1,317	193	1,127	37,080
		9	209	*		472		183	6,075
		9	344	*		161	1,098	283	9,363
		34	136	*	4,225	3,693		357	11,812
		8,841	7	*		13,738		240	22,999
		490	558	106,751	1,590	16,289	8,299	798	140,197
15,603	4,026	73,960	4,308	143,743	121,400	130,496	18,809	30,119	936,439

* Investment in the GMS/PMS contracts is not yet broken up into each Programme Budget Category. At present, it is all grouped together in programme 23 (Other).

The Big Picture 3:

What were the top 10 health programmes at our **hospital providers** for NYYPCT residents in 2006/07?

Circulation problems	£49,004,000
Cancers and tumours	£45,548,000
Genitourinary system disorders	£42,456,000
Gastrointestinal system problems	£38,377,000
Musculoskeletal problems (except trauma)	£32,111,000
Reproduction and childbirth	£31,584,000
Neurological system problems	£29,233,000
Trauma and injuries	£28,702,000
Respiratory system problems	£21,210,000
Skin problems	£13,532,000
Eye/Vision problems	£13,042,000

The Big Picture 4:

What were the top 10 health programmes funded from the **GP prescribing budget** for NYYPCT residents in 2006/07?

Circulation problems	£27,509,000
Endocrine, nutritional and metabolic problems	£14,920,000
Respiratory system problems	£12,723,000
Gastrointestinal system problems	£12,164,000
Mental health problems	£10,234,000
Neurological system problems	£8,231,000
Cancers and tumours	£5,378,000
Genitourinary system disorders (except infertility)	£5,220,000
Skin problems	£5,184,000
Musculoskeletal system problems (except trauma)	£4,965,000
Healthy individuals	£4,225,000

The Big Picture 5:

What were the top 10 programmes provided by **NYYPCT's Community Services** for NYYPCT residents in 2006/07?

Mental health problems	£44,053,000
Social care needs	£13,738,000
Learning disability problems	£8,180,000
Circulation problems	£6,431,000
Cancers and tumours	£6,101,000
Trauma and injuries (including burns)	£5,690,000
Neurological system problems	£3,852,000
Musculoskeletal system problems (excluding trauma)	£3,749,000
Healthy individuals	£3,693,000
Dental problems	£2,981,000
Respiratory system problems	£2,938,000

The Big Picture 6:

What was the age breakdown, by programme, for numbers of NYYPCT residents admitted to any hospital in 2006/07?

The table below shows the ages of admissions within the programme budget categories for 2006/07.

Source: Healthcare purchasing system, NYYPCT

Programme	Categ	Age group (years)							Total
		0-4	5-14	15-44	45-64	65-74	75-84	85+	
Infectious Diseases	1	630	123	218	177	100	130	93	1471
Cancers & Tumours	2	194	295	2706	9465	6842	5594	1474	26570
Blood Disorders	3	51	71	577	948	664	899	310	3520
Endocrine, Nutritional & Metabolic Problems	4	103	208	943	926	507	296	149	3132
Mental Health	5	59	56	827	498	175	342	197	2154
Problems of Learning Disability	6	9	4	16	10	1	1	0	41
Neurological	7	430	758	4796	5289	2459	2225	1247	17204
Vision	8	137	108	384	964	1446	2252	948	6239
Hearing	9	277	316	202	167	72	36	14	1084
Circulatory	10	100	109	1082	3621	3283	3438	1733	13366
Respiratory	11	1866	675	1566	1653	1391	1656	1164	9971
Dental	12	156	750	1008	224	61	32	13	2244
Gastro-intestinal	13	1086	541	4890	7390	4000	3299	1371	22577
Skin	14	316	198	1222	1044	468	405	213	3866
Musculo-skeletal	15	259	241	2135	3437	2038	1443	378	9931
Trauma & Injury	16	469	842	2542	1263	665	1198	1181	8160
Genito Urinary	17	385	392	4066	4849	2761	2515	1066	16034
Maternity & Fertility	18	3721	2	16380	207	0	0	0	20310
Neonate Conditions	19	1368	7	3	0	0	0	0	1378
Poisoning & Adverse Effects	20	164	166	1593	874	449	458	171	3875
Healthy Individuals	21	354	109	372	451	169	112	30	1597
Social Care Needs	22	6	1	47	117	109	129	69	478
Other areas of Spend	23	166	55	454	679	415	381	266	2416
ALL	ALL	12306	6027	48029	44253	28075	26841	12087	177618

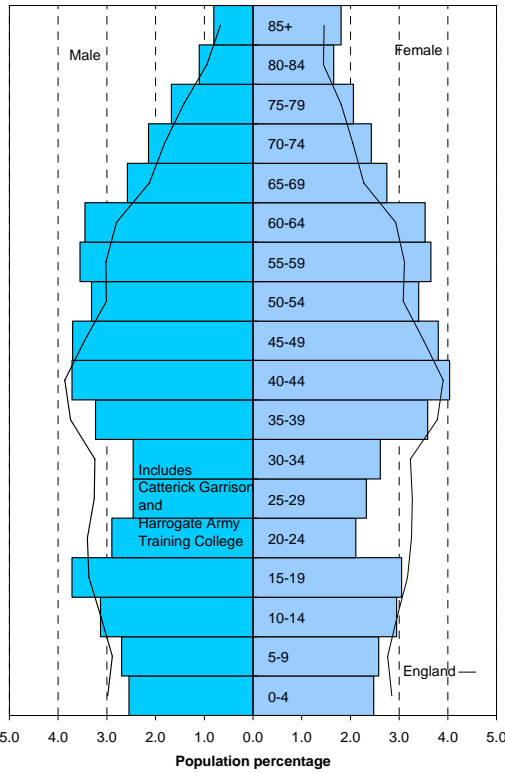
We do not yet have the full age-based programme budget estimates – that is a development that the national project board is working on. The table above shows the numbers of in-patient spells that people in North Yorkshire needed in 2006/07 by chapter of the International Classification of Disease (ICD 10), mapped to programme budget category.

