

Cambridgeshire and Peterborough

**Population growth and capacity planning
for health and social care**

Second Edition

January 2006

Commissioned by Cambridgeshire Horizons Health Forum

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Preface to the second edition

This January 2006 edition of the Population Growth and Capacity Planning for Health and Social Care report replaces the first edition, published in August 2005. While the August edition had a limited circulation, the second edition is intended to reach a wider audience.

The majority of the second edition is the same as the first, although there have been some changes. Both the primary care chapter and the social care chapter have been revised considerably. The methodologies and scenarios remain the same but baseline indicator data have been changed. In the primary care chapter this corrects an error in the application of baseline workforce data. In the social care chapter it adjusts the baseline, following feedback on the exact indicator definitions, correcting for double counting in the original analyses. These changes have been reflected in a revised executive summary and revised PCT summaries in Chapter 10. These changes have not substantially altered the main findings of the first edition.

The level of population growth planned for Cambridgeshire and Peterborough presents a major challenge for local government, the NHS and service providers. The authors wish to emphasise that the analyses contained within this report provide a sense of the magnitude and likely direction of change; they do not, and cannot, provide specific answers. The complexity of the strategic planning decisions ahead requires an on-going, iterative dialogue between service planners and analysts, considering new service models and ways of working as they arise, and ensuring that the latest information about the location and scale of new developments are considered. This report informs the start of this process, but cannot act as a substitute for it. By working and learning together we can use the wealth of experience and expertise available locally to develop imaginative and innovative solutions to the challenges posed by the growth agenda.

Population Growth and Capacity Planning for Health and Social Care

January 2006

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Executive summary

- This study assesses the population consequences of planned housing development in Cambridgeshire and Peterborough and the implications for health and social care.
- The principal study outputs are:
 - population forecasts for local authority districts, primary care trusts (PCTs) and wards, by age, to 2021;
 - an assessment of the impact on health and social care capacity.
- Health and social care requirements are modelled under two scenarios:
 - A *population-led* scenario: provides information on future activity and demand based on demographic change only.
 - A *Closer to Home* scenario: as well as population growth, the implications of potential service changes are assessed, principally those associated with decreasing dependency on acute hospitals through the development and expansion of primary, community and social services. The impact of patient expectation and improved health-related behaviour on the population's health are also considered.

Population

- Cambridgeshire and Peterborough's population is forecast to grow by 22%, with the greatest percentage population changes in South Cambridgeshire (35%) and Cambridge City (33%). Increases are forecast for all ages but the greatest change is forecast in the population aged over 85, which is forecast to increase by 86%. The lowest increase is forecast in children aged 5 to 14, with an increase of just 7%.
- Most rural areas are forecast to show a stable or slightly declining population to 2021. The areas of greatest population growth between 2001 and 2021 are:
 - The new settlement of Northstowe.
 - Hampton, in Peterborough, along with Paston to the east of the city.
 - Cambridge City and the wards bordering Cambridge to the north, east and southwest.
 - Cambourne (where much of the growth has already occurred).
 - The market towns of St Neots, Huntingdon, Chatteris, Wisbech, March, Ely and Littleport.

Health and social care capacity modelling

- Section 10 summarises the outcomes of the health and social care capacity modelling from each PCT's perspective. Overall, population growth in Cambridge City PCT will lead to additional demand for services aimed at children, young people and people of working age. In East Cambridgeshire and Fenland PCT and Huntingdonshire PCT the ageing population will be the principal driver for additional services. In South Cambridgeshire PCT, population change relating to new settlements will lead to requirements for services for young families in particular, while population ageing in the rest of the PCT will increase

demand for services relating to older people. A similar pattern is forecast for Peterborough, although overall population change is less marked.

- The health and social care modelling work summarised below provides a foundation for planning for the future, giving a sense of the magnitude and direction of change under a range of different service scenarios. The results illustrate possible visions of the future; these are not visions that have been agreed by local organisations and should not be interpreted as statements of intent.

Secondary care

- Based on population growth alone, outpatient attendances across Cambridgeshire and Peterborough will rise by 27%. If 30% of attendances were re-provided in a primary or community setting (treated, perhaps, by GPs with Special Interests), this would amount to 204,500 attendances, reducing attendances in a hospital setting by 11%.
- Population growth alone would lead to a 28% rise in day case and elective inpatient admissions by 2021, and a 30% increase in emergency inpatient admissions (excluding maternity related emergency admissions). Assuming higher elective admission rates in the future, but with a higher proportion treated as day cases, day case admissions could nearly double by 2021. This would reduce the elective inpatient admissions increase to 19%.
- Population growth alone suggests a requirement for an additional 35 day case beds and 81 elective inpatient beds by 2021 (a 31% increase in elective beds overall). Assuming higher elective admission rates in the future, but with more patients treated as day cases, additional day case bed requirements would rise to 125 extra beds (a 97% increase), but elective inpatient bed requirements would fall slightly to 78 additional beds (a 32% increase overall).
- If a considerable reduction in length of stay (LOS) in hospital and reduced bed occupancy levels were achieved, coupled with increased elective activity with more activity performed as day cases, elective inpatient bed requirements could fall by up to 12% (a reduction of 30 beds). Bed requirements are very sensitive to changes in LOS and bed occupancy rates and the situation described could change markedly if assumptions about these variables differ.
- In terms of emergency inpatient bed requirements, population change alone would mean a 45% increase in the beds needed in Cambridgeshire and Peterborough by 2021, equating to 483 additional beds. If marked reductions in LOS and bed occupancy rates were achieved, this could lead to a 6% decrease in emergency bed requirements, which equates to 63 fewer beds. Increased health seeking behaviour and improvements in population health, coupled with these decreases in LOS and bed occupancy, suggest only a 4% increase (44 beds) in the beds needed, despite the likely increases in emergency activity.

- Population change alone suggests a 20% increase in total A&E attendances in acute hospitals across Cambridgeshire and Peterborough by 2021. This would amount to 161,800 total attendances. Significant improvements in health seeking behaviour and the development of community based minor injury facilities could reduce the numbers of attendances by up to 40%, to around 81,000.
- Population change alone would mean that emergency calls resulting in an ambulance response could increase by a quarter in Cambridgeshire and Peterborough by 2021. Patient journeys would also increase by 25%. The number of ambulance responses is likely to decrease slightly in the future, with more appropriate health seeking behaviour and improving population health, but this is countered by potential increases attributable to the enhanced role of paramedics and care provided closer to home. Assuming that there were no change to overall ambulance response rates in the future, if 20% more call-outs were treated at home, the number of patient journeys made would remain at current levels.

Primary and community care

- Estimates of general practice activity indicate that population change alone would mean a 24% increase in primary care consultations in Cambridgeshire and Peterborough as a whole by 2021. This would require a 23% increase in GP whole time equivalents (WTE) and a corresponding 25% increase in practice nurse WTEs. These increases equate to 102 additional GP WTEs and 63 practice nurse WTEs. A shift in treatment patterns from an acute hospital setting to primary care and community settings, compounded by similar sector shifts linked to changes in health seeking behaviour, could give rise to a 77% increase in primary care visits. If these changes were combined with a 20% shift towards practice nurse delivery, an additional 318 GP WTEs and 289 additional practice nurse WTEs would be required.
- Population change alone would mean a 58% increase in district nursing patient contacts in Cambridgeshire and Peterborough by 2021 and a need for 67 additional district nurse WTEs. Relatively small annual increases in intensive homecare, driven by policy directives to shift care into a community setting, could mean an 89% increase in patient contacts by 2021. This implies an 83% increase over the current level of district nurse WTEs, amounting to 104 additional WTEs.

Social care

- Population growth alone would lead to a 47% rise in requirements for local authority supported older people's services in Cambridgeshire, and a 61% rise in Peterborough. In Cambridgeshire, this equates to an additional 920 people requiring supported accommodation (residential, nursing or extra sheltered), another 2,010 people being helped to live at home, and 360 households receiving intensive homecare. For Peterborough, an extra 340 people would require supported accommodation, another 1,220 would be helped to live at home, and 130 would require intensive homecare.
- Structural changes to services for older people will have a substantial effect on service requirements, particularly in relation to the provision of extra care housing and residential home places. In comparison, possible health improvement among older people in the future will have only a minor effect.

1 Background and scope

1.1 Introduction

The London-Stansted-Cambridge-Peterborough corridor is one of four growth areas identified by the Office of the Deputy Prime Minister as requiring additional investment to tackle housing shortages. The Cambridgeshire and Peterborough Structure Plan¹ indicates that there will be an additional 47,500 new dwellings built by 2016. The draft Regional Spatial Strategy², which in time will replace the Structure Plan, indicates a similar level of growth through to 2021. In total, 89,300 dwellings are currently planned between 2001 and 2021. The planned housing growth must be supported by local infrastructure to ensure its viability and sustainability and this should include comprehensive health and social care services.

Cambridgeshire Horizons is the organisation overseeing the delivery of this development in the Cambridge Sub-Region. The Health Forum is a sub-group of Cambridgeshire Horizons and represents health and social care agencies from across Cambridgeshire. It has a remit to identify the effects of population growth on health and demand for services. The Health Forum has commissioned the Cambridgeshire and Peterborough Public Health Network, in association with Anglia Support Partnership and the Cambridgeshire County Council Research Group, to undertake an initial analysis of population growth and capacity planning.

1.2 Area of study

Cambridgeshire Horizons oversees the delivery of development in the Cambridge Sub-Region, where a significant proportion of the county's development is likely to occur. As the focus of this study is health and social care capacity, the analysis will be carried out principally at Primary Care Trust (PCT) level. Map 1.1 overleaf shows the Sub-Region in relation to the local administrative and health geography. The Sub-Region comprises two complete PCTs, along with parts of two others. This study covers the whole of Cambridgeshire and Peterborough, thereby setting the Sub-Regional development in the context of the local health economy.

The key areas for growth in the Sub-Region, as identified in the Structure Plan, are:

- Within the built up area of Cambridge;
- As an extension to Cambridge on land to be removed from the Green belt;
- In the new town of Northstowe;
- Within or as an extension of the surrounding market towns.

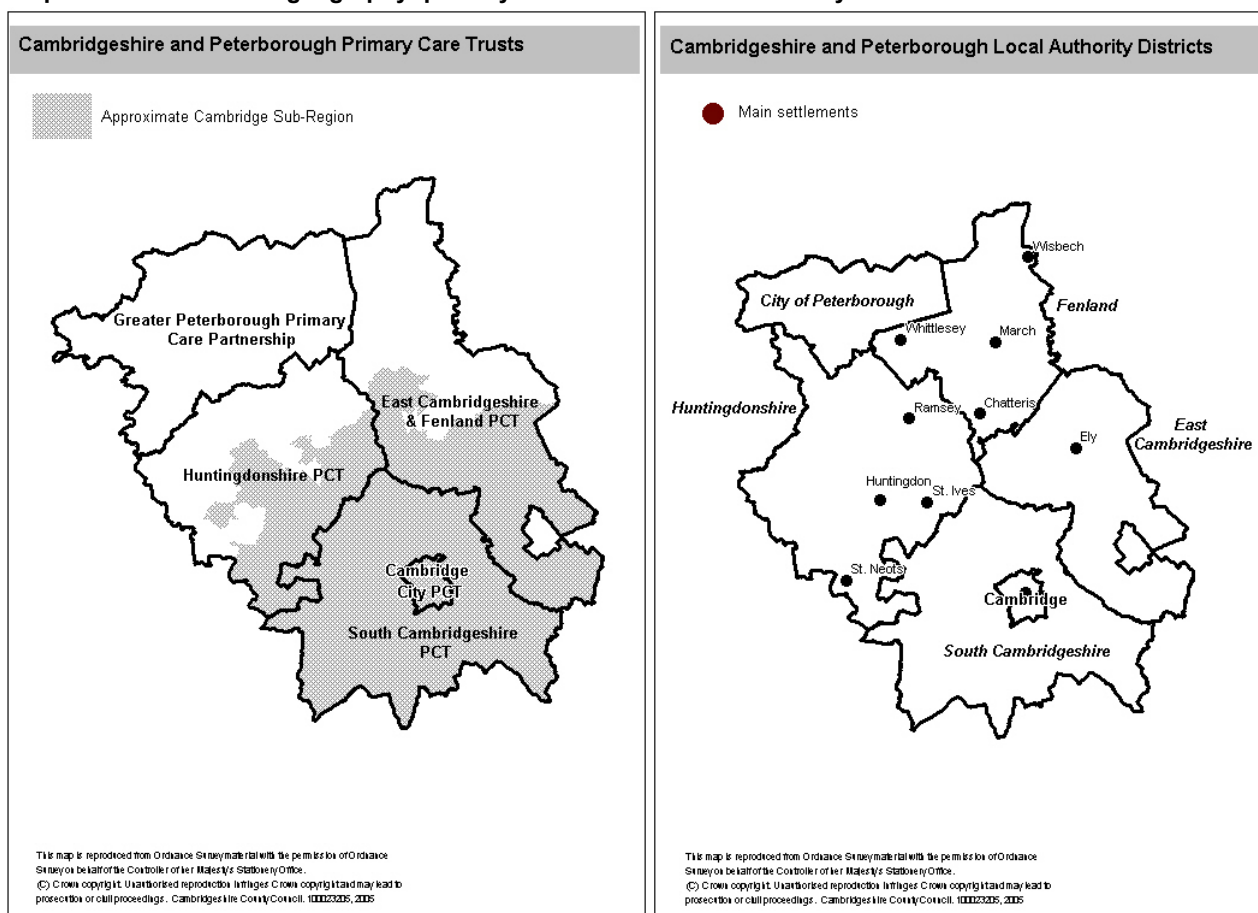
The analysis considers growth identified in these areas and those outside the Sub-Region, along with growth indicated by the Local Development Frameworks of the local councils and the effects of demographic change in the existing population. While much of the capacity

¹ **Cambridgeshire County Council and Peterborough City Council.** Cambridgeshire and Peterborough Structure Plan 2003 – Planning for success. Available on-line at www.cambridgeshire.gov.uk/environment/planning/policies/structure+plan.htm

² **East of England Regional Assembly.** East of England Plan – draft revision to the Regional Spatial Strategy (RSS) for the East of England. EERA 2004. Available on-line at www.eera.gov.uk/category.asp?cat=452

analysis is carried out at PCT level, a key output of the study is a complete set of ward level population forecasts by age group.

Map 1.1: Administrative geography: primary care trust and local authority boundaries



1.3 Project outline

This work aims to assess the population consequences of planned housing development in Cambridgeshire and Peterborough and the implications for health and social care. In assessing future requirements for health and social care, likely changes to the way that services are delivered are considered.

The quantitative aspect of the project has two main elements:

- the production of population forecasts for local authority districts, PCTs and wards, by age, to 2021;
- an assessment of the impact on health and social care capacity, given the level of provision for specific services in relation to population size, allowing for major policy changes to the way services may be delivered in the future.

1.4 Project brief

The following are the key project requirements, as agreed with the Health Forum:

- mapping of current service models and priorities for change across local health and social care commissioners and a review of key similarities and differences;
- dwelling based population forecasts, used to understand planned growth across this area and assess the likely impact of different assumptions on health and social care requirements (in terms of workload and workforce) and to make risk assessments;
- identification of the likely geographical location and area of impact (e.g. social services, primary care and community services, acute services and chronic disease);
- identification of the likely timing of impacts;
- establishment of a minimum change scenario describing activity, capacity, workforce and financial implications of the population growth using existing service models and current priorities for change;
- establishment of a “Closer to Home” scenario that suggests the impact of alternative models of care that emphasise long term conditions’ management, intermediate care and primary care provision as alternatives to hospital admission.

2 Study parameters and the policy context

This section discusses the approach taken to the study, outlining the study parameters and describing some of the limitations of the work. Themes that have not been included in the study are discussed. The section then places the study within the national and local policy context.

2.1 Study parameters

The study assesses population growth and health and social care capacity from the present until 2021. The baseline position chosen relates to the mid-2003 population and, where possible, the 2003/2004 financial year for activity data. The timeframe of the study is therefore long, extending well beyond current health and social service planning periods. It is important to emphasise that the results of the study do not represent the policy of any PCT or local authority. Instead, the results present a foundation for planning for the future, providing a sense of the magnitude and direction of change under a range of different service scenarios. The results are intended to illustrate possible visions of the future; these are not visions that have been agreed by local organisations.

Uncertainty about the future increases the further ahead we look and it will therefore be necessary to monitor actual population growth and service changes on an ongoing basis. The study runs to 2021, with interim data given for 2006, 2011 and 2016. These data represent a trend-based position between the present and 2021. In particular, the 2006 position does not reflect the short-term policy of any local organisations or local authorities. Throughout the report the interim data are presented in italics, emphasising that they are for illustrative purposes only. Where service change is modelled, it is assumed that no change is delivered by 2006. One-third of the change is assumed by 2011, two-thirds by 2016, and the complete change by 2021.

The study uses simple modelling methods, recognising the limitations of available data and uncertainty about the future, particularly in the light of organisational changes. Locally specific data is used wherever possible. A set of core measurable indicators forms a baseline that identifies current estimated activity in primary, community and secondary. Health and social care services are undergoing wide-ranging modernisation changes and, while the study could attempt to produce scenarios that reflect all these changes, the reliability of the predictions would not be robust due to the large degree of uncertainty about their rate and scope. Therefore the scope of the study is clearly delineated to focus on two main scenarios:

- A “population-led” scenario – provides information on future activity and demand based on demographic change only. All other variables are assumed to show no change.
- A *Closer to Home* scenario – where, as well as population growth, the implications of potential service changes is assessed. These changes are discussed in more detail in 2.5 below.

The study focuses on future activity levels and bed requirements. Some workforce elements are considered. The study does not attempt to identify the precise requirements for estates but identifies areas where changes in models of care could have implications for both primary

and secondary estates. The study provides a framework for assessing where resources will be required but does not include a detailed financial analysis. Key risk factors are identified although in most cases these are not analysed quantitatively.

2.2 Acute services

There has been some discussion concerning the relationships between this study and other capacity studies, specifically the Secta report³, that have focussed on acute services themselves. While the study presented here aims to assess changes to local acute activity, this is from the perspective of the PCTs rather than that of a major provider such as Addenbrooke's Hospital. This work is about the broader effects of population change on the wider health and social care system. There is therefore an issue about the level of detail it is appropriate and possible to employ here. Specifically:

- While the impacts of population growth on the acute setting are considered in some detail, the focus is on activity change from a PCT perspective.
- While the findings of other reports should be used appropriately, the aim is not to replicate the work. This study should be considered alongside these studies if an overview of the local situation is to be gained.
- The Secta report is based on Addenbrooke's catchment population and not the resident population of Cambridgeshire and Peterborough.
- The potential influence of patient choice and demand is not clear at this stage. After six months we have observed negligible effects on activity, but accept that this could change in the future.

2.3 Mental Health

Originally it was envisaged that this study would include future requirements for mental health services. Since the study was commissioned, however, it has been agreed that an assessment of mental health capacity will be undertaken by the Sainsbury Centre for Mental Health. The Sainsbury Centre are experts in this area and it is important to avoid duplication of effort. Once the Sainsbury Centre report has been published, should further local work be required, additional analyses could be carried out at that point. The demographic data contained in this report have been supplied to the Sainsbury Centre; their findings will therefore complement this study.

2.4 Social Services

This study addresses social services capacity in terms of services for older people, in part because of the extent to which services for older people are integrated between the PCTs and local authorities. For older people, the distinction between "social" services and "health" services is blurred. Furthermore, population ageing means that demand for services will be closely related to demographic change. The study was not extended to include children's

³ **Scott M.** Addenbrooke's NHS Trust Activity and Capacity Projections - Methodology, Assumptions and Results. Secta, 2004.

services or services for adults with disabilities, as it was not felt that these would be as sensitive to demographic change. Furthermore, children's services are currently undergoing major reorganisation and, until it becomes clearer how services will be structured and delivered in the future, there is little purpose in assessing the implications of demographic change. The implications of population growth for children's services will depend very much on the exact mix and nature of new housing, particularly the proportions of family housing, affordable housing and social housing.

2.5 The policy context

An essential element of assessing future health and social care requirements was to identify the national and local strategic direction that would underpin the development of PCT plans, services and capital investments.