This table shows only admissions to hospital, and gives no insight into the impact on general practice or community services. However, hospital care is the most expensive form of healthcare and this sort of information can help to identify the health programmes where the greatest effort may need to be refocused on prevention. In addition, it can also stimulate a discussion about how care pathways could be redesigned to provide care that might be more appropriately delivered outside hospital – or where the staff employed by the hospital could follow the patient out into a community setting – in a GP surgery, cottage hospital or patient's own home.

The following population pyramids current and projected 10 years into the future show how the different age groups will change in size as we move from where we are now to having a larger and older population. We need to anticipate and plan for this older population so that our investments and plans follow these trends.

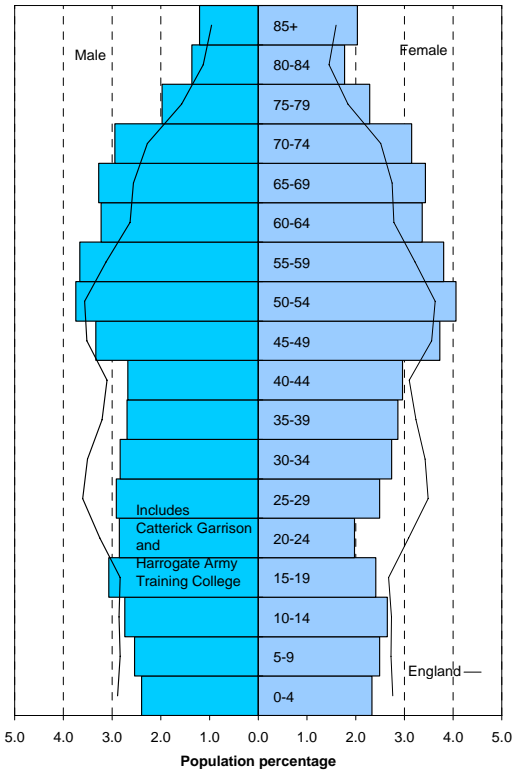
2007 and 2017 Population Pyramids

**North Yorkshire County Council
2007 Population Pyramid**



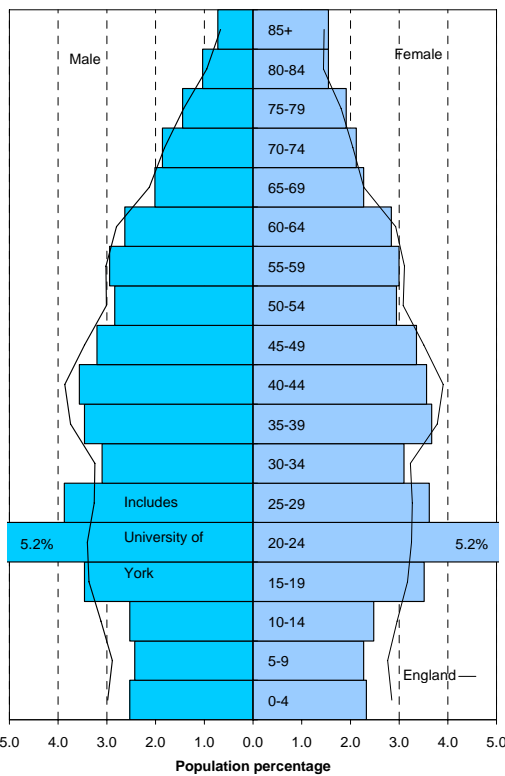
Source: ONS 2004 Revised population projections (August 2007)

**North Yorkshire County Council
2017 Population Pyramid**



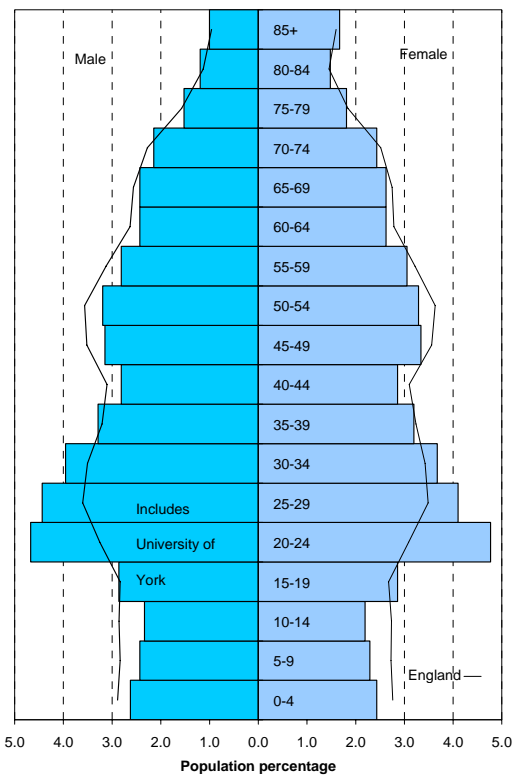
Source: ONS 2004 Revised population projections (August 2007)