At national level the broad vision⁴ is based on decreasing the dependency on acute hospitals for care through the development and expansion of primary, community and social services. This vision is focused upon six key areas that will require new models of care to be developed by PCTs:

- **Shifting provision of care from acute to a community focus**

The National Beds Inquiry⁵ (NBI) described this as the *Closer to Home* scenario. Key to this shift is the development of intermediate care to avoid emergency hospital admissions and to reduce the length of hospital stays by providing a range of integrated community services.

- **Enhanced primary care services**

Primary care infrastructure will need to be extended and strengthened. A wider range of services will be provided, involving a multi-disciplinary approach, a different and wider skill set and closer integration between local health and social care organisations. Consequentially this expansion of services could create a need to review and re-plan primary care estates.

- **Increases in day surgery**

The introduction of new technologies and surgical procedures will facilitate an increase in the number of operative cases being undertaken as day cases.

- **Reduced length of stay in hospital**

Allied to the increase in day cases is the requirement to reduce the length of stay in acute hospitals through the development of care pathways to ensure that a range of integrated, multi-disciplinary services are provided in the community.

- **Meeting unmet demand**

There is a drive to meet unmet demand, which in turn will have an effect upon the levels of emergency and elective admissions and workforce capacity.

⁴ **Department of Health.** The NHS Plan: a plan for investment, a plan for reform. DoH 2000

⁵ **Department of Health.** Shaping the Future NHS: Long term planning for hospitals and related services. Consultation document on the findings of the National Beds Inquiry – Supporting analysis. DoH, 2000.

- **Workforce development**

As new services are developed, workforce planning will need to address issues of recruitment, retention and training to support the increase in the size of the workforce.

This national vision is reflected in Norfolk, Suffolk and Cambridgeshire Strategic Health Authority's *Health Strategy 2005-2010*⁶. It provides a framework for planning across the whole of the health system. This means starting with services that can be delivered in people's own homes and the local community and then looking at how care is provided in hospitals. It also addresses health improvement and the implications of effecting changes in the determinants of health leading to more prevention and better health and the need to improve access to services to reduce health inequalities.

Locally the PCTs have been developing services that reflect the national and SHA strategic direction. This is reflected in the model's population-led scenario. Efforts were made to identify PCT level long term planning for service developments, demanded by the shift in the focus of service delivery. Local Delivery Plans were examined but did not provide appropriate quantitative data inputs. Senior members of the PCTs responded that they were currently writing their Strategic Service Development Plans, which would address longer-term service development and configuration. Consequently the model developed in this study reflects national targets and current service configurations in the context of population growth.

2.6 Health in the future – the implications of Choosing Health and the Wanless report

As well as uncertainty over how health and social care services will be structured and delivered in the future, there is uncertainty over the future of the nation's health. We know more about the links between diet, lifestyle and health than ever before, and public health has grown in prominence as a result. Reports such as *Choosing Health*⁷ and the *Wanless*⁸ report have made a significant impact on the priorities of primary care. Feedback on interim reports to the Health Forum emphasised the desirability of modelling the effects discussed in *Choosing Health*. This is a complex proposition, for the following reasons:

- The effects of *Choosing Health* are not likely to have a significant impact during the study period. An example of this would be the effect of a reduction in smoking prevalence. It will be a number of years before lower rates of smoking among today's population will lead to a change in smoking-related illness and mortality. Indeed, in the short-term, there may be continued rises due to historical smoking prevalence, along with an increased expenditure on smoking cessation and other public health measures. The same is true for the effects of obesity and other healthy lifestyles initiatives.
- Data for many of the risk factors that form the backbone of *Choosing Health* are not robustly available nationally or locally, such as measures of obesity.

⁶ **Norfolk, Suffolk and Cambridgeshire Strategic Health Authority.** *Health Strategy 2005-2010*. NSC 2004

⁷ **Department of Health.** *Choosing Health: making healthy choices easier*. DoH 2004

⁸ **Wanless D.** *Securing our future health: taking a long-term view*. HM Treasury 2002

- Most of the effects of Choosing Health on future morbidity have not yet been quantified and consequently it is problematic to model their influences here.

The Wanless report, *Securing our future health: taking a long-term view*, which was a precursor to Choosing Health, has, however, provided a more quantitative assessment of the impact of patient expectation and improved health-related behaviour on the population's health. Where effects from Wanless have been incorporated in the model, they have been based on Wanless' *Fully Engaged* scenario. This assumes that, in the future, "levels of public engagement in relation to their health are high: ... people are confident in the healthcare system and demand high quality care"⁸. The *Fully Engaged* scenario has been chosen as it represents the "best case" vision of future health status. While it is almost certainly over-ambitious, it is useful to understand the maximum potential implications of these changes in quantitative terms. The other Wanless scenarios, "Slow Uptake" and "Solid Progress", could be modelled later if required.

The Wanless assumptions used in the model are discussed further in Section 3.

2.7 NHS reorganisation: Commissioning a patient-led NHS

Since this study was commissioned, consultation has begun concerning the potential reorganisation of NHS Trusts. If this goes ahead, a new structure will be in place by April 2006. While PCTs may no longer exist in their current form, it is hoped that the information contained here will inform locality-based work in the future.

2.8 Future areas for work

This report represents the first contribution towards what will prove to be a lengthy and involved process to prepare for Cambridgeshire and Peterborough's population growth. We foresee requirements for further work. Some may be locally specific, perhaps focussing on the requirements of individual sites in relation to Section 106 agreements. Other work may be topic specific. In particular, we identify the following areas for development:

- Primary and community care – with additional time and resource it would be possible to carry out more detailed analyses of future requirements by obtaining activity data directly from the GP practices. The same could be true for community services more broadly.
- Mental Health – following publication of the Sainsbury Centre report, as discussed in section 2.3, further local work could be carried out as necessary.
- Local plans – with more quantified plans for each PCT it would be possible to create a more realistic set of local requirement projections, based on the agreed policy direction of each PCT. This would include an assessment of the extent to which it is feasible for each PCT to travel in the directions indicated in national policy. As PCTs develop these plans we would be able to offer quantitative support to inform their decisions.

3 Modelling health and social care capacity

The basis of projections of health and social care capacity is an accurate understanding of how services are currently delivered. This section of the report outlines indicators that were chosen to summarise current delivery and allow future demand to be assessed. Once these were established it was possible to consider modifications to service delivery that might alter capacity.

3.1 Indicator development

The aim of the indicator set is to provide a robust and reliable set of key indicators that are usable and easy to interpret. These indicators represent the configuration and delivery of services as they stand today and, in the main, provide quantified measures of activity to work with. Crucially they provide a sound basis from which further work can be developed.

Table 3.1 overleaf presents the indicators that were considered for inclusion. There has been extensive discussion about these, concerning their suitability, extent and analytical treatment. This has involved both information specialists and others from various disciplines and organisations across Cambridgeshire and Peterborough. We are able to use local activity data and the expertise of local analysts who have been working with these data for many years. Following further investigation a number of the indicators initially identified were agreed to be unsuitable for further analysis.

The criteria used for indicator selection required the data to be of consistent and high quality, to be a reliable indicator of service usage or delivery and to be available for the whole of the study area. Given the timescale of the project, the indicators were also required to be readily available; there was insufficient time to attempt to collect information that was not already available. Where possible the indicator was broken down by age. In a small number of cases, where reasonable quality data was available for one PCT, this data was used as a proxy indicator for the remaining PCTs.

The study rapidly highlighted the paucity of primary care and community care data currently readily available. Where available, community care data is of variable quality, primarily due to varying emphasis on accurate recording between PCTs. We have chosen to highlight areas where there is a lack of reliable data, rather than to carry out misleading analyses. This means that in the short-term this study will not provide all the answers users would wish. It does mean, however, that the analysis provided can be relied on to present a reasonably valid picture.

While in community care terms there is currently a question over whether accurate data currently exists, in terms of primary care the question is more one of access. As primary care recording systems become increasingly advanced, and through access initiatives such as QMAS, it should become easier to obtain quality primary care data. At present, however, we are not in this position and we have been unable to collect fit-for-purpose local data – other than for workforce – for this study.

Table 3.1: Candidate indicator list

| Sector | Indicator | Sub-indicators | Comments |
|---|---|--|---|
| Primary and Community Care | Workforce | GPs | ✓ |
| | | Practice nurses | ✓ |
| | | District nurses | ✓ |
| | | Health visitors | No activity data |
| | | Community nurses | No activity data |
| | NHS day care facilities | Geriatric medicine | Not included |
| | | Learning disability | Not included |
| | | Mental illness | Not included |
| | | Old age psychiatry | Not included |
| | | Other | Not included |
| | Outpatient activity carried out in a primary care setting | Outpatient procedures | No data available |
| | Primary and community care | Estimated number of GP consultations | National data used from Morbidity Survey ⁹ ✓ |
| | | Estimated number of practice nurse consultations | National data used from Morbidity Survey ⁹ ✓ |
| | | District nurse first contacts | East Cambs and Fenland activity used ✓ |
| | | Health visitor first contacts | Data quality poor |
| Community mental health nursing first contacts | | Data quality poor | |
| Chiropody first contacts | | Data quality poor | |
| Social Care | Local authority supported residents in staffed residential and nursing care | Residential care | ✓ |
| | | Nursing care | ✓ |
| | | Extra care | ✓ |
| | Older people helped to live at home | Older people helped to live at home (<10hours) | ✓ |
| Older people helped intensively to live at home (>10 hours) | | ✓ | |
| Secondary and tertiary care | Secondary and tertiary care workforce | Consultants | Not included |
| | | Other doctors | Not included |
| | | Qualified nursing staff | Not included |
| | Number of secondary and tertiary care admissions | Elective inpatients | ✓ |
| | | Elective day cases | ✓ |
| | | Emergency inpatients | ✓ |
| | | Maternity admissions | ✓ |
| | | Mental health admissions | Not included |
| | A&E activity | Number of A&E attendances | ✓ |
| | Outpatient activity by sector: first and subsequent appointments | Surgical acute | ✓ |
| | | Non-surgical acute and geriatric | ✓ |
| | | Mental illness and learning disabilities | Not included |
| Maternity | | Not included | |
| Ambulance activity | Emergency calls resulting in response arriving at the scene of the accident | ✓ | |
| | Patient journeys | ✓ | |

⁹ McCormick *et al.* Morbidity Statistics from General Practice, Fourth national study 1991-1992. OPCS, 1995.

3.2 Modelling the future

With the indicators chosen, the first stage of the analysis was to model a “population-led” scenario, therefore assessing the effect of population change on activity assuming that all services continue to be delivered as they are now.

The population-led scenario is modelled by applying forecasted populations, by age, to current activity rates. This therefore produces an activity projection, taking changes in both the overall population size and the age-structure into consideration. This scenario has been modelled for all the chosen activity indicators.

The second phase of the analysis models a *Closer to Home* scenario based on the principle of a shift in provision away from acute services, towards enhanced primary and community based services. The primary influence for this scenario is the National Beds Inquiry (NBI), which provides a solid quantitative framework on which to base future hospital admission rates and lengths of stay. Other policy assessments provide further indications of future delivery changes; these are referred to in the relevant chapters of this report. When deciding what assumptions to model, it has not always been easy, or indeed possible, to disentangle the range of influences or to determine direct cause and effect. We have therefore, where possible, tested a range of variant scenarios in order to provide a sensitivity assessment.

The *Closer to Home* scenario allows for the combined effects of population growth and service change by testing the effect of different changes to activity rates when applied to the population forecasts. Relatively small proportional changes to activity rates can have a significant effect when applied to population groups forecast to show major change.

When applying changes to activity rates, it is assumed that the full change will be experienced by 2021, with gradual change towards this experienced in preceding years. No change is assumed to 2006. One third of the change is assumed by 2011 and a further third by 2016.

Throughout the report totals may not add due to rounding. Percentage change figures were calculated before figures were rounded.

3.3 Data sources

The sources for the baseline data used in the model are as follows:

Table 3.2: Data sources

| Data | Source |
|--|--|
| Population | Cambridgeshire County Council Research Group 2003-based ward level age-group forecasts |
| Frailty prevalence | Medical Research Council Cognitive Function and Ageing Study (MRC CFAS) and Resource Implications Study (RIS MRC CFAS): Profile of disability in elderly people: estimates from a longitudinal population study. <i>BMJ</i> 1999; 318 :1108-1111. |
| Acute hospital activity, length of stay | Anglia Support Partnership's Admitted Patient Care and Outpatient Commissioning Data Sets, as at 1 st July 2005. Financial year 2003/2004 used as baseline. Data relate to first finished consultant episodes (FFCEs) and total outpatient attendances. |
| Ambulance calls and patient journeys | East Anglian Ambulance Trust. Financial year 2003/2004. |
| GP/Practice Nurse activity | McCormick <i>et al.</i> Morbidity Statistics from General Practice, Fourth national study 1991-1992. OPCS, 1995. |
| GP/Practice Nurse/District nurse workforce | March 2005 Quarterly Workforce Returns to Norfolk, Suffolk and Cambridgeshire Strategic Health Authority |
| District Nurse activity | Comwise Community Activity Database - District nursing activity provided to East Cambridgeshire and Fenland PCT, 2003/2004. Further input from the East Cambridgeshire and Fenland District Nursing Equity Audit (in progress). |
| Social care indicators | Cambridgeshire County Council Adults Services Strategic Plan (2004-2007). Baseline data for 2003. Department of Health Social Services Performance Assessment Framework Indicators 2002-2003 |

3.4 Summary of scenario assumptions

Table 3.3: Summary of *Closer to Home* model variants

| Sector | Influential documents | Policy direction | Scenarios tested |
|--|---|--|---|
| Secondary Care: Outpatients | NHS Plan: creation of GPs with Special Interests | Reduced outpatient attendances in secondary care setting, increased attendances in primary/community setting | <ul style="list-style-type: none"> 15% ↓ (15% decrease in attendances) 30% ↓ (30% decrease in attendances) |
| Secondary Care: Day case episodes | NBI <i>Closer to Home</i> Scenario | 49% increase in all elective admissions, higher proportion treated as day cases | <ul style="list-style-type: none"> Activity ↑ (49% increase in elective admissions) Day case ↑ (49% increase in elective activity coupled with 20% increase in proportion treated as day cases) |
| Secondary Care: Elective inpatient admissions | NBI <i>Closer to Home</i> scenario | 49% increase in all elective admissions, higher proportion treated as day cases | <ul style="list-style-type: none"> Activity ↑ (49% increase in elective admissions) Day case ↑ (49% increase in elective activity coupled with 20% increase in proportion treated as day cases) |
| Secondary Care: Emergency inpatient admissions | NBI <i>Closer to Home</i> scenario Wanless <i>Fully Engaged</i> scenario | NBI: 33% increase in emergency admissions Wanless: 15% reduction in acute admissions | <ul style="list-style-type: none"> NBI (33% ↑) Wanless (15% ↓) Combined effects of NBI and Wanless (18% ↑) |
| Secondary Care: Day case bed requirements | NBI <i>Closer to Home</i> Scenario | By 2020, 82% of elective admissions to be treated as day case | <ul style="list-style-type: none"> Population-led Activity ↑ (49% increase in elective admissions) Day case ↑ (49% increase in elective activity coupled with 20% increase in proportion treated as day cases) |
| Secondary Care: Elective bed requirements | NBI <i>Closer to Home</i> Scenario | 37% reduction in length of stay Bed occupancy reduction to 85% | All activity variants tested for: <ul style="list-style-type: none"> Full reduction in LOS (36%) with and without a reduction in bed occupancy Partial reduction in LOS (18%) with and without a reduction in bed occupancy |
| Secondary Care: Emergency bed requirements | NBI <i>Closer to Home</i> Scenario | 20% reduction in length of stay Bed occupancy reduction to 85% | All activity variants tested for: <ul style="list-style-type: none"> Full reduction in LOS (36%) with and without a reduction in bed occupancy Partial reduction in LOS (18%) with and without a reduction in bed occupancy |

| | | | |
|--|---|--|--|
| Emergency Care: A&E attendances | NBI <i>Closer to Home</i> scenario Wanless <i>Fully Engaged</i> scenario DoH "Modernising Emergency Care Article" ¹⁰ | NBI: Transfer of attendances to minor injury units Wanless: Reduction in emergency attendances DoH: up to 50% transfer of patients to minor injury units | Range of shifts tested: <ul style="list-style-type: none"> • 10% ↑ • 5% ↑ • 5% ↓ • 10% ↓ • 25% ↓ • 50% ↓ |
| Emergency Care: Ambulance calls resulting in a response | DoH "Taking healthcare to the patient" ¹¹ Wanless <i>Fully Engaged</i> scenario | Increased role for ambulances Reduction in inappropriate emergency calls; better management of long-term conditions | <ul style="list-style-type: none"> • 10% ↑ activity • 10% ↓ activity |
| Emergency Care: Patient journeys | DoH "Taking healthcare to the patient" | More patients treated by emergency care practitioners in their own home. | <ul style="list-style-type: none"> • 10% ↓ in proportion of responses resulting in a patient journey • 20% ↓ in proportion of responses resulting in a patient journey |
| Primary Care: Primary care visits | NBI <i>Closer to Home</i> scenario Wanless <i>Fully Engaged</i> scenario | Activity shift from secondary care to primary care, 0.8% increase per year. Increase in health-seeking behaviour, amounting to one additional GP visit per year | Range of shifts tested: <ul style="list-style-type: none"> • 0.8% annual activity increase • 1.3% annual increase (amounts to one additional visit per year by 2021) • 2.0% annual activity increase (combined NBI and Wanless effects) |
| Primary care: GP and Practice Nurse workforce | NBI <i>Closer to Home</i> scenario Wanless <i>Fully Engaged</i> scenario | As for Primary care visits but potential for 20% shift of activity away from GPs towards practice nurses | As for primary care visits but <ul style="list-style-type: none"> • assuming no change to the proportion of patients seen by a nurse • 20% shift towards nursing staff. |
| Community care: District nursing activity and workforce | NBI <i>Closer to Home</i> scenario | Increase in intensive homecare to assist earlier hospital discharge and prevent hospital admissions | <ul style="list-style-type: none"> • 1% annual increase in activity above demographic pressures |

¹⁰ **Department of Health** Modernising Emergency Care Article
Available on

http://www.dh.gov.uk/PolicyAndGuidance/OrganisationPolicy/EmergencyCare/ModernisingEmergencyCare/ModernisingEmergencyCareArticle/fs/en?CONTENT_ID=4063813&chk=cB44Sc Accessed 13th August 2005.

¹¹ **Department of Health** Taking healthcare to the patient – transforming NHS ambulance services. DoH, 2005.

| | | | |
|--|--|--|--|
| Social Care: Older people's services | Wanless <i>Fully Engaged</i> scenario | Healthy life expectancy increase in line with life expectancy increase – around 7% reduction. | Effects of <ul style="list-style-type: none"> • no frailty change • 3.5% ↓ frailty • 7% ↓ frailty |
| Social Care: Older people's services | Cambridgeshire County Council Adult Services Strategic Plan ¹² | Higher proportion of people helped to live in their own home; residential care to be replaced by extra-care. | Effects of: <ul style="list-style-type: none"> • Fully revised service model • Partially revised service model |

¹² **Cambridgeshire County Council.** Adult services strategic Plan 2004-2007

4 Population and dwelling stock forecasting

Establishing a good understanding of population change is key to planning ahead. Ultimately, the reliability and validity of population data will determine the quality of decisions made through the capacity planning process. This section of the report outlines the process used to produce population forecasts that are fit for purpose, highlights ways in which these forecasts differ from others produced elsewhere, and presents summary data. The full forecasts are presented in Appendix 2 and the complete forecasting methodology is available on request.

The forecasts produced for this project are referred to as the Cambridgeshire County Council Research Group 2003-based forecasts, abbreviated to CCCRG forecasts. Note that the new settlement of Northstowe has not been allocated to a ward; forecasts are given specifically for this development.

4.1 Introduction

4.1.1 Overview of the population and dwelling stock forecasts

The CCCRG 2003-based population forecasts are dwelling led. This means they reflect planned house-building as laid out in Local Plans, the Cambridgeshire and Peterborough Structure Plan and the draft Regional Spatial Strategy. Section 4.1.3 below describes how these forecasts differ from those published elsewhere. Section 4.1.4 summarises the CCCRG forecasts and the relationships between them, in diagrammatical format.

While the forecasts are based on the scale of development indicated in local policies, the precise location and phasing of housing development does not represent the policy of the County Council or district councils. The population forecasts indicate the possible population implications of development and other demographic change; they do not represent a population policy. The population forecasts are based on a series of assumptions and are subject to change in the light of new information. The forecasts for Peterborough for 2006 and 2011 are particularly subject to change as house-building may be proceeding more slowly than indicated by local information sources.