**City of York Council
2007 Population Pyramid**



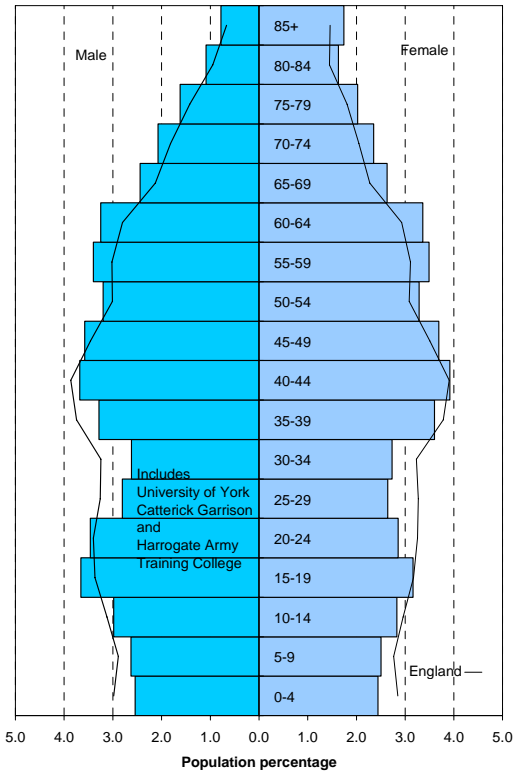
Source: ONS 2004 Revised population projections (August 2007)

**City of York Council
2017 Population Pyramid**



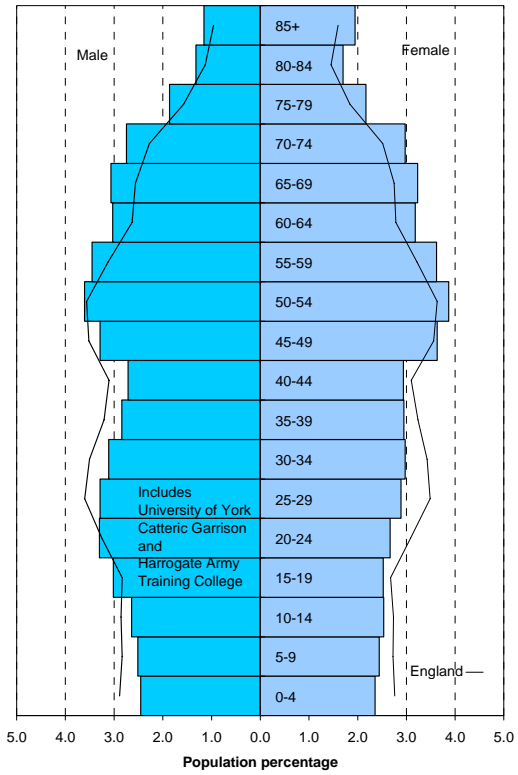
Source: ONS 2004 Revised population projections (August 2007)

**North Yorkshire and York PCT
2007 Population Pyramid**



Source: ONS 2004 Revised population projections (August 2007)

**North Yorkshire and York PCT
2017 Population Pyramid**



Source: ONS 2004 Revised population projections (August 2007)

The Big Picture 7: Inequalities by programme

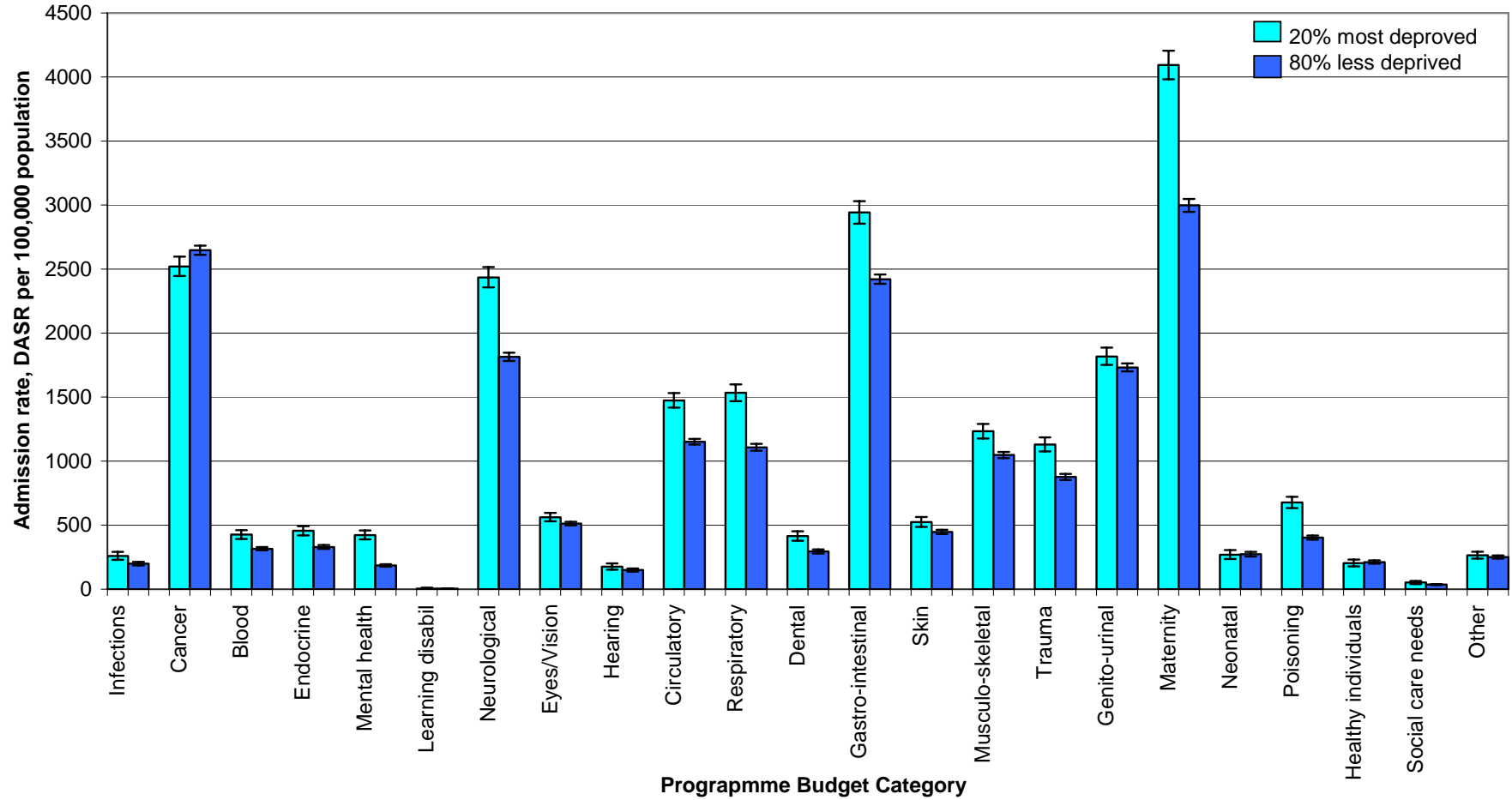
What, and where, are the major inequalities in health that might have a bearing on future resource deployment?

The chart below shows the hospital admission rates in the most deprived areas of our PCT (at the level of “lower super output area = LSOA), and compared with the rest of the population.

(Directly age-standardised rates = DASR)

Source: Office of National Statistics

**Directly age standardised hospital admission rates (with 95% CIs) 2006/07
20% Most deprived LSOAs vs 80% less deprived within North Yorkshire and York PCT**

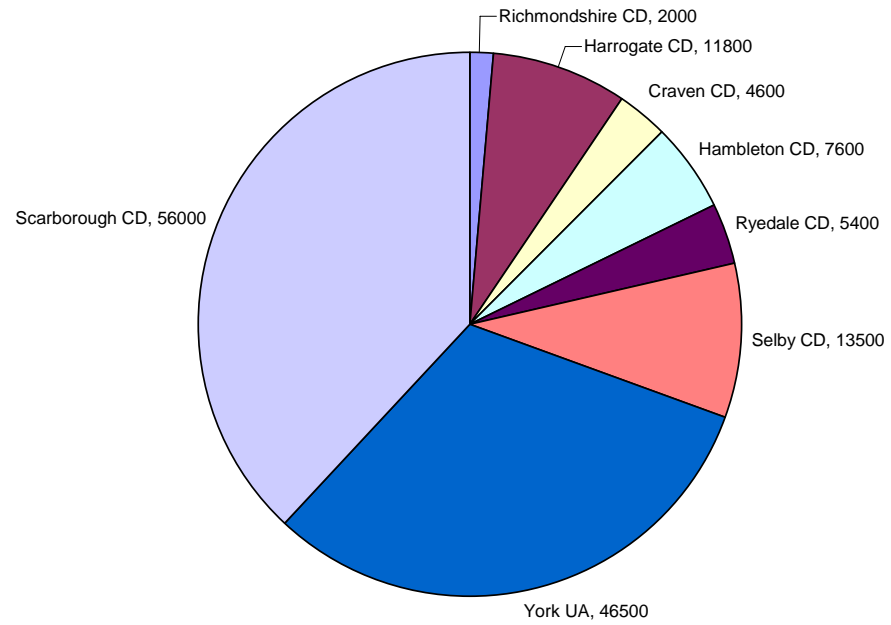


Source: HPS/ODPM

The next two pie charts describe the patterns of socio-economic deprivation that exist in North Yorkshire. The first chart shows the actual numbers of people residing within the most deprived 20% of Lower Super Output Areas (a geography defined by the Office for National Statistics). The second chart presents this as the percentage of the local authority populations that reside within the most deprived LSOAs.

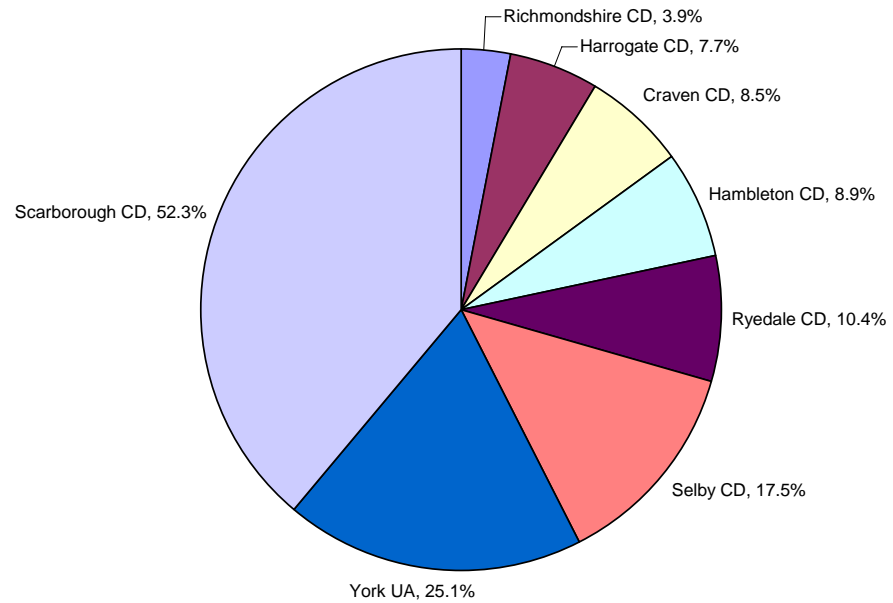
Scarborough has the largest numbers of people residing within the most deprived areas of North Yorkshire, followed by York. However, deprivation is more concentrated in Scarborough where over half the people reside in the most deprived 20% of LSOAs, compared to York where it is 1 in 4 people. Across the rest of the county, there are pockets of deprivation and up to 1 in 10 people live in each of the other districts reside within the 20% most deprived LSOAs.