4.1.2 Definitions used

The total population figures are forecasts of the resident population. This definition is the same as that used in the 2001 Census as all students are counted at their term-time address. The forecasts include all persons living in communal establishments as well as those living in private households.

Forecasts of dwelling stock relate to the number of self-contained residential units whereby, if there is more than one separate area of living accommodation within a property, each is counted separately. Vacant properties, second homes and holiday homes are included, as are non-permanent dwellings, such as caravans and houseboats (where these are used for dwellings).

4.1.3 Comparison with other population projections

Population forecasts are available from multiple sources, each based on different assumptions and produced using different methodologies. The main producer of local authority level population projections, at a national level, is the Office for National Statistics (ONS). Other forecasts are produced on a more ad hoc basis by other organisations.

The forecasts produced for this project differ from those produced by ONS in two main respects. Firstly, and most importantly, they are policy based rather than trend based. ONS projections use recent migration trends to project future changes. This means that projections for areas where the population has grown considerably in recent years (such as East Cambridgeshire, for example, due to the rapid growth that occurred in Ely) are likely to overestimate growth. For areas where significant growth is about to start, they are likely to underestimate growth. The CCCRG policy based forecasts are based on the best available assessment of what is planned to occur within the forecast period.

Secondly the CCCRG forecasts are available at ward level. ONS produces projections at a local authority district (or PCT) level only. No information is available for wards or for market towns. The CCCRG ward level forecasts are the only source of small area population forecasts available.

The CCCRG forecasts also differ from those produced elsewhere as they benefit from local knowledge. This enables local factors, such as the student population, to be taken into consideration.

In the Eastern Region, the other main source of forecasts is the Population and Housing Research Unit (PHRU) at Anglia Polytechnic University. This group has produced a complete set of local authority level population and household projections for the Eastern Region as part of the Regional Spatial Strategy process¹³. These projections are policy-based, as opposed to those produced by ONS, but are not based on the same detail of location and phasing information as those produced by CCCRG. While users wishing to carry out analyses for the region are advised to use the PHRU projections, for local planning purposes in Cambridgeshire and Peterborough, the CCCRG forecasts present the best picture of the local situation.

4.1.4 Summary of the forecasts produced and the relationships between them

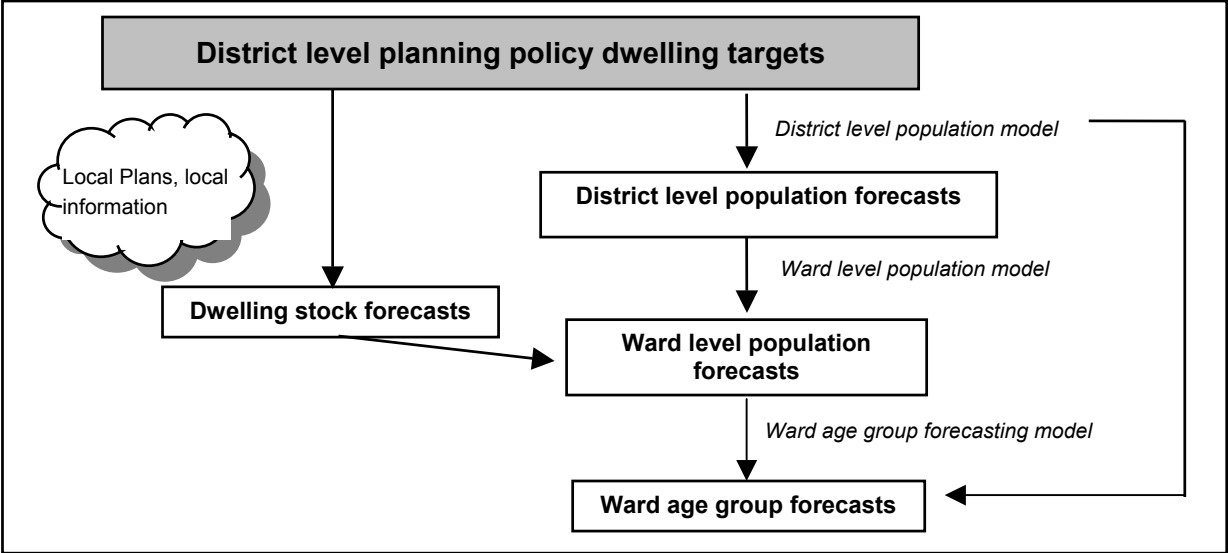
The CCCRG forecasts are available by ward, PCT and local authority, for the years 2001, 2006, 2011, 2016 and 2021. The population forecasts are available broken down into the following age bands: 0-4, 5-14, 15-24, 25-44, 45-64, 65-74, 75-84 and 85+.

The CCCRG forecasts are produced in a number of stages, which are detailed below. In brief, a single-year-of-age cohort survival model is used to forecast the population by local authority

¹³ King D. *et al.* Revised 2001-based population and household growth in the East of England, 2001-2021 (July 2005) (Population and Housing Research Group, Anglia Polytechnic University). Previous version (September 2003) available at: <http://www.eera.gov.uk/category.asp?cat=310>

district. The forecast population is broken down to ward level on the basis of likely locations of house-building. The ward-level population forecasts are broken down into age-bands using an age-group forecasting model that applies age-structure changes to the base population. Figure 3.1 below summarises the different forecasts and the relationships between them.

Figure 4.1: Forecast summary



4.1.5 Dwelling stock forecasts

The Cambridgeshire and Peterborough Structure Plan lays out development policy for 1999 to 2016, describing levels of growth, broken down into district council areas and county sub-regions. The Plan gives guidelines about preferred locations of dwellings but does not detail specific housing sites or the timing of development within the 17-year period. The Regional Spatial Strategy (RSS), published by the East of England Regional Assembly and currently in its draft phase, will ultimately replace the Structure Plan to prescribe development policy between 2001 and 2021. The levels of development detailed for Cambridgeshire and Peterborough are similar in both documents, so together they provide the development policy context to 2021.

The exact location of new housing is determined through what was formerly the Local Plan process and is now the Local Development Framework (LDF) process. District councils locally are currently in the process of producing their LDFs. This means the development policy specified in the Structure Plan/RSS has yet to filter through the planning process and into local policy for the whole period up to 2021. In terms of exact locations of housing development, therefore, it has been necessary to use a ‘best available evidence’ approach, rather than a ‘policy’ approach. This means that the forecasts are illustrative and do not represent the development policy of the County Council or any of the district councils.

The basis for the dwelling forecasts is information from the County Council’s Planning Research and Monitoring Team about housing completions and outstanding permissions and allocations, as at 31st March 2004. Further sites that have been identified for development are included, following advice from district council planners. Together, these information sources

describe the majority of the development planned to 2021. The additional development planned within each district has been distributed as far as possible on the basis of available land identified in urban capacity reports or, in the absence of further information, on the basis of local policy regarding the order of preference for the location of sites.

Using the information sources detailed above, dwelling forecasts for 2006, 2011, 2016 and 2021 have been produced. As far as possible, they reflect local planning information available in mid-2005 but, as stated above, do not indicate official local policy. In particular, there is some evidence that house-building in Peterborough is proceeding slower than indicated in local information sources, which may mean that the forecasts for 2006 and 2011 for Peterborough overestimate likely build. These forecasts will be revised as new information becomes available.

4.1.6 District level population forecasts

Cambridgeshire County Council Research Group runs a local authority level, single year of age, cohort survival population forecasting model. This model determines the total population forecasts and age and sex structure for each district. All further forecasts are derived from those produced in this model.

The model works by ageing forward the population by sex and single year of age from a base date, year by year. Population change is forecast by allowing for the main components of population change: births and deaths (which together give natural change), and migration. Allowance is made for the behaviours of specific population groups, such as students and the Armed Forces. This is the standard population forecasting methodology, as used, for instance, by the Office for National Statistics. More details about the forecasting model can be found in the *Cambridgeshire and Peterborough Joint Structure Plan Technical Report (2002)*¹⁴.

4.1.7 Ward level population forecasts

The total growth forecast for each district for 2021 is determined by the district level forecasting model, as described above. This forecast is broken down into constituent ward forecasts on the basis of the distribution and phasing of housing growth as given by the ward level dwelling stock forecasts. The ward level forecasting methodology considers two distinct population groups. Firstly, the 'local' population: the people currently living in existing housing in the area. This population is, in general, ageing, and so the average number of people living in each house is dropping. Secondly, the 'new' population: people moving into new dwellings. People moving into new houses usually have different characteristics from the existing population and often tend to be younger. This is particularly the case in completely new settlements like Cambourne and Northstowe. Adding together changes to the 'local' population and to the 'new' population gives our overall population forecast. There are two elements to the 2003-based ward level population forecasts: (1) total population figures by ward and (2) age group forecasts by ward.

¹⁴ **Cambridgeshire County Council and Peterborough City Council.** Cambridgeshire and Peterborough Joint Structure Plan Technical Report (2002)

4.2 Population and Dwelling Stock Forecasts

4.2.1 PCT level forecasts

Table 4.1 below summarises the dwelling stock forecasts and percentage change by PCT. Each PCT is forecast to experience marked house-building, with the greatest proportional dwelling increases in South Cambridgeshire and Cambridge City. Dwelling forecasts by ward are given in Appendices A2.1 to A2.3.

Table 4.1: Dwelling forecasts by PCT

| PCT | 2001 | 2006 | 2011 | 2016 | 2021 | % change 2001-2021 |
|---|-------------|-------------|-------------|-------------|-------------|-------------------------------|
| Cambridge City | 44,500 | 45,800 | 48,500 | 54,600 | 59,200 | 33% |
| East Cambridgeshire & Fenland | 59,200 | 64,800 | 69,100 | 73,100 | 76,800 | 30% |
| Huntingdonshire | 61,200 | 63,700 | 67,100 | 69,700 | 72,200 | 18% |
| South Cambridgeshire | 54,000 | 57,000 | 63,900 | 70,700 | 77,000 | 43% |
| GPPCP | 88,500 | 95,800 | 101,200 | 104,000 | 112,500 | 27% |
| Cambridgeshire & Peterborough Health Area | 307,500 | 327,200 | 349,700 | 372,200 | 397,700 | 29% |

Table 4.2 shows the total population forecasts and percentage change for each PCT. Cambridgeshire and Peterborough's population is forecast to grow by 22%, with the greatest percentage population change in South Cambridgeshire (35%) and Cambridge City (33%). Population forecasts by ward (and for the new settlement of Northstowe) are given in Appendices A2.4 to A2.9.

Table 4.2: Total population forecast by PCT

| PCT | 2001 | 2006 | 2011 | 2016 | 2021 | % change 2001-2021 |
|---|-------------|-------------|-------------|-------------|-------------|-------------------------------|
| Cambridge City | 110,000 | 113,600 | 120,400 | 135,200 | 146,400 | 33% |
| East Cambridgeshire & Fenland | 134,400 | 144,100 | 151,700 | 158,300 | 164,600 | 22% |
| Huntingdonshire | 146,200 | 148,400 | 152,700 | 156,400 | 159,100 | 9% |
| South Cambridgeshire | 130,300 | 135,300 | 148,900 | 162,700 | 176,200 | 35% |
| GPPCP | 201,800 | 213,900 | 221,800 | 225,100 | 239,000 | 18% |
| Cambridgeshire & Peterborough Health Area | 722,800 | 755,300 | 795,500 | 837,700 | 885,300 | 22% |

Table 4.3 shows the percentage change forecast for each age-band across the Health Area. Increases are forecast in each age band but the greatest change is forecast in the population aged over 85, which is forecast to increase by 86%. The lowest increase is forecast in children aged 5 to 14, with an increase of just 7%.

Table 4.3: Cambridgeshire & Peterborough Health Area – Age-group forecasts

| Year | 0-4 | 5-14 | 15-24 | 25-44 | 45-64 | 65-74 | 75-84 | 85+ | Total |
|----------|--------|--------|---------|---------|---------|--------|--------|--------|---------|
| 2001 | 43,100 | 92,500 | 93,100 | 215,500 | 173,000 | 55,800 | 37,000 | 12,900 | 722,800 |
| 2006 | 43,500 | 92,800 | 102,900 | 215,600 | 186,400 | 59,400 | 40,300 | 14,600 | 755,300 |
| 2011 | 44,800 | 93,700 | 108,700 | 217,700 | 201,300 | 68,400 | 43,800 | 17,000 | 795,500 |
| 2016 | 46,900 | 95,500 | 112,000 | 224,400 | 209,700 | 80,800 | 48,200 | 20,200 | 837,700 |
| 2021 | 50,600 | 99,300 | 113,600 | 240,800 | 217,400 | 83,600 | 56,100 | 24,000 | 885,300 |
| % change | 17% | 7% | 22% | 12% | 26% | 50% | 52% | 86% | 22% |

4.2.2 Ward level population forecasts

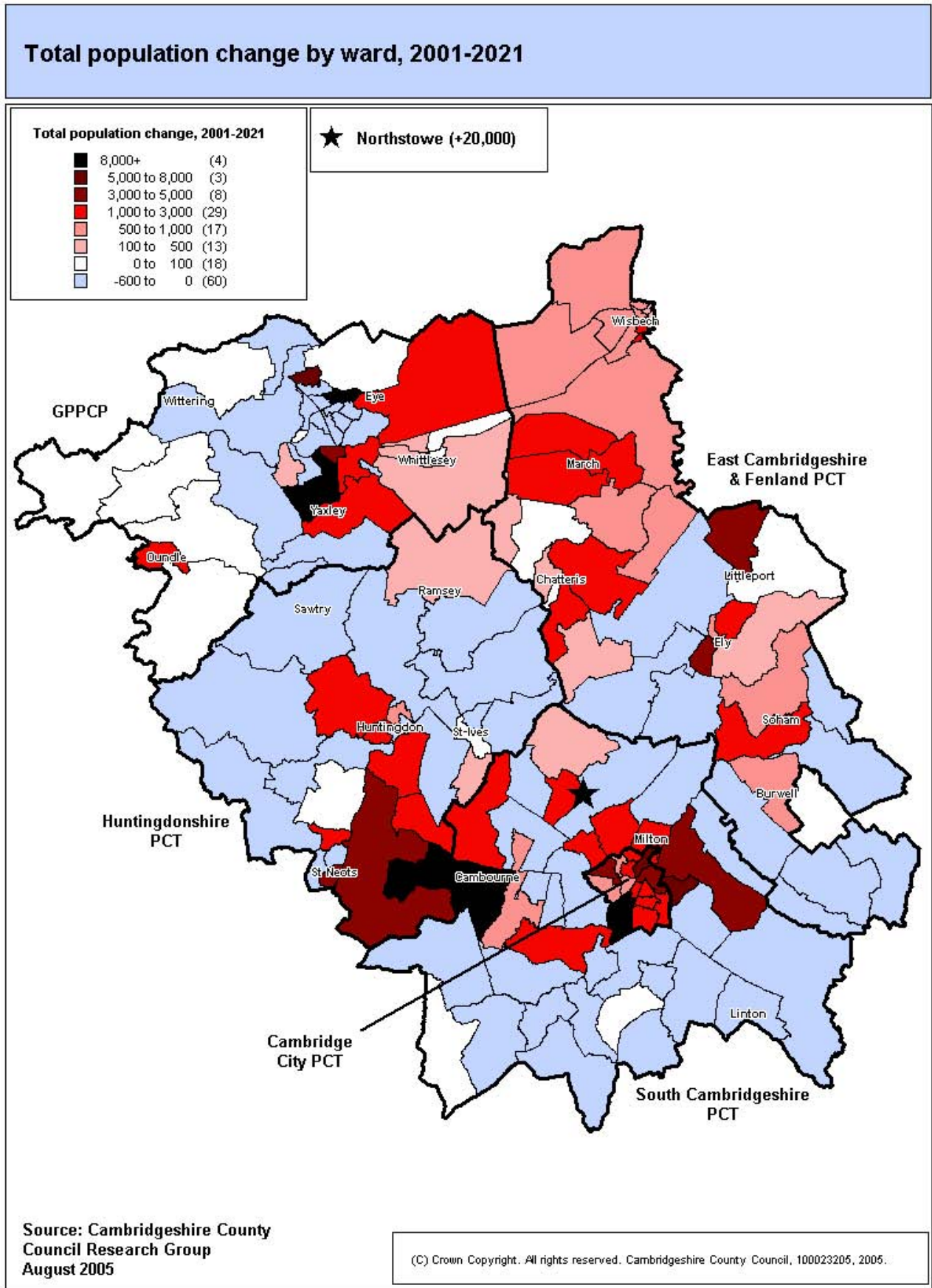
Maps 4.1, 4.2 and 4.3 on the following pages show forecast population change by ward. Because they show the change experienced over whole wards, in rural areas this has the effect of showing change spread over a larger area than the actual sites involved. These maps, therefore, show the implications of population change for wards, but should not be used to pinpoint the precise location of change. Maps A1.1 and A1.2 in Appendix 1 show the ward boundaries and their names. Note that the new settlement of Northstowe is indicated by a star and has not been allocated to a ward. For this reason, forecasts are available specifically for this development.

Map 4.1 shows that most rural areas are forecast to show a stable or slightly declining population to 2021. Across Cambridgeshire and Peterborough, the area of greatest change between 2001 and 2021 is forecast to be the new settlement of Northstowe, where, by 2021, the population is forecast to be 20,000. Hampton, in Peterborough, is projected to increase by 13,600 between 2001 and 2021, with the majority of growth occurring by 2011. Other areas of marked population growth include much of Cambridge City, the wards bordering Cambridge to the north, east and southwest, and Bourn. The growth shown across Bourn ward is actually located in the new settlement of Cambourne; note that much of this growth has already occurred. In the remainder of Cambridgeshire, growth is concentrated in the market towns (namely Ely, Littleport, Huntingdon, St Neots, Chatteris and March).

Map 4.2 shows that, across much of the county, the population aged 0 to 14 is forecast to remain stable or to decline. Slight increases are forecast for parts of East Cambridgeshire and Fenland. Notable growth is forecast for Cambridge City, the new settlements of Cambourne and Northstowe, and parts of Peterborough. By 2021, Northstowe is projected to have 4,300 children aged 0 to 14. Complete age-group forecasts are given by for Northstowe and by ward in Appendices 2.8.4 and 2.9.4.

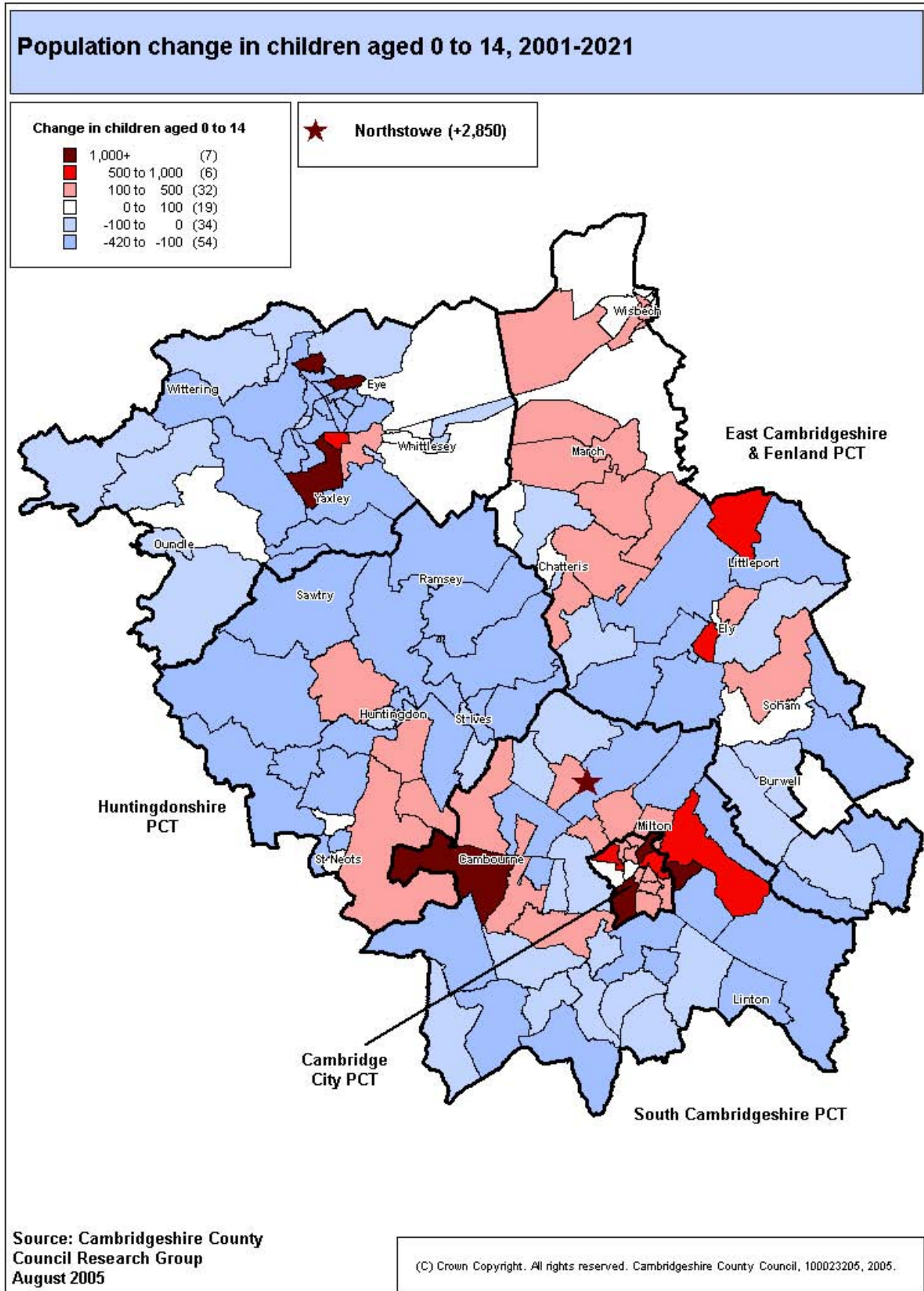
Map 4.3 shows that the number of people aged 65+ is forecast to increase notably across most of the county. The most marked increase is seen in the areas of greatest house-building, but almost all rural areas are forecast to show some increase. Across the county, the only exception to this ageing trend is found in Cambridge City, where the population aged 65+ is forecast to show slight decline.