Populations in 20% most deprived LSOAs within North Yorkshire and York



Source: ONS 2004 experimental mid-year population estimates

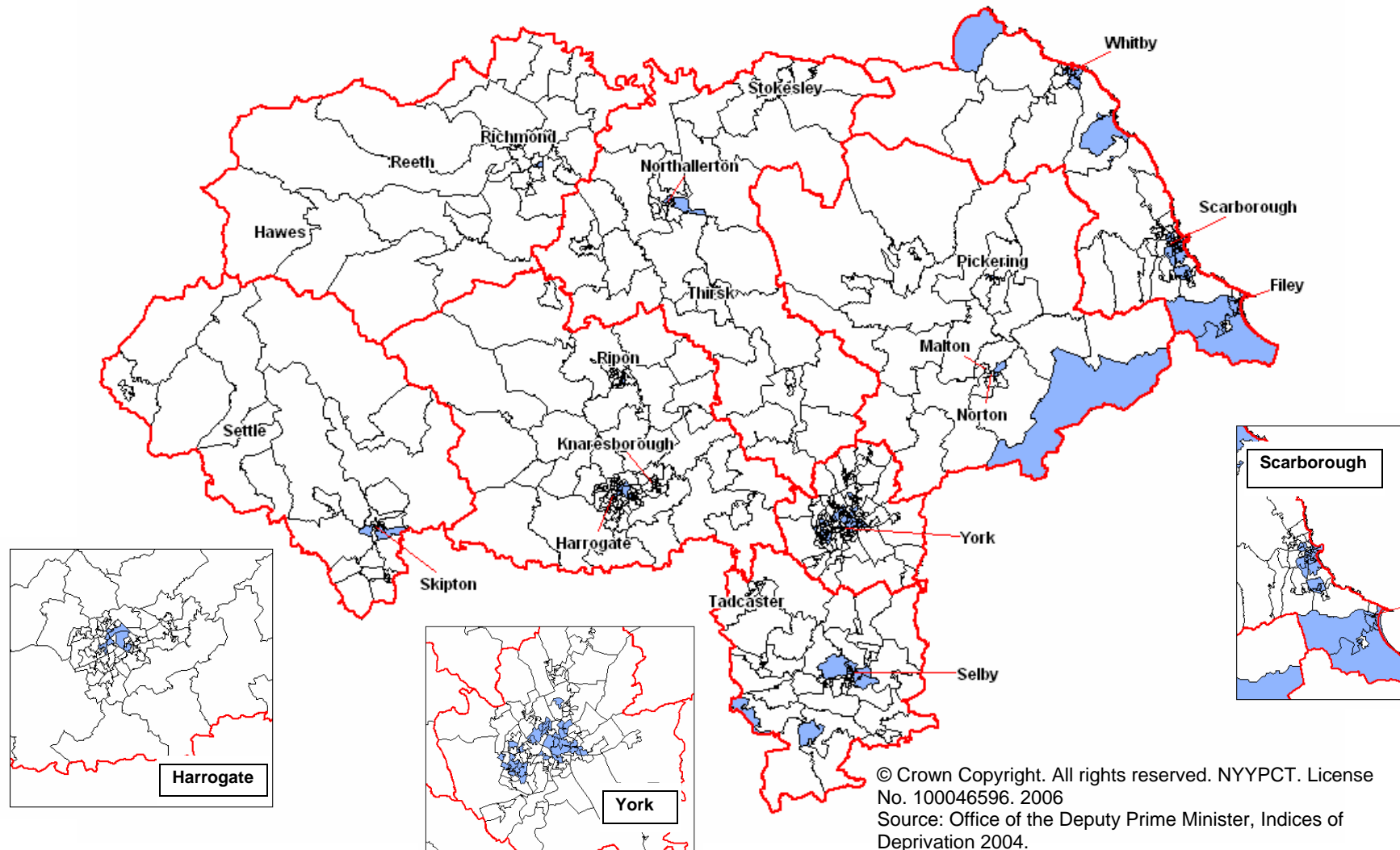
Percent of Local Authority populations from 20% most deprived LSOAs in North Yorkshire and York



Source: ONS 2004 experimental mid-year population estimates

The map on the next page illustrates where the pockets of deprivation are in North Yorkshire. They are distributed across the county but are most concentrated in Scarborough, followed by York.