Map 4.1: Total population change by ward, 2001-2021



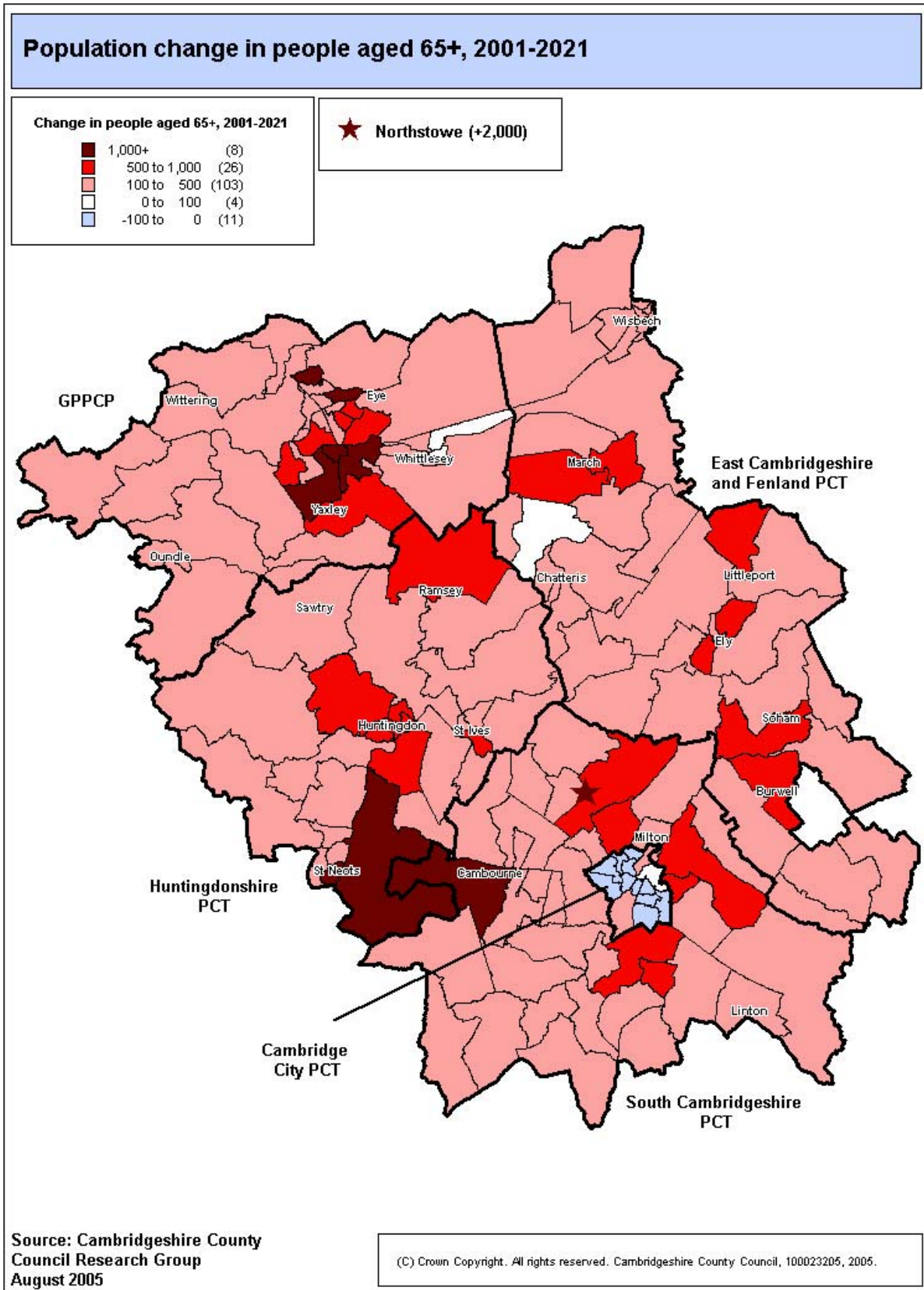
Note: This maps shows population growth across whole wards and is therefore not an accurate representation of the exact location of house-building and subsequent population change

Map 4.2: Population change in children aged 0 to 14 by ward, 2001-2021



Note: This maps shows population growth across whole wards and is therefore not an accurate representation of the exact location of house-building and subsequent population change

Map 4.3: Population change in people aged 65+ by ward, 2001-2021



Note: This maps shows population growth across whole wards and is therefore not an accurate representation of the exact location of house-building and subsequent population change

4.3 Reliability and risks

It is impossible to predict the future precisely and any forecasts are subject to uncertainty. This section outlines key risks surrounding the CCCRG forecasts. In general terms the forecasts for PCTs are more reliable than those for wards, and the total population forecasts are more reliable than those broken down into age groups. When cited elsewhere, the forecasts must be properly referenced¹⁵.

4.3.1 Dwelling stock forecasts

The ward level dwelling stock forecasts present an optimistic view of dwelling stock growth as they assume that all planned dwellings are built according to policy. In terms of planning for the future it is necessary to consider the full implications of policy, even if there are questions as to whether policy can be achieved. It is possible that the levels of growth specified in the draft RSS will change through the Examination in Public process, and that the final growth targets agreed for the RSS will be higher or lower than those used here. Further, the extent to which policy targets are achieved depends on many factors, including market forces and the economy. All development is subject to the development control system; development on designated sites depends on suitable planning applications being received from developers. "Windfall" sites, which have not been allocated for housing growth, are likely to become available. In general it is reasonable to assume that the forecasts for 2006 are the most robust, and that those for successive five-year periods become increasingly less reliable.

4.3.2 Population forecasts

The population forecasts rely on dwelling targets being achieved and are therefore subject to the same reliability issues as described in section 4.3.1 above. In general, the forecasts become less reliable the further they project into the future. The total population forecasts will be more reliable than for individual ages. The forecasts for children are the least reliable as they depend on assumptions about future birth rates. Users are advised to group the forecasts into the broadest possible age bands.

¹⁵The forecasts should be referenced as:

Cambridgeshire County Council Research Group 2003-based ward level population and dwelling stock forecasts

4.4 Forecasting specific population sub-groups

4.4.1 Frail elderly

When planning services for older people, it is not only the absolute number of older people that is of concern, but also the number of people likely to be frail and therefore in need of support. With increasing life expectancy, more people are living to an age where they are more likely to be physically frail or confused, particularly men, and this has significant implications for service planning.

Forecasting the proportion of people likely to be frail necessitates an understanding of changes to the population and the likelihood of any individual becoming frail. The Medical Research Council's Cognitive Function and Ageing Study¹⁶ (CFAS) provide estimates of the current prevalence of frailty among older people. Applying these rates to the population of each PCT provides an assessment of the likely number of frail elderly people in the future. This methodology assumes that the prevalence of frailty will remain constant into the future. While medical and technical advance mean that this may not be the case, we equally have no robust conceptual base on which to base any alternative assumptions. The effect of small reductions in frailty prevalence is modelled in section 9.

Projections of Cambridgeshire and Peterborough's frail elderly population are presented in Table 4.5 overleaf, with projections for each PCT given in Appendices A2.10 to A2.12.

Table 4.4: Prevalence of frailty (Source: MRC CFAS Study³)

| Prevalence | 65-74 | | 75-84 | | 85+ | | 65+ | |
|------------------|-------|-------|-------|-------|-----|-------|-----|-------|
| | Men | Women | Men | Women | Men | Women | Men | Women |
| % frail | 6% | 7% | 14% | 21% | 36% | 54% | 11% | 19% |
| Of whom: | | | | | | | | |
| Physically frail | 59% | 75% | 53% | 69% | 48% | 59% | 54% | 66% |
| Mentally frail | 28% | 18% | 29% | 15% | 22% | 16% | 27% | 16% |
| Combined | 13% | 7% | 17% | 15% | 30% | 25% | 19% | 18% |

Across Cambridgeshire and Peterborough, the number of physically frail older people is projected to rise by 55% by 2021. The number of mentally frail older people is projected to increase by 60% and the number of people who are both physically and mentally frail is projected to increase by 66%.

¹⁶ **Melzer D. et al.** Medical Research Council Cognitive Function and Ageing Study (MRC CFAS) and Resource Implications Study (RIS MRC CFAS): Profile of disability in elderly people: estimates from a longitudinal population study. *BMJ* 1999; **318**:1108-1111.

Table 4.5: Projection of frail elderly population in Cambridgeshire and Peterborough Health Area

| Frailty | Age | 2003 | 2006 | 2011 | 2016 | 2021 | % change |
|------------------|-------|--------|--------|--------|--------|--------|----------|
| Physically frail | 65-74 | 2,500 | 2,600 | 3,000 | 3,600 | 3,700 | 46% |
| | 75-84 | 4,400 | 4,600 | 5,000 | 5,500 | 6,200 | 41% |
| | 85+ | 3,500 | 4,000 | 4,600 | 5,400 | 6,300 | 80% |
| | Total | 10,500 | 11,200 | 12,600 | 14,400 | 16,200 | 55% |
| Mentally frail | 65-74 | 800 | 900 | 1,000 | 1,200 | 1,200 | 46% |
| | 75-84 | 1,300 | 1,400 | 1,600 | 1,700 | 2,000 | 49% |
| | 85+ | 1,100 | 1,200 | 1,400 | 1,700 | 2,000 | 86% |
| | Total | 3,300 | 3,500 | 4,000 | 4,600 | 5,200 | 60% |
| Combined frail | 65-74 | 400 | 400 | 400 | 500 | 500 | 46% |
| | 75-84 | 1,100 | 1,100 | 1,200 | 1,400 | 1,600 | 46% |
| | 85+ | 1,600 | 1,800 | 2,100 | 2,500 | 3,000 | 84% |
| | Total | 3,100 | 3,400 | 3,800 | 4,400 | 5,100 | 66% |

4.4.2 Population dependency ratio

As population structures change, the balance of the population of working age compared to the “dependent” population may shift. This changes the proportion of people likely to be economically active (and paying taxes) in relation to the proportion of people more likely to be supported by the state.

As with much of the UK, the dependency ratio across Cambridgeshire PCTs is forecast to fall, with the exception of Cambridge City, where it is forecast to rise. Table 4.6 shows the ratio of the working age population to the population aged under 15 or over 65. Table 4.7 shows the number of people aged 15-64 per person aged over 65. These tables illustrate clearly the significant demographic shift forecast to occur. In the majority of PCTs, the number of people aged 15-64 per person aged over 65 is forecast to drop by between 20-40%. The picture in Cambridge City is very different, with a 32% rise forecast. This is because the number of people aged over 65+ is projected to fall, while the population of working age is projecting to increase substantially. The effect is less marked in Table 4.6 because the general decline in numbers of children aged 0 to 14 slightly offsets the increase in the population aged over 65.

Table 4.6: Ratio of working age population to those aged 0-14 or over 65

| PCT | 2003 | 2006 | 2011 | 2016 | 2021 | % change |
|-------------------------------|------|------|------|------|------|----------|
| Cambridge City | 2.77 | 2.83 | 2.92 | 3.00 | 3.04 | 10% |
| East Cambridgeshire & Fenland | 1.75 | 1.75 | 1.69 | 1.59 | 1.54 | -12% |
| Huntingdonshire | 2.01 | 2.03 | 1.99 | 1.84 | 1.74 | -13% |
| South Cambridgeshire | 1.96 | 1.95 | 1.86 | 1.74 | 1.70 | -13% |
| GPPCP | 1.91 | 1.91 | 1.86 | 1.73 | 1.67 | -12% |
| Cambridgeshire & Peterborough | 2.01 | 2.02 | 1.97 | 1.87 | 1.82 | -9% |

Table 4.7: Number of people aged 15-64 per person aged over 65

| PCT | 2003 | 2006 | 2011 | 2016 | 2021 | % change |
|-------------------------------|------|------|------|------|------|----------|
| Cambridge City | 5.74 | 6.05 | 6.55 | 6.99 | 7.55 | 32% |
| East Cambridgeshire & Fenland | 3.54 | 3.50 | 3.24 | 2.89 | 2.74 | -23% |
| Huntingdonshire | 4.99 | 4.77 | 4.12 | 3.43 | 3.10 | -38% |
| South Cambridgeshire | 4.42 | 4.27 | 3.87 | 3.42 | 3.28 | -26% |
| GPPCP | 4.52 | 4.35 | 3.96 | 3.46 | 3.24 | -28% |
| Cambridgeshire & Peterborough | 4.52 | 4.42 | 4.08 | 3.66 | 3.49 | -23% |

5 Future healthcare capacity: Secondary care

This section examines projected activity change in secondary care. Outpatient attendances, inpatient day cases, elective admissions and emergency admissions are discussed in turn. In each case, the effects of activity change related to a *Fully Engaged* population and to shifting care *Closer to Home* are modelled.

5.1 Outpatient attendances – population-led

Tables 5.1 to 5.3 below set out current and projected outpatient attendances for each PCT. The rates used to derive these are given in Appendix 3. Attendance rates vary considerably by age and by PCT: the lowest rates are among people aged five to 44, with progressively higher attendance rates with increasing age. The overall percentage change projected therefore relates both to the scale of population growth and to the age structure of the population. Moderate growth among an older population will have a greater effect on outpatient admission rates than more substantial growth among a younger population.

Similar changes are projected for surgical and non-surgical activity, with just a slightly higher increase projected for non-surgical activity at 28% compared to 26%. The greatest proportional increase in outpatient attendance is projected for South Cambridgeshire PCT, at 40% for both surgical and non-surgical attendances. Despite its significant population growth, attendances in Cambridge City are projected to increase by just 22%; this is because population growth here is likely to be in the younger population.

Table 5.1: Projected surgical outpatient attendances by PCT

| PCT | Current Activity | Projected Activity | | | | % Change |
|-------------------------------|------------------|--------------------|---------|---------|---------|----------|
| | 2003/4 | 2006 | 2011 | 2016 | 2021 | |
| Cambridge City | 44,426 | 44,610 | 46,510 | 51,310 | 54,290 | 22.2% |
| East Cambridgeshire & Fenland | 66,429 | 69,710 | 74,750 | 79,800 | 84,050 | 26.5% |
| Huntingdonshire | 71,339 | 72,960 | 77,640 | 82,540 | 85,850 | 20.3% |
| South Cambridgeshire | 38,689 | 39,480 | 44,200 | 49,380 | 54,200 | 40.1% |
| GPPCP | 87,970 | 93,840 | 99,390 | 103,240 | 111,130 | 26.3% |
| Cambridgeshire & Peterborough | 308,853 | 320,610 | 342,490 | 366,270 | 389,520 | 26.1% |

Table 5.2: Projected non-surgical outpatient attendances by PCT

| PCT | Current | Projected Activity | | | | % Change |
|-------------------------------|---------|--------------------|---------|---------|---------|----------|
| | 2003/4 | 2006 | 2011 | 2016 | 2021 | |
| Cambridge City | 40,612 | 40,690 | 42,360 | 46,750 | 49,410 | 21.7% |
| East Cambridgeshire & Fenland | 43,791 | 45,940 | 49,430 | 52,920 | 55,660 | 27.1% |
| Huntingdonshire | 55,891 | 57,460 | 62,210 | 67,310 | 70,460 | 26.1% |
| South Cambridgeshire | 32,928 | 33,560 | 37,670 | 42,170 | 46,160 | 40.2% |
| GPPCP | 54,635 | 58,490 | 62,350 | 65,290 | 70,460 | 29.0% |
| Cambridgeshire & Peterborough | 227,857 | 236,150 | 254,020 | 274,440 | 292,160 | 28.2% |

Table 5.3 below shows projected maternity outpatient attendances by PCT, which vary considerably. Attendances are projected to decrease in Huntingdonshire PCT and to increase only slightly in East Cambridgeshire & Fenland and GPPCP. The greatest relative increase is forecast for Cambridge City, with an increase of 47%. This relates to the current low activity in this area, and to considerable additional activity related to growth in the population of childbearing age.

Table 5.3: Projected maternity outpatient attendances by PCT

| PCT | Current Activity | Projected Activity | | | | % Change |
|-------------------------------|------------------|--------------------|--------|--------|--------|----------|
| | 2003/4 | 2006 | 2011 | 2016 | 2021 | |
| Cambridge City | 3,063 | 3,100 | 3,310 | 3,860 | 4,490 | 46.6% |
| East Cambridgeshire & Fenland | 7,559 | 7,880 | 7,990 | 8,040 | 8,240 | 9.1% |
| Huntingdonshire | 6,567 | 6,420 | 6,260 | 6,130 | 6,140 | -6.4% |
| South Cambridgeshire | 2,599 | 2,570 | 2,730 | 2,910 | 3,100 | 19.2% |
| GPPCP | 7,355 | 7,600 | 7,660 | 7,550 | 7,940 | 8.1% |
| Cambridgeshire & Peterborough | 27,143 | 27,574 | 27,960 | 28,470 | 29,920 | 10.2% |

5.2 Closer to Home changes affecting outpatient attendances

Outpatient services are a key area for change under the general shift in service provision away from acute services towards community and primary care settings. In particular, the NHS Plan sets out the target of creating 1000 new General Practitioners with Special Interests (GPwSI). GPwSIs will “supplement their important generalist role by delivering a high quality, improved access service to meet the needs of a single PCT or group of PCTs. They may deliver a clinical service beyond the normal scope of general practice, undertake advanced procedures, or develop services”.¹⁷ Evidence from NatPaCT¹⁸ suggests that around 30-40% of outpatient referrals could be seen by a GPwSI in a primary or community care setting. Tables 5.4 and 5.5 below demonstrate the effect of a 30% and 15% reduction in outpatient attendances by 2021. It is assumed that the decrease applies to surgical and non-surgical attendances only. Maternity and mental health attendances are not modelled as it is assumed these will be less affected by the increased role of GPwSIs.

¹⁷ Department of Health. Implementing a scheme for general practitioners with special interests. DoH, 2002.

¹⁸ NatPaCT. Practitioners with special interests: A Step by Step Guide to setting up a general practitioner with a special interest (GPwSI) service; NatPaCT, 2003.