Map of the 20% most deprived lower super output areas in North Yorkshire and York PCT



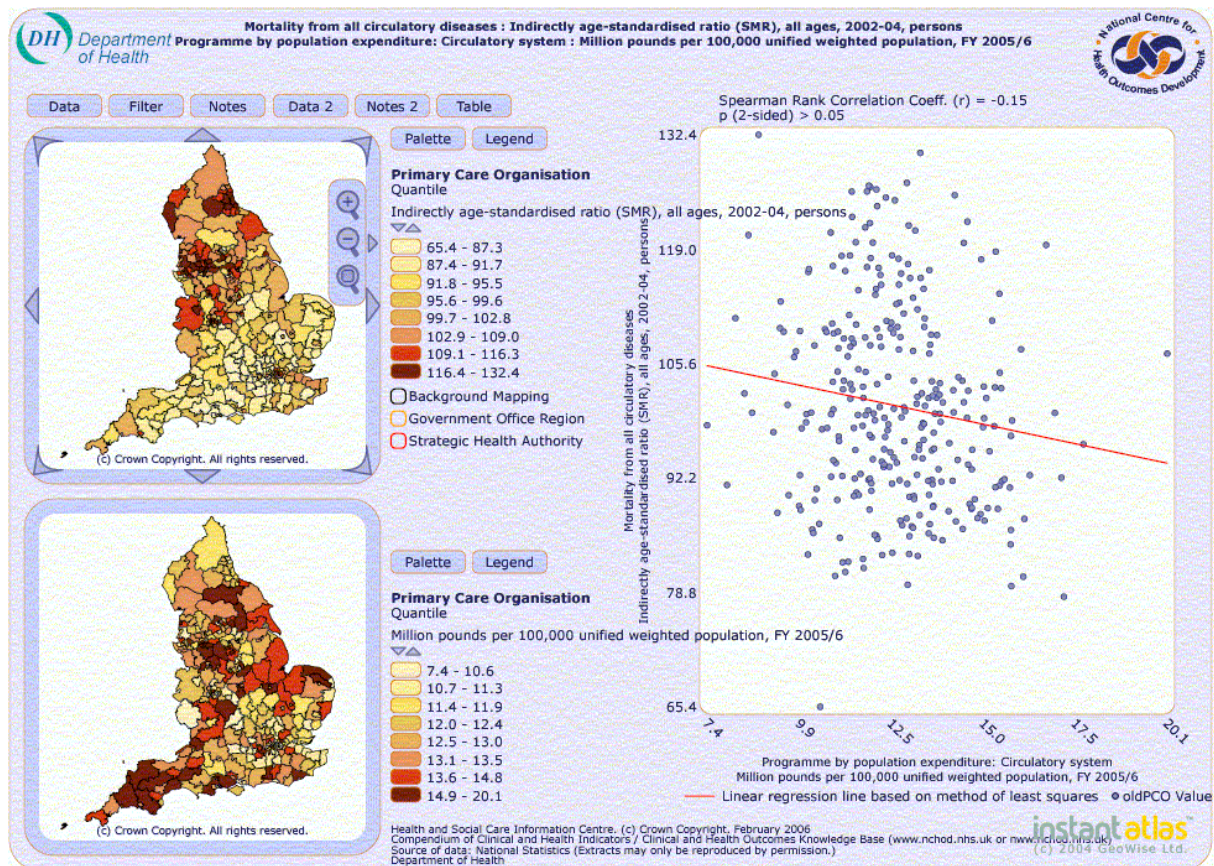
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Source: Office of the Deputy Prime Minister, Indices of Deprivation 2004.

The Big Picture 8: Mapping expenditure to outcomes

Work in progress with DH/NCHOD (www.nchod.nhs.uk)

During 2008 these maps will be redrawn to the new PCT boundaries.

Mapping health activity or outcomes (in this example the outcome of standardised mortality ratios for circulatory diseases in 2002-04) against reported per capita spend on the circulatory disease programme in 2005/06, for all PCTs in England.



This example is taken from circulatory disease. Maps like these have been drawn up for 16 programme areas so far, with the rest to follow by the end of 2008. Various cross-tabulations are possible.

Equity, Effectiveness and Efficiency

The horizontal axis in this example shows reported per capita expenditure by each PCT. This addresses an “**equity**” question – ie fair shares of resource inputs.

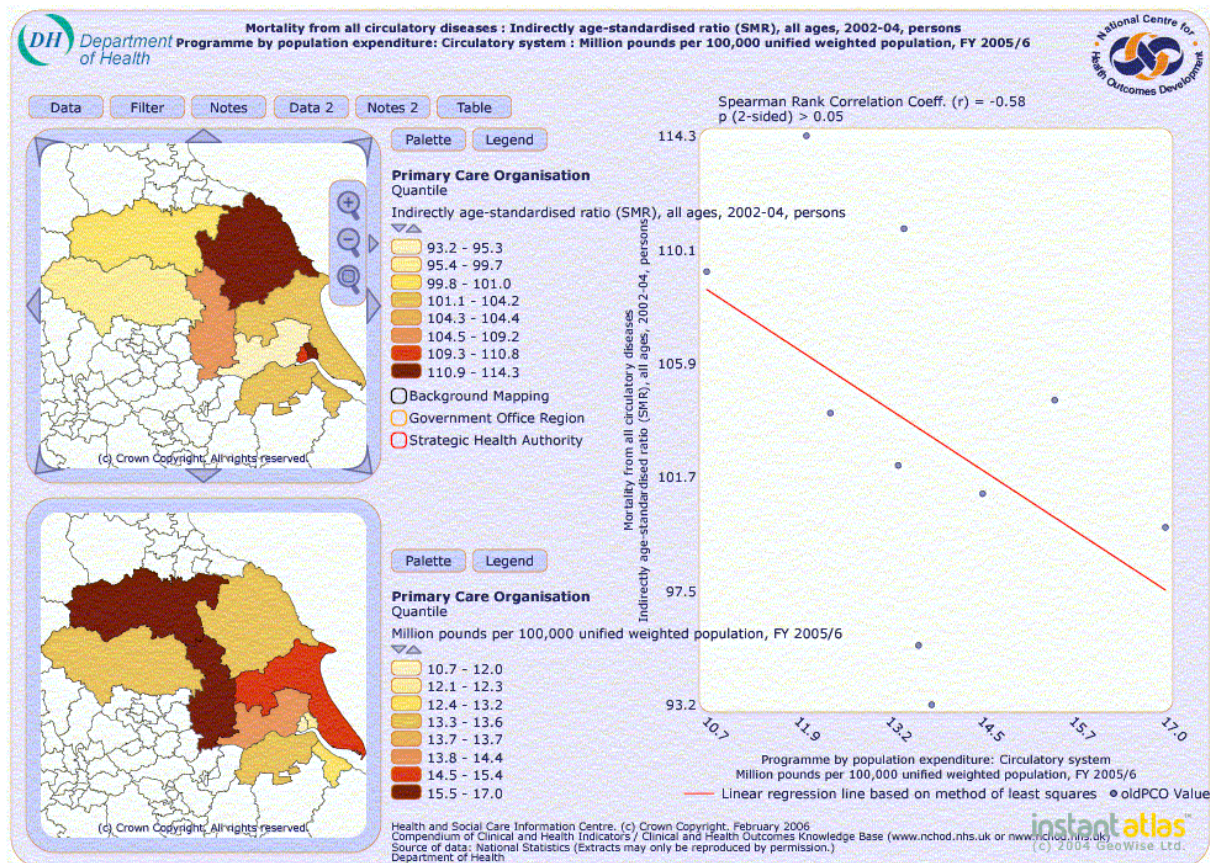
The vertical axis in this example shows standardised mortality ratios. This addresses an “**effectiveness**” question, ie how long do people live?

Relating one to the other addresses an “**efficiency**” question, ie how do inputs relate to outcomes?

The important question is how to get the PCT into the bottom left hand quadrant of the chart in every programme. In that quadrant the investment is low and the outcome is favourable (low death rate in this example).

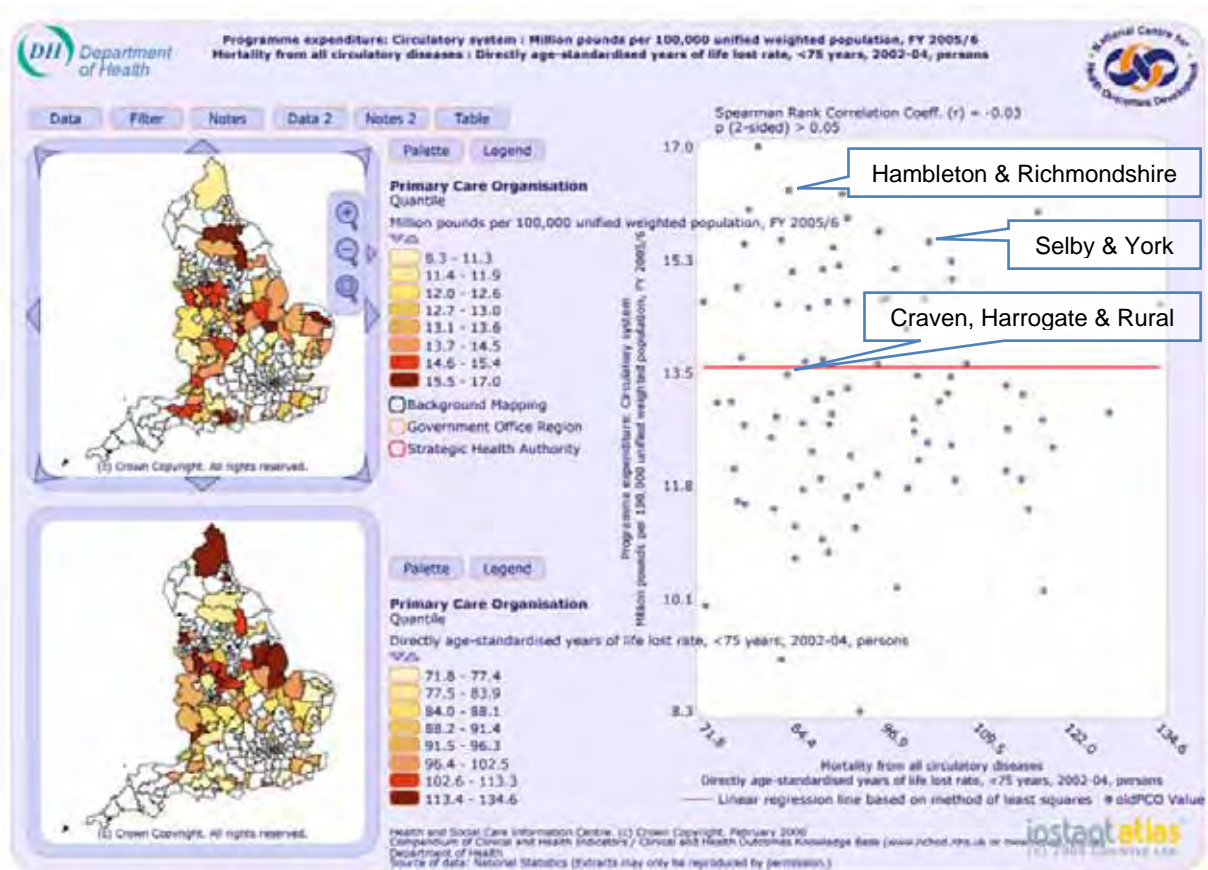
A good place to start the move into the lower left quadrant is to find a PCT with a similar population profile that is already down there, and then ask them for their model of service delivery.