Table 5.4: Projected surgical outpatient attendance rates in a secondary care setting, by PCT

| PCT | % Activity change | Current Activity | Projected Activity | | | | % Change |
|-------------------------------|-------------------|------------------|--------------------|---------|---------|---------|----------|
| | | 2003 | 2006 | 2011 | 2016 | 2021 | |
| Cambridge City | -15% | 44,426 | 44,610 | 44,190 | 46,180 | 46,140 | 3.9% |
| | -30% | 44,426 | 44,610 | 41,860 | 41,050 | 38,000 | -14.1% |
| East Cambridgeshire & Fenland | -15% | 66,429 | 69,710 | 71,010 | 71,820 | 71,450 | 7.6% |
| | -30% | 66,429 | 69,710 | 67,280 | 63,840 | 58,840 | -11.4% |
| Huntingdonshire | -15% | 71,339 | 72,960 | 73,760 | 74,290 | 72,970 | 2.3% |
| | -30% | 71,339 | 72,960 | 69,870 | 66,030 | 60,090 | -15.8% |
| South Cambridgeshire | -15% | 38,689 | 39,480 | 41,990 | 44,440 | 46,070 | 19.1% |
| | -30% | 38,689 | 39,480 | 39,780 | 39,500 | 37,940 | -1.9% |
| GPPCP | -15% | 87,970 | 93,840 | 94,420 | 92,920 | 94,460 | 7.4% |
| | -30% | 87,970 | 93,840 | 89,450 | 82,590 | 77,790 | -11.6% |
| Cambridgeshire & Peterborough | -15% | 308,853 | 320,600 | 325,370 | 329,650 | 331,090 | 7.2% |
| | -30% | 308,853 | 320,600 | 308,240 | 293,010 | 272,660 | -11.7% |

Table 5.5: Projected non-surgical outpatient attendance rates in a secondary care setting, by PCT

| PCT | % Activity change | Current Activity | Projected Activity | | | | % Change |
|-------------------------------|-------------------|------------------|--------------------|---------|---------|---------|----------|
| | | 2003 | 2006 | 2011 | 2016 | 2021 | |
| Cambridge City | -15% | 40,612 | 40,690 | 40,250 | 42,080 | 42,000 | 3.4% |
| | -30% | 40,612 | 40,690 | 38,130 | 37,400 | 34,590 | -14.8% |
| East Cambridgeshire & Fenland | -15% | 43,791 | 45,940 | 46,960 | 47,630 | 47,310 | 8.0% |
| | -30% | 43,791 | 45,940 | 44,490 | 42,330 | 38,960 | -11.0% |
| Huntingdonshire | -15% | 55,891 | 57,460 | 59,100 | 60,580 | 59,890 | 70.2% |
| | -30% | 55,891 | 57,460 | 55,980 | 53,850 | 49,320 | -11.8% |
| South Cambridgeshire | -15% | 32,928 | 33,560 | 35,780 | 37,950 | 39,240 | 19.2% |
| | -30% | 32,928 | 33,560 | 33,900 | 33,740 | 32,310 | -1.9% |
| GPPCP | -15% | 54,635 | 58,490 | 59,230 | 58,760 | 59,890 | 9.6% |
| | -30% | 54,635 | 58,490 | 56,120 | 52,230 | 49,320 | -9.7% |
| Cambridgeshire & Peterborough | -15% | 227,857 | 236,140 | 241,320 | 247,000 | 248,330 | 9.0% |
| | -30% | 227,857 | 236,140 | 228,620 | 219,550 | 204,500 | -10.3% |

Table 5.6 gives an indication of the number of outpatient appointments that would be seen in a primary care or community care setting, given a 15% or 30% shift away from the acute sector. Under a 30% shift, by 2021 around 204,500 appointments could be seen in this way across Cambridgeshire and Peterborough. Some of these could be carried out within existing GP surgeries; others could be based in community hospitals or other intermediate care settings. The location will in part be determined by existing estates capacity, but in time will also have a significant effect on future estates requirements.

Table 5.6: Outpatient attendances to be carried out in primary or community setting

| PCT | % Activity change | Estimated activity in community setting | | |
|-------------------------------|-------------------|---|---------|---------|
| | | 2011 | 2016 | 2021 |
| Cambridge City | -15% | 4,400 | 9,800 | 15,600 |
| | -30% | 8,900 | 19,600 | 31,100 |
| East Cambridgeshire & Fenland | -15% | 6,200 | 13,300 | 21,000 |
| | -30% | 12,400 | 26,500 | 41,900 |
| Huntingdonshire | -15% | 7,000 | 15,000 | 23,400 |
| | -30% | 14,000 | 30,000 | 46,900 |
| South Cambridgeshire | -15% | 4,100 | 9,200 | 15,100 |
| | -30% | 8,200 | 18,300 | 30,100 |
| GPPCP | -15% | 8,100 | 16,900 | 27,200 |
| | -30% | 16,200 | 33,700 | 54,500 |
| Cambridgeshire & Peterborough | -15% | 29,800 | 64,200 | 102,300 |
| | -30% | 59,700 | 128,100 | 204,500 |

5.3 Elective activity – population-led

This section considers projected changes to elective admissions. Two types of elective admission are recognised: day cases and “ordinary” (overnight) admissions. The former are referred to as day case admissions and the latter as elective inpatient admissions.

5.3.1 Day case admissions

Tables 5.7 and 5.8 overleaf show the increase in day case admissions, by PCT, for surgical and non-surgical specialties. Maternity day cases are not modelled, as the numbers concerned are negligible.

Population growth means that, by 2021, there would be an additional 9,000 surgical, and 6,900 non-surgical, day case admissions per year. Increases are greatest in relation to the population of South Cambridgeshire PCT, at around 42%, and lowest in Cambridge City.

Table 5.7: Projected surgical day case admissions by PCT

| PCT | Current Activity | Projected Activity | | | | % Change |
|-------------------------------|------------------|--------------------|--------|--------|--------|----------|
| | 2003 | 2006 | 2011 | 2016 | 2021 | |
| Cambridge City | 4,792 | 4,810 | 5,000 | 5,500 | 5,800 | 21.0% |
| East Cambridgeshire & Fenland | 7,554 | 7,940 | 8,530 | 9,120 | 9,650 | 27.7% |
| Huntingdonshire | 7,916 | 8,090 | 8,640 | 9,250 | 9,730 | 22.9% |
| South Cambridgeshire | 4,080 | 4,170 | 4,680 | 5,240 | 5,770 | 41.5% |
| GPPCP | 8,743 | 9,340 | 9,920 | 10,330 | 11,140 | 27.5% |
| Cambridgeshire & Peterborough | 33,085 | 34,350 | 36,760 | 39,440 | 42,090 | 27.2% |

Table 5.8: Projected non-surgical day case admissions by PCT

| PCT | Current Activity | Projected Activity | | | | % Change |
|-------------------------------|------------------|--------------------|--------|--------|--------|----------|
| | 2003 | 2006 | 2011 | 2016 | 2021 | |
| Cambridge City | 4,272 | 4,250 | 4,390 | 4,790 | 4,940 | 15.7% |
| East Cambridgeshire & Fenland | 5,545 | 5,820 | 6,310 | 6,790 | 7,130 | 28.5% |
| Huntingdonshire | 6,432 | 6,640 | 7,240 | 7,820 | 8,100 | 25.9% |
| South Cambridgeshire | 4,193 | 4,270 | 4,840 | 5,450 | 5,940 | 41.6% |
| GPPCP | 4,025 | 4,320 | 4,630 | 4,860 | 5,230 | 29.8% |
| Cambridgeshire & Peterborough | 24,467 | 25,310 | 27,400 | 29,710 | 31,330 | 28.0% |

Under a *Closer to Home* scenario there would be a much higher proportion of elective admissions treated as day cases. Day case change is modelled and discussed further, in conjunction with elective inpatient admissions, in section 5.4 below.

5.3.2 Elective inpatient admissions

Tables 5.9 and 5.10 below set out the projected elective inpatient admissions for each PCT. The rates on which these are based are given in Appendix 3. Significant rises are projected for all PCTs, with the highest proportional increase in South Cambridgeshire PCT, at 42% for surgical admissions and 47% for non-surgical admissions. Because elective admissions are higher among older people, the significant population growth forecast for Cambridge City results in only a 20% rise in projected elective surgical admissions and 15% rise in elective non-surgical admissions. In Huntingdonshire, while the population is forecast to increase by only 8%, elective admissions are projected to rise by 23% for surgical admissions and 30% for non-surgical admissions. Overall, based on current levels of activity, population growth across the Cambridgeshire and Peterborough Health Area would lead to an additional 6,100 elective admissions per year.

Table 5.9: Projected surgical elective inpatient admissions by PCT

| PCT | Current Activity | Projected Activity | | | | % Change |
|-------------------------------|------------------|--------------------|--------|--------|--------|----------|
| | 2003 | 2006 | 2011 | 2016 | 2021 | |
| Cambridge City | 2,380 | 2,380 | 2,470 | 2,720 | 2,860 | 20.2% |
| East Cambridgeshire & Fenland | 3,857 | 4,050 | 4,370 | 4,690 | 4,930 | 27.8% |
| Huntingdonshire | 3,505 | 3,600 | 3,870 | 4,150 | 4,320 | 23.2% |
| South Cambridgeshire | 2,122 | 2,160 | 2,440 | 2,740 | 3,000 | 41.5% |
| GPPCP | 5,541 | 5,920 | 6,300 | 6,590 | 7,090 | 28.0% |
| Cambridgeshire & Peterborough | 17,405 | 18,110 | 19,440 | 20,890 | 22,200 | 27.6% |

Table 5.10: Projected non-surgical elective inpatient admissions by PCT

| PCT | Current Activity | Projected Activity | | | | % Change |
|-------------------------------|------------------|--------------------|-------|-------|-------|----------|
| | 2003 | 2006 | 2011 | 2016 | 2021 | |
| Cambridge City | 765 | 760 | 780 | 850 | 880 | 15.1% |
| East Cambridgeshire & Fenland | 924 | 970 | 1,050 | 1,140 | 1,200 | 30.2% |
| Huntingdonshire | 943 | 970 | 1,060 | 1,160 | 1,220 | 29.6% |
| South Cambridgeshire | 683 | 700 | 800 | 900 | 1,000 | 47.1% |
| GPPCP | 925 | 990 | 1,050 | 1,100 | 1,180 | 28.1% |
| Cambridgeshire & Peterborough | 4,240 | 4,400 | 4,750 | 5,150 | 5,500 | 29.7% |

5.4 Closer to Home changes affecting elective admissions

The NBI *Closer to Home* scenario sets out target changes to elective admissions. While all elective admissions (for day cases and inpatients combined) are set to increase towards 2021, the increase is to be focussed in day case admissions; inpatient admissions among the under 65s are set to decline slightly. This reflects the shift in service focus away from hospital and a reduction in unnecessary use of hospital beds. In order to understand these changes, the following section outlines the proposed increase in overall elective admissions, before breaking these down into day cases and inpatient admissions based on the proportion of all elective admissions to be treated as day cases.

The NBI *Closer to Home* scenario assumes a 49% increase in all elective admissions, varying according to age as shown in Table 5.11. The data presented in Tables 5.12 and 5.13 below shows the effect of this *relative* admission rate increase, showing what would happen locally if the *change* set out in the NBI were achieved. The model assumes the NBI target change, rather than the absolute rates set out in the NBI, to allow for local health variation. Health is generally better across Cambridgeshire and Peterborough compared to the country as a whole, so in the future admission rates may remain somewhat lower than nationally.

Table 5.11: Target admission rate change set out in NBI *Closer to Home* scenario

| Age | 2003/2004 rate per 1,000 | 2019/2020 rate per 1,000 | NBI change an admission rates |
|------------|-------------------------------------|-------------------------------------|--|
| 0-4 | 57 | 64 | 12.3% |
| 5-14 | 45 | 48 | 6.7% |
| 15-24 | 83 | 96 | 15.7% |
| 25-44 | 83 | 96 | 15.7% |
| 45-64 | 192 | 266 | 38.5% |
| 65-74 | 304 | 466 | 53.3% |
| 75-84 | 320 | 490 | 53.1% |
| 85+ | 250 | 383 | 53.2% |

Table 5.12: Projected surgical elective admissions (day cases and inpatients combined), assuming NBI relative admissions rate change

| PCT | Current Activity | Projected Activity | | | | % Change |
|-------------------------------|-----------------------------|---------------------------|-------------|-------------|-------------|---------------------|
| | 2003 | 2006 | 2011 | 2016 | 2021 | |
| Cambridge City | 7,172 | 7,180 | 8,300 | 10,010 | 11,400 | 58.9% |
| East Cambridgeshire & Fenland | 11,411 | 11,990 | 14,500 | 17,330 | 20,200 | 77.1% |
| Huntingdonshire | 11,421 | 11,690 | 14,000 | 16,730 | 19,380 | 69.7% |
| South Cambridgeshire | 6,202 | 6,340 | 7,980 | 9,960 | 12,080 | 94.7% |
| GPPCP | 14,284 | 15,260 | 18,110 | 20,980 | 24,880 | 74.2% |
| Cambridgeshire & Peterborough | 50,490 | 52,460 | 62,890 | 75,010 | 87,940 | 74.2% |

Table 5.13: Projected non-surgical elective admissions (day cases and inpatients combined), assuming NBI relative admissions rate change

| PCT | Current Activity | Projected Activity | | | | % Change |
|-------------------------------|-----------------------------|---------------------------|-------------|-------------|-------------|---------------------|
| | 2003 | 2006 | 2011 | 2016 | 2021 | |
| Cambridge City | 5,037 | 5,020 | 5,840 | 7,060 | 7,970 | 58.2% |
| East Cambridgeshire & Fenland | 6,469 | 6,790 | 8,360 | 10,120 | 11,800 | 82.3% |
| Huntingdonshire | 7,375 | 7,620 | 9,390 | 11,400 | 13,130 | 78.0% |
| South Cambridgeshire | 4,876 | 4,980 | 6,380 | 8,080 | 9,780 | 100.6% |
| GPPCP | 4,950 | 5,310 | 6,390 | 7,470 | 8,880 | 79.4% |
| Cambridgeshire & Peterborough | 28,707 | 29,720 | 36,360 | 44,130 | 51,560 | 79.6% |

If all elective admissions were to increase by the amount specified in the NBI, this would result in a major increase in surgical and non-surgical elective admissions by 2021. These are divided into day cases and inpatient admissions on the basis of assumptions about the proportion of elective admissions that will be treated as day cases in the future.

5.4.1 Implications of elective activity increase on day case activity

The NBI specifies that, by 2020, 82% of elective admissions should be treated as day cases. The day case proportion currently varies slightly by PCT, as shown in Table 5.15. Day case proportions are higher among non-surgical specialties than surgical. Two variant scenarios have been used to breakdown future elective activity into day cases and admissions:

- Activity ↑ - assumes that, while activity increases, the proportion of elective cases treated as day cases remains at current levels.
- Day case ↑ - assumes that, by 2021, there has been around a 20% increase in the proportion of elective cases treated as day cases.

The proportions assumed are detailed in Table 5.14. The final two columns show the day case proportional change that has been applied to local proportions in the model. The NBI change of 18.8% has been applied to surgical specialties. To non-surgical specialties half of this change has been assumed, given that non-surgical day case proportions are already very high, and are unlikely to reach 100%. Day case proportions vary by age and have been applied by age in the model.

Table 5.14: Proportion of elective admissions currently carried out as day cases, by PCT

| PCT | Activity ↑ scenario | | Day case ↑ scenario | |
|-------------------------------|---------------------|--------------|---------------------|-------------------------|
| | Surgical | Non-surgical | NBI Change Surgical | NBI Change Non-surgical |
| Cambridge City | 66.8% | 84.8% | +18.8% | +9.4% |
| East Cambridgeshire & Fenland | 66.2% | 85.7% | +18.8% | +9.4% |
| Huntingdonshire | 69.3% | 87.2% | +18.8% | +9.4% |
| South Cambridgeshire | 65.8% | 86.0% | +18.8% | +9.4% |
| GPPCP | 61.2% | 81.3% | +18.8% | +9.4% |

Tables 5.15 and 5.16 overleaf show the day case activity change that would occur in each PCT under the two assumptions about change to day case proportions. With no increase in the proportion of elective admissions treated as day cases, given activity increase related to a growth in elective admissions and to population growth, surgical day cases are projected to increase by 74% and non-surgical day cases by 79%.

If the proportion of elective admissions treated as day cases were to rise in line with the change indicated in the NBI, this would result in a 100% rise in surgical day case activity across Cambridgeshire and Peterborough by 2021, and a 94% rise in non-surgical day cases.

There could be scope for the proportion of elective admissions treated as a day case to rise even further in GPPCP than assumed here. Day case proportions are currently notably lower at the Peterborough hospitals than elsewhere so there could be greater opportunity for change, beyond what is suggested by the NBI.

Table 5.15: Projected surgical day case activity if the NBI target proportion of elective admissions were achieved by 2021

| PCT | Day case proportion | Current | Projected Activity | | | | % Change |
|-------------------------------|---------------------|---------|--------------------|--------|--------|--------|----------|
| | | 2003 | 2006 | 2011 | 2016 | 2021 | |
| Cambridge City | Activity ↑ | 4,792 | 4,860 | 5,550 | 6,690 | 7,620 | 58.9% |
| | Day case % ↑ | 4,792 | 4,860 | 5,840 | 7,400 | 8,840 | 84.5% |
| East Cambridgeshire & Fenland | Activity ↑ | 7,554 | 8,260 | 9,570 | 11,420 | 13,330 | 76.5% |
| | Day case % ↑ | 7,554 | 8,260 | 10,070 | 12,580 | 15,320 | 102.8% |
| Huntingdonshire | Activity ↑ | 7,916 | 8,470 | 9,660 | 11,520 | 13,400 | 69.2% |
| | Day case % ↑ | 7,916 | 8,470 | 10,170 | 12,710 | 15,370 | 94.2% |
| South Cambridgeshire | Activity ↑ | 4,080 | 4,300 | 5,240 | 6,530 | 7,930 | 94.3% |
| | Day case % ↑ | 4,080 | 4,300 | 5,520 | 7,220 | 9,150 | 124.3% |
| GPPCP | Activity ↑ | 8,743 | 9,680 | 11,060 | 12,790 | 15,180 | 73.6% |
| | Day case % ↑ | 8,743 | 9,680 | 11,650 | 14,140 | 17,540 | 100.6% |
| Cambridgeshire & Peterborough | Activity ↑ | 33,085 | 35,570 | 41,080 | 48,950 | 57,460 | 73.7% |
| | Day case % ↑ | 33,085 | 35,570 | 43,250 | 54,050 | 66,220 | 100.2% |

Table 5.16: Projected non-surgical day case activity if the NBI target proportion of elective admissions were achieved by 2021

| PCT | Day case proportion assumed | Current Activity | Projected Activity | | | | % Change |
|-------------------------------|-----------------------------|------------------|--------------------|--------|--------|--------|----------|
| | | 2003 | 2006 | 2011 | 2016 | 2021 | |
| Cambridge City | Activity ↑ | 4,272 | 4,250 | 4,950 | 6,000 | 6,760 | 58.4% |
| | Day case % ↑ | 4,272 | 4,250 | 5,090 | 6,320 | 7,320 | 71.4% |
| East Cambridgeshire & Fenland | Activity ↑ | 5,545 | 5,820 | 7,160 | 8,670 | 10,090 | 82.0% |
| | Day case % ↑ | 5,545 | 5,820 | 7,350 | 9,130 | 10,880 | 96.2% |
| Huntingdonshire | Activity ↑ | 6,432 | 6,640 | 8,190 | 9,920 | 11,400 | 77.2% |
| | Day case % ↑ | 6,432 | 6,640 | 8,420 | 10,480 | 12,330 | 91.8% |
| South Cambridgeshire | Activity ↑ | 4,193 | 4,270 | 5,480 | 6,930 | 8,350 | 99.2% |
| | Day case % ↑ | 4,193 | 4,270 | 5,630 | 7,320 | 9,030 | 115.4% |
| GPPCP | Activity ↑ | 4,025 | 4,320 | 5,220 | 6,110 | 7,270 | 80.6% |
| | Day case % ↑ | 4,025 | 4,320 | 5,360 | 6,450 | 7,860 | 95.3% |
| Cambridgeshire & Peterborough | Activity ↑ | 24,467 | 25,300 | 31,000 | 37,630 | 43,870 | 79.3% |
| | Day case % ↑ | 24,467 | 25,300 | 31,850 | 39,700 | 47,420 | 93.8% |

5.4.2 Implications of elective activity increase on elective inpatient activity

This section describes the elective inpatient admissions arising from the increase in all elective admissions under the NBI *Closer to Home* scenario. The two scenarios modelled in part 5.3.3 above are repeated here:

- Activity ↑ - the activity increase given in the NBI is assumed, with no change to the proportion of elective admissions treated as day cases.
- Day case ↑ - the activity increase given in the NBI is assumed, accompanied by an increase in the proportion of elective admissions treated as day cases.

Table 5.17 shows the projected change in elective surgical admissions; Table 5.18 shows the rise in non-surgical admissions. The activity increase given in the NBI would give rise to an increase in surgical admissions of 75% by 2021, and in non-surgical admissions of 81%. If this rise were accompanied by the suggested increase in the proportion of elective admissions treated as day cases, this would drop to a 25% increase in surgical admissions and –2% decline in non-surgical admissions. Population change alone would give rise to a 28% rise in surgical admissions and 30% rise in non-surgical admissions (as shown in Tables 5.9 and 5.10), so increasing the proportion of admissions treated as day cases not only offsets the additional activity related to increased admission rates, but also the increased activity due to population change.

The implications of these activity changes for bed requirements are discussed in Section 6.

Table 5.17: Projected surgical elective inpatient admissions

| PCT | Day case proportion | Current | Projected Activity | | | | % Change |
|-------------------------------|---------------------|---------|--------------------|--------|--------|--------|----------|
| | | 2003 | 2006 | 2011 | 2016 | 2021 | |
| Cambridge City | Activity ↑ | 2,380 | 2,320 | 2,750 | 3,320 | 3,780 | 58.8% |
| | Day case % ↑ | 2,380 | 2,320 | 2,450 | 2,610 | 2,550 | 7.3% |
| East Cambridgeshire & Fenland | Activity ↑ | 3,857 | 3,730 | 4,920 | 5,910 | 6,870 | 78.2% |
| | Day case % ↑ | 3,857 | 3,730 | 4,430 | 4,750 | 4,890 | 26.7% |
| Huntingdonshire | Activity ↑ | 3,505 | 3,220 | 4,340 | 5,200 | 5,980 | 70.7% |
| | Day case % ↑ | 3,505 | 3,220 | 3,830 | 4,020 | 4,010 | 14.3% |
| South Cambridgeshire | Activity ↑ | 2,122 | 2,040 | 2,740 | 3,430 | 4,150 | 95.4% |
| | Day case % ↑ | 2,122 | 2,040 | 2,460 | 2,740 | 2,930 | 37.9% |
| GPPCP | Activity ↑ | 5,541 | 5,580 | 7,050 | 8,190 | 9,710 | 75.2% |
| | Day case % ↑ | 5,541 | 5,580 | 6,460 | 6,840 | 7,340 | 32.5% |
| Cambridgeshire & Peterborough | Activity ↑ | 17,405 | 16,890 | 21,800 | 26,050 | 30,490 | 75.2% |
| | Day case % ↑ | 17,405 | 16,890 | 19,630 | 20,960 | 21,720 | 24.8% |

Table 5.18: Projected non-surgical elective inpatient activity

| PCT | Day case proportion assumed | Current Activity | Projected Activity | | | | % Change |
|-------------------------------|-----------------------------|------------------|--------------------|-------|-------|-------|----------|
| | | 2003 | 2006 | 2011 | 2016 | 2021 | |
| Cambridge City | Activity ↑ | 765 | 760 | 880 | 1,070 | 1,210 | 57.6% |
| | Day case % ↑ | 765 | 760 | 750 | 740 | 650 | -15.2% |
| East Cambridgeshire & Fenland | Activity ↑ | 924 | 970 | 1,200 | 1,450 | 1,700 | 84.2% |
| | Day case % ↑ | 924 | 970 | 1,010 | 990 | 920 | -0.9% |
| Huntingdonshire | Activity ↑ | 943 | 970 | 1,210 | 1,480 | 1,730 | 83.9% |
| | Day case % ↑ | 943 | 970 | 970 | 920 | 800 | -15.6% |
| South Cambridgeshire | Activity ↑ | 683 | 700 | 900 | 1,150 | 1,430 | 108.9% |
| | Day case % ↑ | 683 | 700 | 750 | 770 | 750 | 9.5% |
| GPPCP | Activity ↑ | 925 | 990 | 1,180 | 1,360 | 1,610 | 74.1% |
| | Day case % ↑ | 925 | 990 | 1,030 | 1,020 | 1,020 | 10.2% |
| Cambridgeshire & Peterborough | Activity ↑ | 4,240 | 4,390 | 5,370 | 6,510 | 7,680 | 81.1% |
| | Day case % ↑ | 4,240 | 4,390 | 4,510 | 4,440 | 4,140 | -2.4% |

5.5 Emergency inpatient admissions – population-led

5.5.1 Surgical and non-surgical admissions

Tables 5.19 and 5.20 below set out the projected surgical and non-surgical emergency admissions for each PCT. The rates on which these are based are given in Appendix A3.4. Significant activity rises are projected for all PCTs, with the highest proportional increase in South Cambridgeshire PCT, at 40% for emergency surgical admissions and 54% for emergency non-surgical admissions. Overall, based on current admission rates, population growth across the Cambridgeshire and Peterborough Health Area would lead to an additional 5,100 emergency surgical admissions, and 12,100 emergency non-surgical admissions per year by 2021.

Table 5.19: Projected surgical emergency inpatient admissions by PCT

| PCT | Current Activity | Projected Activity | | | | % Change |
|-------------------------------|------------------|--------------------|--------|--------|--------|----------|
| | 2003 | 2006 | 2011 | 2016 | 2021 | |
| Cambridge City | 3,417 | 3,460 | 3,630 | 4,040 | 4,330 | 26.8% |
| East Cambridgeshire & Fenland | 3,906 | 4,100 | 4,380 | 4,650 | 4,940 | 26.3% |
| Huntingdonshire | 3,812 | 3,880 | 4,060 | 4,250 | 4,410 | 15.7% |
| South Cambridgeshire | 2,409 | 2,470 | 2,750 | 3,060 | 3,380 | 40.4% |
| GPPCP | 6,137 | 6,570 | 6,940 | 7,150 | 7,730 | 26.0% |
| Cambridgeshire & Peterborough | 19,681 | 20,480 | 21,750 | 23,150 | 24,790 | 26.0% |

Table 5.20: Projected non-surgical emergency inpatient admissions by PCT

| PCT | Current Activity | Projected Activity | | | | % Change |
|-------------------------------|------------------|--------------------|--------|--------|--------|----------|
| | 2003 | 2006 | 2011 | 2016 | 2021 | |
| Cambridge City | 5,626 | 5,630 | 5,780 | 6,280 | 6,530 | 16.0% |
| East Cambridgeshire & Fenland | 7,492 | 7,910 | 8,630 | 9,450 | 10,260 | 36.9% |
| Huntingdonshire | 8,875 | 9,080 | 9,770 | 10,650 | 11,430 | 28.8% |
| South Cambridgeshire | 4,405 | 4,600 | 5,230 | 5,980 | 6,800 | 54.4% |
| GPPCP | 10,642 | 11,470 | 12,260 | 12,920 | 14,120 | 32.7% |
| Cambridgeshire & Peterborough | 37,040 | 38,690 | 41,670 | 45,270 | 49,130 | 32.7% |

5.5.2 Emergency maternity inpatient admissions

Table 5.21 shows the effect of population growth and changing age-structure on emergency maternity admissions¹⁹. By 2021, admissions are projected to rise by 13.9% across Cambridgeshire and Peterborough. The most striking growth is seen in Cambridge City, where the projected increase in women of childbearing age has a major effect. Here maternity admissions are projected to rise by 45%, corresponding to an additional 1,300 admissions per year. It is worth emphasising that fertility rates are likely to remain low in Cambridge, but that this will depend very much on the nature of new housing. A significant proportion of low-cost family housing could lead to an increase in fertility and higher demand for maternity services than is projected below. As long as the city remains an unaffordable option for many young families, while the number of maternity admissions will change considerably in relative terms, the overall number will remain low.

The model projects an increase in maternity admissions from South Cambridgeshire of 20%. Based on the population characteristics, this is what would be expected from the population increase there. Again, however, the demand for maternity services will be sensitive to the nature of the new population. We have seen from experience in Cambourne that the women moving into new settlements may show extremely high fertility rates relative to the area around them. This is because the nature of the housing is particularly attractive to young families, for whom property size relative to cost is key. Should a similar effect be seen in Northstowe, maternity activity for South Cambridgeshire could rise more than projected below.

No further modelling of maternity admissions has been pursued. It is assumed that demographic change will have the most marked effect on maternity demand and that health service changes, such as those related to delivery *Closer to Home*, and changes to the nation's health, such as those related to Wanless, will not have a notable effect on maternity services. Instead, the precise nature of new housing in local areas will be important. With Northstowe, it will be important to learn from experiences in Cambourne and other new settlements.

¹⁹ Note that elective maternity admissions are not considered because the numbers involved are small; the majority of maternity admissions are emergencies.

Table 5.21: Projected maternity emergency inpatient admissions by PCT

| PCT | Current Activity | Projected Activity | | | | % Change |
|-------------------------------|------------------|--------------------|--------|--------|--------|----------|
| | 2003 | 2006 | 2011 | 2016 | 2021 | |
| Cambridge City | 2,931 | 2,980 | 3,180 | 3,690 | 4,240 | 44.7 % |
| East Cambridgeshire & Fenland | 2,702 | 2,820 | 2,860 | 2,880 | 2,950 | 9.3% |
| Huntingdonshire | 2,160 | 2,120 | 2,070 | 2,020 | 2,030 | -6.1% |
| South Cambridgeshire | 2,482 | 2,460 | 2,630 | 2,800 | 2,980 | 20.2% |
| GPPCP | 5,268 | 5,490 | 5,500 | 5,310 | 5,510 | 4.7% |
| Cambridgeshire & Peterborough | 15,543 | 15,870 | 16,240 | 16,700 | 17,710 | 13.9% |

5.6 Closer to Home changes affecting emergency inpatient admissions

The overall picture of future emergency admissions activity is complicated because of the different effects potential service changes may have. This report considers likely effects indicated by the NBI and Wanless. The NBI *Closer to Home* scenario suggests that the current trend of increasing emergency admission rates will continue, although to a lesser extent than currently due to a reduction in inappropriate admissions. Wanless, on the other hand, sees around a 15% decrease in the use of acute services by 2021, with a greater reduction in relation to coronary heart disease and stroke activity. These reductions are due to better population health in general, but specifically the effects of reduced smoking prevalence. It is beyond the scope of this report to consider specific disease groups separately, but the effects of a general decline in acute admissions are modelled below. Three scenarios are modelled in relation to emergency admissions.

- NBI – following the increase set out in the NBI *Closer to Home* scenario. Assumes no effect from a *Fully Engaged* population. Amounts to a 32.5% admissions rate increase.
- Wanless – following the Wanless *Fully Engaged* scenario. Assumes a 15% reduction in acute admissions for people aged 15 to 64, and a 10% reduction in people aged 65 and above. Assumes no effect from the NBI activity increase.²⁰
- Combined – assumes activity increase set out in the NBI and the reduction assumed in Wanless. Overall result is a moderated increase in admissions.

Tables 5.22 and 5.23 below show the activity change projected by these three scenarios. In terms of surgical admissions, the NBI activity increase combined with population growth would lead to an activity increase across Cambridgeshire and Peterborough of approaching 70% by 2021. When combined with population growth, the activity decline suggested by Wanless still leads to an 11% activity rise by 2021. Together, the NBI and Wanless, along with population growth, would lead to an activity rise of just over 40%. This equates to an additional 8,200 emergency surgical admissions per year compared to 2003.

²⁰ This scenario is broadly in line with the planned emergency admissions decrease specified in the NHS Plan, which suggests a 5% decrease by 2008. The NHS Plan change is not modelled explicitly.

Table 5.22: Surgical emergency inpatient admissions by PCT under different future scenarios

| PCT | Activity change | Current Activity | Projected Activity | | | | | % Change |
|-------------------------------|-----------------|------------------|--------------------|--------|--------|--------|-------|----------|
| | | 2003 | 2006 | 2011 | 2016 | 2021 | | |
| Cambridge City | NBI | 3,417 | 3,460 | 3,930 | 4,710 | 5,420 | 58.5% | |
| | Wanless | 3,417 | 3,460 | 3,470 | 3,700 | 3,790 | 10.8% | |
| | Combined | 3,417 | 3,460 | 3,780 | 4,370 | 4,870 | 42.5% | |
| East Cambridgeshire & Fenland | NBI | 3,906 | 4,100 | 4,740 | 5,420 | 6,140 | 57.2% | |
| | Wanless | 3,906 | 4,100 | 4,200 | 4,280 | 4,340 | 11.1% | |
| | Combined | 3,906 | 4,100 | 4,560 | 5,040 | 5,540 | 42.0% | |
| Huntingdonshire | NBI | 3,812 | 3,880 | 4,400 | 4,950 | 5,490 | 43.9% | |
| | Wanless | 3,812 | 3,880 | 3,890 | 3,900 | 3,870 | 1.6% | |
| | Combined | 3,812 | 3,880 | 4,230 | 4,600 | 4,950 | 29.9% | |
| South Cambridgeshire | NBI | 2,409 | 2,470 | 2,980 | 3,550 | 4,190 | 73.9% | |
| | Wanless | 2,409 | 2,470 | 2,640 | 2,820 | 2,990 | 23.9% | |
| | Combined | 2,409 | 2,470 | 2,870 | 3,310 | 3,790 | 57.4% | |
| GPPCP | NBI | 6,137 | 6,570 | 7,520 | 8,340 | 9,640 | 57.2% | |
| | Wanless | 6,137 | 6,570 | 6,650 | 6,560 | 6,770 | 10.4% | |
| | Combined | 6,137 | 6,570 | 7,230 | 7,750 | 8,690 | 41.6% | |
| Cambridgeshire & Peterborough | NBI | 19,681 | 20,480 | 23,570 | 26,970 | 30,880 | 56.9% | |
| | Wanless | 19,681 | 20,480 | 20,850 | 21,260 | 21,760 | 10.6% | |
| | Combined | 19,681 | 20,480 | 22,670 | 25,070 | 27,840 | 41.5% | |

In terms of non-surgical activity, the pattern is similar. The NBI change alone would lead to a 64% increase across Cambridgeshire and Peterborough, compared to a 19% increase due to the effects of Wanless. Combined together, a 51% activity increase is projected.

Table 5.23: Non-surgical emergency inpatient admissions by PCT under different future scenarios

| PCT | Activity change | Current Activity | Projected Activity | | | | | % Change |
|-------------------------------|-----------------|------------------|--------------------|--------|--------|--------|-------|----------|
| | | 2003 | 2006 | 2011 | 2016 | 2021 | | |
| Cambridge City | NBI | 5,626 | 5,630 | 6,260 | 7,320 | 8,160 | 45.0% | |
| | Wanless | 5,626 | 5,630 | 5,560 | 5,800 | 5,780 | 2.8% | |
| | Combined | 5,626 | 5,630 | 6,040 | 6,840 | 7,410 | 31.7% | |
| East Cambridgeshire & Fenland | NBI | 7,492 | 7,910 | 9,310 | 10,920 | 12,620 | 68.4% | |
| | Wanless | 7,492 | 7,910 | 8,330 | 8,800 | 9,200 | 22.8% | |
| | Combined | 7,492 | 7,910 | 9,010 | 10,270 | 11,560 | 54.4% | |
| Huntingdonshire | NBI | 8,875 | 9,080 | 10,590 | 12,410 | 14,210 | 60.1% | |
| | Wanless | 8,875 | 9,080 | 9,430 | 9,910 | 10,250 | 15.5% | |
| | Combined | 8,875 | 9,080 | 10,250 | 11,670 | 13,030 | 46.8% | |
| South Cambridgeshire | NBI | 4,405 | 4,600 | 5,650 | 6,910 | 8,380 | 90.1% | |
| | Wanless | 4,405 | 4,600 | 5,040 | 5,550 | 6,070 | 37.8% | |
| | Combined | 4,405 | 4,600 | 5,460 | 6,490 | 7,650 | 73.6% | |
| GPPCP | NBI | 10,642 | 11,470 | 13,270 | 15,010 | 17,520 | 64.6% | |
| | Wanless | 10,642 | 11,470 | 11,890 | 12,120 | 12,810 | 20.4% | |
| | Combined | 10,642 | 11,470 | 12,890 | 14,210 | 16,210 | 52.3% | |
| Cambridgeshire & Peterborough | NBI | 37,040 | 38,690 | 45,080 | 52,570 | 60,890 | 64.4% | |
| | Wanless | 37,040 | 38,690 | 40,250 | 42,180 | 44,110 | 19.1% | |
| | Combined | 37,040 | 38,690 | 43,650 | 49,480 | 55,860 | 50.8% | |

The implications of these activity changes in terms of bed requirements are discussed in Section 6.

6 Future healthcare capacity: Bed requirements

This section illustrates the implications of the activity changes shown in Section 5 in terms of bed requirements. Elective beds are described in terms of day case beds and inpatient beds; emergency bed requirements are given. The requirements relate to surgical and non-surgical beds combined. Maternity beds are considered separately.

6.1 Day case bed requirements

It is possible to estimate the bed requirements relating to day case attendance, based on assumptions about bed utilisation rates. Tables 5.14 and 5.15 overleaf give the implications of these activity changes for day case bed requirements. These calculations assume that each bed is used for 1.2 day cases per day. Over 365 days each bed holds 446.6 day cases.²¹ Bed requirements for all day cases are shown, with no distinction given between surgical and non-surgical requirements.

Three scenarios are modelled:

- Population led – bed requirements assuming activity and day case proportions remain at current levels.
- Activity ↑ – assumes the increase in elective activity given in the NBI *Closer to Home* scenario but that there is no change to the proportion treated as day cases.
- Day case % ↑ – assumes the elective activity increase given in the NBI *Closer to Home* scenario and that the proportion treated as day cases increases.

²¹ This follows other capacity planning work carried out by Matrix RCL. For example, Thames Gateway South Essex – Technical specification to the final report, April 2004.

Table 6.1: Projected day case bed requirements (all specialties)

| PCT | Day case proportion assumed | Current beds | Projected Beds | | | | % Change |
|-------------------------------|-----------------------------|--------------|----------------|------|------|------|----------|
| | | 2003 | 2006 | 2011 | 2016 | 2021 | |
| Cambridge City | Population-led | 20 | 20 | 21 | 23 | 24 | 19% |
| | Activity ↑ | 20 | 20 | 24 | 28 | 32 | 59% |
| | Day case % ↑ | 20 | 20 | 24 | 31 | 36 | 78% |
| East Cambridgeshire & Fenland | Population-led | 29 | 31 | 33 | 36 | 38 | 28% |
| | Activity ↑ | 29 | 32 | 37 | 45 | 52 | 79% |
| | Day case % ↑ | 29 | 32 | 39 | 49 | 59 | 100% |
| Huntingdonshire | Population-led | 32 | 33 | 36 | 38 | 40 | 24% |
| | Activity ↑ | 32 | 34 | 40 | 48 | 56 | 73% |
| | Day case % ↑ | 32 | 34 | 42 | 52 | 62 | 93% |
| South Cambridgeshire | Population-led | 19 | 19 | 21 | 24 | 26 | 42% |
| | Activity ↑ | 19 | 19 | 24 | 30 | 36 | 97% |
| | Day case % ↑ | 19 | 19 | 25 | 33 | 41 | 120% |
| GPPCP | Population-led | 29 | 31 | 33 | 34 | 37 | 28% |
| | Activity ↑ | 29 | 31 | 36 | 42 | 50 | 76% |
| | Day case % ↑ | 29 | 31 | 38 | 46 | 57 | 99% |
| Cambridgeshire & Peterborough | Population-led | 129 | 134 | 144 | 155 | 164 | 27% |
| | Activity ↑ | 129 | 136 | 161 | 194 | 227 | 76% |
| | Day case % ↑ | 129 | 136 | 168 | 210 | 254 | 97% |

By 2021, population growth alone would lead day case bed requirements to increase by 27% across Cambridgeshire and Peterborough. If day case activity were to increase in line with the elective activity increase suggested by the NBI *Closer to Home* scenario, this would lead to a 76% increase in bed requirements, equating to 98 additional day case beds. If the proportion of all elective admissions treated as day cases were to rise in line with that suggested in the NBI, this would lead bed requirements to almost double, with an additional 125 beds needed by 2021 across Cambridgeshire and Peterborough.

6.2 Inpatient bed requirements

It is possible to estimate the inpatient bed requirements resulting from the elective and emergency inpatient admissions scenarios described in Section 5. Estimating inpatient bed usage requires assumptions about bed occupancy rates (the proportion of potential bed days that are occupied over the course of a year) and about length of stay (LOS, the average number of days each patient stays in hospital). Elective and emergency beds are discussed in turn. Surgical and non-surgical beds are considered together.