This is a more focussed view. Here are just those PCTs in the same **strategic health authority** as ours, mapping health outcomes (standardised mortality ratios for circulatory diseases, 2002-04) against reported per capita spend on the circulatory disease programme 2005/06.



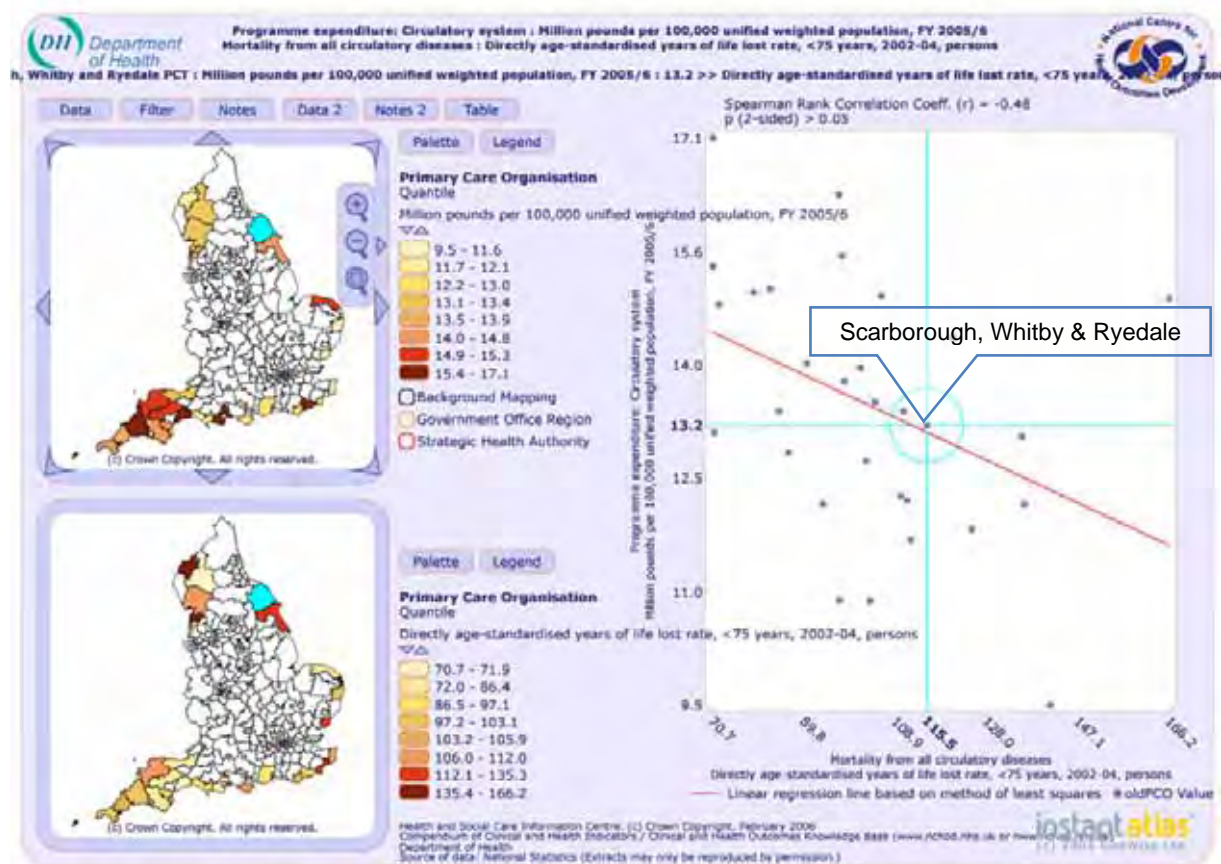
This is an example of “**filtering**” to get a better understanding. It focuses down onto our Strategic Health Authority area. The variations might be of interest to local cardiac networks or local cardiac and stroke centres.

Here is yet another view. These are just those PCTs in the same **ONS cluster** as Craven, Harrogate and Rural District, Hambleton and Richmondshire and Selby and York (Prospering smaller towns) and as Scarborough, Whitby and Ryedale (Coastal and Countryside) respectively, mapping health outcomes (standardised mortality ratios for circulatory diseases, 2002-04) against reported per capita spend on the circulatory disease programme 2005/06.



The above is another example of **“filtering”** to get a better understanding, in this instance by the PCTs who make up the cluster of “Prospering smaller towns” as defined by the Office of National Statistics. Comparisons with peer PCTs are often the most helpful to commissioners of services. In the above example, the former Craven, Harrogate and Rural District PCT had an average expenditure and average outcome, Hambleton and Richmondshire PCT had above average expenditure and average outcome and Selby and York PCT had above average expenditure and worse than average outcome.

Another example of filtering:



In this example, the PCTs that make up the cluster “Coastal and Countryside” are shown. Compared with demographically similar PCTs, the former Scarborough, Whitby and Ryedale PCT had average expenditure but a worse outcome.

The amalgamation of the above former PCTs into the North Yorkshire and City of York PCT has resulted in a loss of smaller area comparability for now. Ultimately, it is envisaged that PBC data including outcomes data will be available at practice level providing much more detailed information to guide commissioning.