6.2.1 Elective inpatient beds

Table 6.2 below outlines the elective admission length of stay and occupancy assumptions that have been used in the model. In this section these are assumed to remain constant in the future. The effects of changes to these assumptions are tested in section 6.2.2.

Table 6.2: Elective inpatient average length of stay and occupancy assumptions

| Age band | Average length of stay (days) | | | | | Inpatient occupancy |
|----------|-------------------------------|----------------------|-----------------|----------------------|-------|---------------------|
| | Cambridge City | East Cambs & Fenland | Huntingdonshire | South Cambridgeshire | GPPCP | |
| 0-4 | 2.01 | 1.82 | 3.95 | 1.41 | 1.70 | 80% |
| 5-14 | 1.94 | 1.95 | 1.66 | 1.94 | 1.32 | 80% |
| 15-24 | 2.37 | 2.89 | 3.14 | 2.58 | 2.29 | 95% |
| 25-44 | 3.18 | 2.93 | 2.83 | 2.56 | 2.18 | 95% |
| 45-64 | 3.62 | 3.56 | 4.22 | 3.64 | 3.38 | 95% |
| 65-74 | 4.66 | 4.82 | 4.81 | 4.59 | 4.62 | 95% |
| 75-84 | 5.62 | 5.26 | 5.77 | 5.83 | 5.93 | 95% |
| 85+ | 5.23 | 8.13 | 7.05 | 9.69 | 5.76 | 95% |

Table 6.3 shows the bed requirements resulting from the three elective inpatient activity scenarios given in Section 5. The three scenarios are:

- Population-led – models the increased bed requirements due to demographic change, assuming no other service change.
- Activity ↑ - models the increase in elective activity given in the NBI *Closer to Home* scenario but assumes no change to the proportion of elective admissions treated as day cases.
- Day case ↑ - assumes the elective activity increase given in the NBI *Closer to Home* scenario and that the proportion treated as day cases increases.

Table 6.3: Elective inpatient bed requirements by PCT

| PCT | Day case proportion assumed | Current | Projected Beds | | | | | % Change |
|-------------------------------|-----------------------------|---------|----------------|------|------|------|------|----------|
| | | 2003 | 2006 | 2011 | 2016 | 2021 | | |
| Cambridge City | Population-led | 36 | 35 | 36 | 39 | 41 | 15% | |
| | Activity ↑ | 36 | 35 | 41 | 49 | 56 | 57% | |
| | Day case % ↑ | 36 | 35 | 36 | 38 | 37 | 5% | |
| East Cambridgeshire & Fenland | Population-led | 56 | 59 | 64 | 70 | 75 | 34% | |
| | Activity ↑ | 56 | 56 | 73 | 90 | 107 | 92% | |
| | Day case % ↑ | 56 | 56 | 66 | 71 | 74 | 33% | |
| Huntingdonshire | Population-led | 53 | 55 | 61 | 67 | 70 | 32% | |
| | Activity ↑ | 53 | 51 | 69 | 85 | 100 | 88% | |
| | Day case % ↑ | 53 | 51 | 60 | 64 | 65 | 21% | |
| South Cambridgeshire | Population-led | 33 | 34 | 39 | 45 | 50 | 52% | |
| | Activity ↑ | 33 | 33 | 44 | 57 | 72 | 118% | |
| | Day case % ↑ | 33 | 33 | 39 | 45 | 49 | 49% | |
| GPPCP | Population-led | 65 | 70 | 76 | 81 | 88 | 36% | |
| | Activity ↑ | 65 | 67 | 86 | 104 | 126 | 94% | |
| | Day case % ↑ | 65 | 67 | 79 | 87 | 96 | 47% | |
| Cambridgeshire & Peterborough | Population-led | 243 | 253 | 276 | 302 | 324 | 33% | |
| | Activity ↑ | 243 | 242 | 313 | 385 | 461 | 90% | |
| | Day case % ↑ | 243 | 242 | 280 | 305 | 321 | 32% | |

Population growth alone will lead to a 33% increase in elective inpatient bed requirements across Cambridgeshire and Peterborough by 2021, which corresponds to an additional 80 beds. If the activity increase specified by the NBI *Closer to Home* scenario were experienced, this would lead to a 90% increase in bed requirements, equating to an additional 220 beds. If the suggested change to the proportion of elective admissions treated as day cases were also experienced, this would reduce the additional requirements to just a 32% increase, corresponding to 80 beds. The effect of the shift towards treating more elective admissions as day cases therefore offsets the higher admission rates but is insufficient to offset additional demand linked to demographic change.

Section 6.2.2 below shows how the bed requirements would differ if alternative assumptions are made about length of stay and bed occupancy in the future.

6.2.2 Elective inpatient bed requirements given variant length of stay and occupancy assumptions

Length of stay is a key parameter for change under the NBI *Closer to Home* scenario. Inappropriate bed days will be kept to a minimum and there will be a reduction in bed days for recuperation and rehabilitation that could be provided in an intermediate care setting. Overall, a reduction in length of stay of 36% is suggested by 2019/2020. Reducing length of stay will, to some extent, mediate the extra bed demand generated by increased activity.

Bed occupancy is currently very high across Cambridgeshire and Peterborough, at 90% to 100% for adult beds. The model assumes bed occupancy of 80% for children's beds and 95% for adults' beds. In terms of making the most efficient use of beds, lower bed occupancy is desirable. Research carried out on behalf of the NHS Executive showed that the risk of bed shortages remains low as long as average occupancy is below 85%²². Lower bed occupancy also reduces the risk of hospital-acquired infections. Even lower occupancy rates are necessary for children's beds. Two versions of the length of stay scenarios are modelled: one with occupancy remaining at current levels, and one with occupancy reduced to 84% for adult beds (and 70% for children's beds).

Table 6.4 overleaf shows the change in average length of stay by age as specified in the NBI *Closer to Home* scenario. Two scenarios are run: in one it is assumed that the full *percentage reduction* in length of stay specified in the NBI is achieved by 2021. This allows for local variation in health status and assumes that local trusts are not yet running at optimal length of stay levels. It is assumed that any minimum possible length of stay is some way off. The second scenario assumes that half of the NBI target change is attained locally. This version recognises that, given that local trusts already have low length of stay compared to current national averages, it is unreasonable to expect the full percentage reduction specified in the NBI. It is likely that there is some 'minimum feasible' length of stay and this version assumes that locally we are closer to this.

²² **Bagust et al.** Dynamics of bed use in accommodating emergency admissions: stochastic simulation model *BMJ* 1999; **319**; 155-158.

Table 6.4: Average length of stay assumptions for elective inpatient admissions

| Age band | NBI Baseline 2003/2004 LOS | NBI <i>Closer to Home</i> 2019/2020 LOS | Scenario 1 "Full reduction" NBI % change | Scenario 2 "Partial reduction" Partial NBI % Change |
|----------|-------------------------------|--|--|---|
| 0-4 | 2.31 | 1.78 | -23% | -11.5% |
| 5-14 | 1.84 | 1.33 | -28% | -13.9% |
| 15-24 | 2.92 | 1.92 | -34% | -17.1% |
| 25-44 | 2.92 | 1.92 | -34% | -17.1% |
| 45-64 | 4.06 | 2.53 | -38% | -18.8% |
| 65-74 | 5.29 | 2.93 | -45% | -22.3% |
| 75-84 | 6.77 | 3.75 | -45% | -22.3% |
| 85+ | 8.93 | 4.94 | -45% | -22.3% |

Four alternative scenarios are shown below for each of the activity variants modelled in Table 6.3; the scenarios can be summarised as follows:

No change to bed occupancy rates

- Full LOS reduction – the full NBI percentage reduction in length of stay is assumed
- Partial LOS reduction – half the NBI percentage reduction is achieved

Bed occupancy is reduced to optimal levels

- Full LOS reduction – the "ideal" scenario – the full NBI percentage reduction in length of stay is assumed
- Partial LOS reduction – half the NBI percentage reduction is achieved

To make comparison easier, just the data for Cambridgeshire and Peterborough are given in Table 6.5; the full tables by PCT are available in Appendix A4.1.

Table 6.5: Elective inpatient bed requirements given variant LOS and occupancy assumptions

| LOS change | Occupancy change | Day case proportion assumed | Current | Projected Beds | | | | | % Change |
|-------------------|------------------|-----------------------------|---------|----------------|------|------|------|------|----------|
| | | | 2003 | 2006 | 2011 | 2016 | 2021 | | |
| No change | No change | Population-led | 243 | 253 | 276 | 302 | 324 | 33% | |
| | | Activity ↑ | 243 | 242 | 313 | 385 | 461 | 90% | |
| | | Day case % ↑ | 243 | 242 | 280 | 305 | 321 | 32% | |
| Full reduction | No change | Population-led | 243 | 253 | 240 | 220 | 193 | -21% | |
| | | Activity ↑ | 243 | 242 | 271 | 282 | 272 | 12% | |
| | | Day case % ↑ | 243 | 242 | 244 | 222 | 187 | -23% | |
| Partial reduction | No change | Population-led | 243 | 253 | 258 | 261 | 257 | 6% | |
| | | Activity ↑ | 243 | 242 | 292 | 335 | 367 | 51% | |
| | | Day case % ↑ | 243 | 242 | 262 | 264 | 255 | 5% | |
| Full reduction | Reduced | Population-led | 243 | 253 | 250 | 238 | 217 | -11% | |
| | | Activity ↑ | 243 | 242 | 283 | 304 | 307 | 26% | |
| | | Day case % ↑ | 243 | 242 | 252 | 241 | 213 | -12% | |
| Partial reduction | Reduced | Population-led | 243 | 253 | 268 | 283 | 293 | 21% | |
| | | Activity ↑ | 243 | 242 | 305 | 362 | 414 | 70% | |
| | | Day case % ↑ | 243 | 241 | 273 | 286 | 288 | 19% | |

With no change to length of stay or to bed occupancy rates, the additional activity projected under the *Closer to Home* scenario (with a higher proportion of admissions treated as day cases) results in a 32% increase in beds. Table 6.5 shows that, if the full length of stay reduction were achieved, this would be reduced to a 23% decline in beds. Even with decreased bed occupancy there would still be a reduction in beds of 12%. Comparing the full length of stay reduction scenarios with the partial reduction scenarios shows clearly the dominance of length of stay as a determinant for bed requirements.

6.2.3 Emergency inpatient bed requirements

Table 6.6 below outlines the emergency admission length of stay and occupancy assumptions that have been used in the model. In this section these are assumed to remain constant in the future. The effects of changes to these assumptions are tested in section 6.2.4.

Table 6.6: Emergency inpatient average length of stay and occupancy assumptions

| Age band | Average LOS (days) – Surgical and non-surgical specialties | | | | | Average LOS Maternity | Inpatient occupancy |
|----------|--|----------------------|-------|-------------|-------|-----------------------|---------------------|
| | Cambridge City | East Cambs & Fenland | Hunts | South Cambs | GPPCP | All PCT average | |
| 0-4 | 2.96 | 2.34 | 1.27 | 2.83 | 1.18 | - | 80% |
| 5-14 | 1.99 | 1.69 | 1.37 | 1.69 | 1.17 | - | 80% |
| 15-24 | 2.65 | 2.65 | 2.11 | 2.84 | 2.15 | 1.25 | 95% |
| 25-44 | 3.68 | 3.63 | 2.64 | 3.33 | 3.17 | 1.55 | 95% |
| 45-64 | 6.45 | 5.33 | 4.42 | 5.34 | 5.23 | 1.81 | 95% |
| 65-74 | 8.77 | 8.67 | 7.19 | 7.77 | 9.07 | - | 95% |
| 75-84 | 11.47 | 11.86 | 9.97 | 12.34 | 12.62 | - | 95% |
| 85+ | 15.70 | 14.03 | 12.46 | 16.02 | 16.36 | - | 95% |

Table 6.7 overleaf shows the projected increase in bed requirements associated with the four activity scenarios described in section 5.

Across Cambridgeshire and Peterborough, population growth alone would lead to a bed requirement increase of 45%, equating to an additional 480 beds. Under the Wanless *Fully Engaged* scenario, which assumes an activity decline due to improved population health, the requirement increase would be reduced to 29%, corresponding to an additional 310 beds. The NBI *Closer to Home* scenario would lead to a requirement increase of 75%, equal to 820 beds. Under the Combined scenario, a bed increase of 60% would be required, equal to an additional 650 beds. This allows for the activity increase described in the NBI combined with the activity decrease described in Wanless.

Table 6.7: Projected emergency inpatient bed requirements under different scenarios

| PCT | Activity change | Current beds | Projected beds | | | | | % Change |
|-------------------------------|-----------------|--------------|----------------|-------|-------|-------|------|----------|
| | | 2003 | 2006 | 2011 | 2016 | 2021 | | |
| Cambridge City | Population-led | 198 | 198 | 202 | 216 | 222 | 12% | |
| | NBI | 198 | 198 | 217 | 249 | 273 | 38% | |
| | Wanless | 198 | 198 | 194 | 200 | 197 | 0% | |
| | Combined | 198 | 198 | 209 | 233 | 248 | 25% | |
| East Cambridgeshire & Fenland | Population-led | 240 | 255 | 283 | 317 | 352 | 47% | |
| | NBI | 240 | 255 | 303 | 362 | 426 | 77% | |
| | Wanless | 240 | 255 | 273 | 294 | 315 | 31% | |
| | Combined | 240 | 255 | 293 | 339 | 389 | 62% | |
| Huntingdonshire | Population-led | 191 | 200 | 223 | 254 | 283 | 48% | |
| | NBI | 191 | 200 | 240 | 291 | 343 | 79% | |
| | Wanless | 191 | 200 | 215 | 235 | 252 | 32% | |
| | Combined | 191 | 200 | 232 | 272 | 313 | 63% | |
| South Cambridgeshire | Population-led | 152 | 162 | 187 | 217 | 253 | 66% | |
| | NBI | 152 | 162 | 200 | 247 | 305 | 100% | |
| | Wanless | 152 | 162 | 180 | 201 | 226 | 48% | |
| | Combined | 152 | 162 | 193 | 232 | 278 | 83% | |
| GPPCP | Population-led | 302 | 334 | 371 | 404 | 456 | 51% | |
| | NBI | 302 | 334 | 398 | 462 | 553 | 83% | |
| | Wanless | 302 | 334 | 358 | 375 | 407 | 35% | |
| | Combined | 302 | 334 | 385 | 433 | 504 | 67% | |
| Cambridgeshire & Peterborough | Population-led | 1,083 | 1,149 | 1,266 | 1,408 | 1,566 | 45% | |
| | NBI | 1,083 | 1,149 | 1,358 | 1,611 | 1,900 | 75% | |
| | Wanless | 1,083 | 1,150 | 1,219 | 1,306 | 1,396 | 29% | |
| | Combined | 1,083 | 1,149 | 1,312 | 1,509 | 1,732 | 60% | |

Table 6.8 below shows the requirement for maternity beds by PCT. Across Cambridgeshire and Peterborough, as additional 12 beds are required by 2021, amounting to a 12% increase. The requirements are projected to increase most in relation to the population growth in Cambridge City and South Cambridgeshire. In Huntingdonshire, bed demand is projected to decline very slightly.

Table 6.8: Projected maternity emergency inpatient bed requirements by PCT

| PCT | Current beds | Projected beds | | | | | % Change |
|-------------------------------|--------------|----------------|------|------|------|-----|----------|
| | 2003 | 2006 | 2011 | 2016 | 2021 | | |
| Cambridge City | 17 | 17 | 18 | 21 | 25 | 45% | |
| East Cambridgeshire & Fenland | 15 | 15 | 15 | 16 | 16 | 9% | |
| Huntingdonshire | 12 | 12 | 12 | 11 | 11 | -7% | |
| South Cambridgeshire | 15 | 14 | 15 | 16 | 17 | 20% | |
| GPPCP | 30 | 31 | 31 | 30 | 31 | 5% | |
| Cambridgeshire & Peterborough | 89 | 90 | 92 | 95 | 101 | 12% | |

6.2.4 Emergency inpatient bed requirements given variant length of stay and occupancy assumptions

Length of stay for emergency admissions is also a key area for change under the NBI *Closer to Home* scenario. Overall a 20% reduction in length of stay is suggested by 2019/2020. As with elective admissions, reducing length of stay will, to some extent, mediate the extra emergency bed demand generated by increased activity. As with elective admissions, a reduction in bed occupancy would be desirable. Two versions of the length of stay scenarios are modelled: one with occupancy remaining at current levels, and one with occupancy reduced to 84% for adult beds and 70% for children’s beds.

Table 6.9 below shows the change in average length of stay by age as specified in the NBI *Closer to Home* scenario. Again, as with elective admissions, two scenarios are run. In the first it is assumed that the full *percentage reduction* in length of stay specified in the NBI is achieved by 2021. In the second it is assumed that half of the NBI target change is achieved.

Table 6.9: Average length of stay for emergency admissions, NBI *Closer to Home* scenario

| Age band | NBI 2003/2004 | <i>Closer to Home</i> 2019/2020 | Scenario 1 NBI % change | Scenario 2 Partial NBI % Change |
|-----------------|------------------|------------------------------------|----------------------------|------------------------------------|
| 0-4 | 1.73 | 1.10 | -36.4% | -18.2% |
| 5-14 | 1.94 | 1.44 | -25.8% | -12.9% |
| 15-24 | 2.90 | 1.79 | -38.3% | -19.1% |
| 25-44 | 2.90 | 1.79 | -38.3% | -19.1% |
| 45-64 | 5.95 | 3.54 | -40.5% | -20.3% |
| 65-74 | 8.79 | 4.94 | -43.8% | -21.9% |
| 75-84 | 11.87 | 6.67 | -43.8% | -21.9% |
| 85+ | 14.62 | 8.22 | -43.8% | -21.9% |

Four scenarios are given below for each of the activity variants described in section 5.6: the scenarios can be summarised as follows:

No change to bed occupancy rates

- Full LOS reduction – the full NBI percentage reduction in length of stay is assumed
- Partial LOS reduction – half the NBI percentage reduction is achieved

Bed occupancy is reduced to optimal levels

- Full LOS reduction – the “ideal” scenario – the full NBI percentage reduction in length of stay is assumed
- Partial LOS reduction – half the NBI percentage reduction is achieved

To make comparisons easier, just the Cambridgeshire and Peterborough totals are given here; the full tables by PCT are given in Appendix A4.2.

The variants described below show that population growth alone could lead to an emergency bed requirement change of between –17% and +29%, depending on the assumptions made about length of stay and occupancy rates in the future. Using the “ideal” scenario, in which the full NBI LOS reduction is achieved and occupancy increases, bed demand could decline

by 6% in the absence of other activity change. Under the “Combined” activity scenario, where the combined effects of Wanless and the *Closer to Home* scenario are assumed, this would lead to a 4% increase in bed requirements, amounting to an additional 44 beds by 2021. Under the same activity scenario, achieving the occupancy reduction, but only a partial LOS reduction, would lead to an additional 460 beds being required (an increase of 42%). This illustrates the importance of achieving a LOS reduction in order to mediate the effects of increased activity related to population growth and increased demand.

In summary, it should be noted that increased activity due to both population growth and demand increase may be mediated, in terms of bed requirements, by achieving the LOS reduction set out in the NBI, even allowing for reduced bed occupancy. It should be remembered, however, that these changes would vary by PCT. By 2021, therefore, it would be theoretically possible to cater for the additional emergency activity without a notable increase in bed numbers across Cambridgeshire and Peterborough as a whole. In the intervening years, however, there would be a need for additional beds as the population grows but before LOS reductions have an effect. Further, the LOS reductions set out in the NBI assume a position of extreme change and there would be a significant risk that these lower rates would not be achieved. Bed requirements are extremely sensitive to LOS changes, so any failure to reach the NBI target change would have a dramatic effect.

Table 6.10: Effect of variant length of stay and occupancy assumptions on emergency inpatient bed requirements for Cambridgeshire and Peterborough

| LOS change | Occupancy change | Activity change | Current beds 2003 | Projected beds | | | | % Change |
|-------------------|------------------|-----------------|-------------------|----------------|-------|-------|-------|----------|
| | | | | 2006 | 2011 | 2016 | 2021 | |
| No change | No change | Population | 1,083 | 1,149 | 1,266 | 1,408 | 1,566 | 45% |
| | | NBI | | | 1,358 | 1,611 | 1,900 | 75% |
| | | Wanless | | | 1,219 | 1,306 | 1,396 | 29% |
| | | Combined | | | 1,312 | 1,509 | 1,732 | 60% |
| Full reduction | No change | Population | 1,083 | 1,149 | 1,087 | 1,010 | 900 | -17% |
| | | NBI | | | 1,166 | 1,157 | 1,094 | 1% |
| | | Wanless | | | 1,047 | 937 | 802 | -26% |
| | | Combined | | | 1,128 | 1,083 | 996 | -8% |
| Partial reduction | No change | Population | 1,083 | 1,149 | 1,176 | 1,209 | 1,233 | 14% |
| | | NBI | | | 1,263 | 1,384 | 1,497 | 38% |
| | | Wanless | | | 1,133 | 1,121 | 1,100 | 2% |
| | | Combined | | | 1,220 | 1,296 | 1,364 | 26% |
| Full reduction | Reduced | Population | 1,083 | 1,149 | 1,132 | 1,094 | 1,020 | -6% |
| | | NBI | | | 1,214 | 1,254 | 1,238 | 14% |
| | | Wanless | | | 1,089 | 1,015 | 908 | -16% |
| | | Combined | | | 1,172 | 1,174 | 1,127 | 4% |
| Partial reduction | Reduced | Population | 1,083 | 1,149 | 1,223 | 1,311 | 1,396 | 29% |
| | | NBI | | | 1,313 | 1,500 | 1,693 | 56% |
| | | Wanless | | | 1,179 | 1,215 | 1,244 | 15% |
| | | Combined | | | 1,268 | 1,404 | 1,543 | 42% |

7 Future healthcare capacity: A&E and ambulance activity

7.1 Accident and emergency attendances

Table 7.1 below shows projected accident and emergency attendance by PCT. The activity rates on which these are based are given in Appendix 5. The highest proportional activity increases are associated with South Cambridgeshire and Cambridge City PCTs, at around one third each. The lowest increase is projected for Huntingdonshire. It is notable that the increase in A&E activity more closely resembles the pattern of projected population growth than many other sectors of health care. This is because the age structure of A&E attendees is less skewed towards the very young or very old.

Overall, an additional 27,000 attendances are projected annually by 2021. This is an increase of 20%.

Table 7.1: Projected total A&E attendances by PCT

| PCT | Current Activity | Projected Activity | | | | % Change |
|--------------------------------|------------------|--------------------|---------|---------|---------|----------|
| | 2003 | 2006 | 2011 | 2016 | 2021 | |
| Cambridge City | 23,347 | 23,740 | 25,160 | 28,300 | 30,800 | 31.9% |
| East Cambridgeshire & Fenland* | 23,574 | 24,690 | 26,010 | 27,190 | 28,450 | 20.7% |
| Huntingdonshire | 30,453 | 30,770 | 31,690 | 32,560 | 33,270 | 9.2% |
| South Cambridgeshire | 15,417 | 15,680 | 17,240 | 18,840 | 20,560 | 33.3% |
| GPPCP | 41,985 | 44,280 | 45,620 | 45,910 | 48,720 | 16.1% |
| Cambridgeshire & Peterborough | 134,776 | 139,160 | 145,710 | 152,790 | 161,800 | 20.1% |

*These data probably underestimate A&E attendances in this PCT. The recording systems have recently begun to include activity at King's Lynn and Wisbech Hospitals NHS Trust but the data for 2003/2004 do not represent the complete year's activity. At this stage the quality of the data is questionable.

Under a Wanless *Fully Engaged* scenario a slight reduction in A&E attendances might be expected; people would be more in control of their health and would be more likely to seek help for health problems locally, before they become emergencies. Patients with chronic disease will be more involved in the management of their conditions and less likely to require emergency treatment for them. The changes would be likely only to have a slight effect on the number of attendances made at A&E

Under an NBI Care *Closer to Home* scenario, minor injury units are expected to transfer a considerable portion of A&E attendances away from acute hospitals and towards a primary or community care setting. According to the Department of Health, "around half of patients visiting A&E have relatively minor injuries or illnesses"²³. The NHS plan states that "round the clock medical care for minor ailments and accidents will be available for all within convenient travelling distance".

²³ **Department of Health.** Modernising Emergency Care Article, available on: http://www.dh.gov.uk/PolicyAndGuidance/OrganisationPolicy/EmergencyCare/ModernisingEmergencyCare/ModernisingEmergencyCareArticle/fs/en?CONTENT_ID=4063813&chk=cB44Sc Accessed 13th August 2005

While policy directives look forward to reduced attendance at A&E departments, over recent years attendances have shown a gradual rise. With shorter waiting times it is possible that more people will be inclined to attend A&E for minor ailments, resulting in an increased number of attendances.

Table 7.2 overleaf demonstrates the possible effects of the above factors on A&E attendances. The following activity changes are modelled:

- 10% activity increase – no alternative provision for minor injuries, no change in attendance due to better management of long term conditions or increased engagement in health. Increase in activity above current trend, potentially due to decline in access to alternative care in primary or community setting or to change in social conditions.
- 5% activity increase – no alternative provision for minor injuries, no change in attendance due to better management of long term conditions or increased engagement in health. Slight rise in attendance following recent trend.
- 5% activity decline – *improvement towards Fully Engaged* - no alternative provision for minor injuries, slight decline in attendance due to more appropriate use of primary care.
- 10% activity decline – *Fully Engaged* - no alternative provision for minor injuries, decline in attendance due to more appropriate use of other sectors, combined with better self-management of long-term conditions and improved health-related behaviour.
- 25% activity decline – *somewhat Closer to Home* some alternative provision for minor injuries, assuming up to 20% of attendances are dealt with elsewhere, coupled with slight decline in attendance due to Fully Engaged effects.
- 50% activity decline – *Closer to Home* – majority of the estimated 50% of attendances that are for minor injuries are dealt with elsewhere, combined with some effects of a Fully Engaged population.

Table 7.2 clearly shows the marked effect activity changes would have on the demand for A&E. When coupled with population growth, considerable activity reduction is required before it leads to an overall reduction in attendances. In Cambridgeshire and Peterborough as a whole, an activity reduction of well over 10% is required to maintain current attendances at 2003 levels. In Cambridge City and South Cambridgeshire, the reduction required is closer to 25%.

Under the best case *Closer to Home* scenario, which assumes a 50% reduction in activity, over the County as a whole this would equate to a 40% reduction in attendances. A more moderate reduction of around 25% would lead to a 10% reduction in attendances. For attendances to remain at current levels, a reduction of around 15% would be required, which would not seem feasible without some alternative provision for minor injuries.

Table 7.3 sets out the number of attendances that would need to be catered for in an alternative setting under the *Closer to Home* scenario. This gives an indication of the potential demand for minor injury units. Under the most ambitious case, where around half of A&E attendances are treated in a minor injury unit, by 2021 81,000 attendances would need to be planned for. If only 25% of attendances were transferred to a minor injury unit, this figure would be halved to 40,500.

Table 7.2: Projected A&E attendances by PCT

| PCT | Activity change | Current Activity | Projected Activity | | | | % Change |
|-------------------------------|-----------------|------------------|--------------------|---------|---------|---------|----------|
| | | 2003 | 2006 | 2011 | 2016 | 2021 | |
| Cambridge City | +10% | 23,347 | 23,740 | 26,000 | 30,190 | 33,880 | 45.1% |
| | +5% | 23,347 | 23,740 | 25,580 | 29,250 | 32,340 | 38.5% |
| | -5% | 23,347 | 23,740 | 24,740 | 27,360 | 29,260 | 25.3% |
| | -10% | 23,347 | 23,740 | 24,320 | 26,420 | 27,720 | 18.7% |
| | -25% | 23,347 | 23,740 | 23,060 | 23,590 | 23,100 | -1.0% |
| | -50% | 23,347 | 23,740 | 20,970 | 18,870 | 15,400 | -34.0% |
| East Cambridgeshire & Fenland | +10% | 23,574 | 24,690 | 26,870 | 29,000 | 31,290 | 32.7% |
| | +5% | 23,574 | 24,690 | 26,440 | 28,090 | 29,870 | 26.7% |
| | -5% | 23,574 | 24,690 | 25,570 | 26,280 | 27,020 | 14.6% |
| | -10% | 23,574 | 24,690 | 25,140 | 25,370 | 25,600 | 8.6% |
| | -25% | 23,574 | 24,690 | 23,840 | 22,660 | 21,330 | -9.5% |
| | -50% | 23,574 | 24,690 | 21,670 | 18,120 | 14,220 | -39.7% |
| Huntingdonshire | +10% | 30,453 | 30,770 | 32,740 | 34,730 | 36,600 | 20.2% |
| | +5% | 30,453 | 30,770 | 32,210 | 33,640 | 34,930 | 14.7% |
| | -5% | 30,453 | 30,770 | 31,160 | 31,470 | 31,610 | 3.8% |
| | -10% | 30,453 | 30,770 | 30,630 | 30,390 | 29,940 | -1.7% |
| | -25% | 30,453 | 30,770 | 29,050 | 27,130 | 24,950 | -18.1% |
| | -50% | 30,453 | 30,770 | 26,400 | 21,700 | 16,630 | -45.4% |
| South Cambridgeshire | +10% | 15,417 | 15,680 | 17,810 | 20,090 | 22,610 | 46.7% |
| | +5% | 15,417 | 15,680 | 17,520 | 19,470 | 21,580 | 40.0% |
| | -5% | 15,417 | 15,680 | 16,950 | 18,210 | 19,530 | 26.7% |
| | -10% | 15,417 | 15,680 | 16,660 | 17,580 | 18,500 | 20.0% |
| | -25% | 15,417 | 15,680 | 15,800 | 15,700 | 15,420 | 0.0% |
| | -50% | 15,417 | 15,680 | 14,360 | 12,560 | 10,280 | -33.3% |
| GPPCP | +10% | 41,985 | 44,280 | 47,140 | 48,970 | 53,600 | 27.7% |
| | +5% | 41,985 | 44,280 | 46,380 | 47,440 | 51,160 | 21.9% |
| | -5% | 41,985 | 44,280 | 44,860 | 44,380 | 46,290 | 10.3% |
| | -10% | 41,985 | 44,280 | 44,100 | 42,850 | 43,850 | 4.4% |
| | -25% | 41,985 | 44,280 | 41,820 | 38,260 | 36,540 | -13.0% |
| | -50% | 41,985 | 44,280 | 38,020 | 30,610 | 24,360 | -42.0% |
| Cambridgeshire & Peterborough | +10% | 134,776 | 139,160 | 150,560 | 162,980 | 177,980 | 32.1% |
| | +5% | 134,776 | 139,160 | 148,130 | 157,890 | 169,880 | 26.0% |
| | -5% | 134,776 | 139,160 | 143,280 | 147,700 | 153,710 | 14.0% |
| | -10% | 134,776 | 139,160 | 140,850 | 142,610 | 145,610 | 8.0% |
| | -25% | 134,776 | 139,160 | 133,570 | 127,340 | 121,340 | -10.0% |
| | -50% | 134,776 | 139,160 | 121,420 | 101,860 | 80,890 | -40.0% |

Table 7.3: A&E activity to be provided elsewhere under a *Closer to Home* scenario

| PCT | Change | 2011 | 2016 | 2021 |
|-------------------------------|--------|--------|--------|--------|
| Cambridge City | -25% | 2,100 | 4,720 | 7,700 |
| | -50% | 4,190 | 9,430 | 15,400 |
| East Cambridgeshire & Fenland | -25% | 2,170 | 4,530 | 7,110 |
| | -50% | 4,330 | 9,060 | 14,220 |
| Huntingdonshire | -25% | 2,640 | 5,430 | 8,320 |
| | -50% | 5,280 | 10,850 | 16,630 |
| South Cambridgeshire | -25% | 1,440 | 3,140 | 5,140 |
| | -50% | 2,870 | 6,280 | 10,280 |
| GPPCP | -25% | 3,800 | 7,650 | 12,180 |
| | -50% | 7,600 | 15,300 | 24,360 |
| Cambridgeshire & Peterborough | -25% | 12,150 | 25,470 | 40,450 |
| | -50% | 24,270 | 50,920 | 80,890 |

7.2 Ambulance service activity

Table 7.4 below shows projected 999 calls resulting in an ambulance response, by PCT. The activity rates on which these are based are given in Appendix 5. It should be noted that the age structure of ambulance users has been derived from data from the London Ambulance Trust²⁴ and is not based on local data. The highest proportional activity increase is associated with South Cambridgeshire PCT. The lowest increase is projected for Huntingdonshire, although at 17% this is still considerably higher than the 8% overall population growth forecast for the PCT.

Overall, an additional 11,700 responses are projected annually by 2021. This is an increase of around 25%.

Table 7.4: Projected emergency calls resulting in a response to the scene, by PCT

| PCT | Current Activity | Projected Activity | | | | % Change |
|-------------------------------|------------------|--------------------|--------|--------|--------|----------|
| | 2003 | 2006 | 2011 | 2016 | 2021 | |
| Cambridge City | 8,320 | 8,400 | 8,820 | 9,820 | 10,550 | 26.8% |
| East Cambridgeshire & Fenland | 9,561 | 10,040 | 10,680 | 11,290 | 11,930 | 24.8% |
| Huntingdonshire | 8,359 | 8,490 | 8,900 | 9,330 | 9,740 | 16.5% |
| South Cambridgeshire | 5,866 | 5,980 | 6,600 | 7,270 | 8,010 | 36.5% |
| GPPCP | 14,638 | 15,610 | 16,440 | 16,880 | 18,190 | 24.3% |
| Cambridgeshire & Peterborough | 46,744 | 48,520 | 51,440 | 54,590 | 58,420 | 25.0% |

²⁴ Peacock P J *et al.* Changes in the emergency workload of the London Ambulance Service between 1989 and 1999. *Emergency Medical Journal* 2005; **22**:56-59

Not all ambulance responses result in a patient journey, as a proportion are treated at home. Currently, in Cambridgeshire and Peterborough, around 70% of ambulance responses result in the patient being transported elsewhere (in the majority of cases to hospital). Table 7.5 shows the projected number of patient journeys made by residents within each PCT.

Table 7.5: Projected patient journeys by PCT

| PCT | Current Activity | Projected Activity | | | | % Change |
|-------------------------------|------------------|--------------------|--------|--------|--------|----------|
| | 2003 | 2006 | 2011 | 2016 | 2021 | |
| Cambridge City | 5,306 | 5,360 | 5,620 | 6,260 | 6,730 | 26.8% |
| East Cambridgeshire & Fenland | 6,192 | 6,500 | 6,920 | 7,310 | 7,720 | 24.7% |
| Huntingdonshire | 6,287 | 6,390 | 6,690 | 7,010 | 7,330 | 16.6% |
| South Cambridgeshire | 4,147 | 4,220 | 4,670 | 5,140 | 5,660 | 36.5% |
| GPPCP | 10,121 | 10,790 | 11,370 | 11,670 | 12,580 | 24.3% |
| Cambridgeshire & Peterborough | 32,053 | 33,260 | 35,270 | 37,390 | 40,020 | 24.9% |

The ambulance service is an increasingly important dimension of the NHS. Crucially, the ambulance service is a key way in which care can be taken out to the patient, who may then be treated in the community. Rather than simply a transportation service, paramedics and Emergency Service Practitioners provide diagnoses and treatment, as well as make decisions about the best location for care. The DoH report *Taking Healthcare to the Patient*²⁵ sees the ambulance service as having a major role in moving towards care closer to home. It is estimated that around one third of ambulance responses are to patients who would most appropriately be treated at home or in a primary care emergency setting.

There are two main respects in which ambulance activity may change in the future. Firstly, the number of responses to 999 calls may increase or decrease. A *Fully Engaged* population will be better educated about appropriate use of emergency services, potentially resulting in fewer calls for which an ambulance response is not strictly required. An estimated 10% of ambulance callouts are to older people who have fallen in their homes²⁵. Falls reduction initiatives and a more integrated and responsive approach to care for older people should both reduce the numbers of falls suffered and also the proportion requiring an emergency response. At the same time, increased self-care and long-term conditions management in a home and primary care setting, along with more older people remaining in their own homes longer, could have the effect of increasing demand for emergency services. For example, people may be more likely to be at home when their condition becomes critical, when in the past they might already have been admitted to hospital.

The second way in which ambulance activity may change is the proportion of responses that result in a patient being transported to A&E. In the future, ambulance staff will treat more patients in their home. Other patients may be taken to minor injury units or alternative emergency care in a community setting. Ambulance staff will be important 'gatekeepers' controlling the reduction in A&E attendances.

²⁵ Department of Health. *Taking Healthcare to the Patient – transforming NHS ambulance services*, DoH, 2005

Taken together, it is unlikely that the future will see very different rates of ambulance usage. The effects of a *Fully Engaged* population will likely serve to reduce demand for emergency services slightly, while the effects of *Closer to Home* delivery are more likely to see a slight increase. Tables 7.6 and 7.7 show possible effects that small changes could have on ambulance activity and patient journeys. The following variants are tested:

- 10% activity rise associated with increased role for ambulances under a *Closer to Home* scenario.
- 10% activity decline associated with a *Fully Engaged* population, effective prevention of falls and better management of long-term conditions, along with more appropriate use of emergency services.
- 10% reduction in the proportion of responses resulting in a patient journey, reflecting an increase in diagnosis and treatment in the home.
- 20% reduction in the proportion of responses resulting in a patient journey, reflecting enhanced increase in home diagnosis and treatment.

Table 7.6: Projected ambulance responses by PCT, assuming different levels of activity change

| PCT | Activity change | Current Activity | Projected Activity | | | | % Change |
|-------------------------------|-----------------|------------------|--------------------|--------|--------|--------|----------|
| | | 2003 | 2006 | 2011 | 2016 | 2021 | |
| Cambridge City | +10% | 8,320 | 8,400 | 9,110 | 10,470 | 11,600 | 39.4% |
| | -10% | 8,320 | 8,400 | 8,530 | 9,160 | 9,490 | 14.1% |
| East Cambridgeshire & Fenland | +10% | 9,561 | 10,040 | 11,040 | 12,040 | 13,120 | 37.2% |
| | -10% | 9,561 | 10,040 | 10,330 | 10,540 | 10,730 | 12.3% |
| Huntingdonshire | +10% | 8,359 | 8,490 | 9,200 | 9,950 | 10,720 | 28.2% |
| | -10% | 8,359 | 8,490 | 8,600 | 8,700 | 8,770 | 4.9% |
| South Cambridgeshire | +10% | 5,866 | 5,980 | 6,820 | 7,760 | 8,810 | 50.1% |
| | -10% | 5,866 | 5,980 | 6,380 | 6,790 | 7,200 | 22.8% |
| GPPCP | +10% | 14,638 | 15,610 | 16,990 | 18,010 | 20,010 | 36.7% |
| | -10% | 14,638 | 15,610 | 15,890 | 15,760 | 16,370 | 11.8% |
| Cambridgeshire & Peterborough | +10% | 46,744 | 48,520 | 53,160 | 58,230 | 64,260 | 37.5% |
| | -10% | 46,744 | 48,520 | 49,730 | 50,950 | 52,560 | 12.4% |

Allowing for a 10% rise in activity, potentially associated with a *Closer to Home* scenario, the number of ambulance responses for Cambridgeshire and Peterborough is projected to rise by 38%, compared to the 25% increase due to population increase alone. A 10% activity decline, more in line with a *Fully Engaged* population, would result in a 12% increase in responses.

Tables 7.7a, b and c show the effect of treatment at home on patient journeys. A 10% and 20% decline in the proportion of calls resulting in a journey is tested, assuming (a) no activity change, (b) 10% rise in activity and (c) 10% decline in activity.

Table 7.7a: Projected patient journeys assuming no activity change and variant proportions resulting in a journey

| PCT | Change | Current Activity | Projected Activity | | | | % Change |
|-------------------------------|--------|------------------|--------------------|--------|--------|--------|----------|
| | | 2003 | 2006 | 2011 | 2016 | 2021 | |
| Cambridge City | -10% | 5,306 | 5,360 | 5,440 | 5,840 | 6,050 | 14.1% |
| | -20% | 5,306 | 5,360 | 5,250 | 5,430 | 5,380 | 1.4% |
| East Cambridgeshire & Fenland | -10% | 6,192 | 6,500 | 6,690 | 6,820 | 6,950 | 12.3% |
| | -20% | 6,192 | 6,500 | 6,460 | 6,340 | 6,180 | -0.2% |
| Huntingdonshire | -10% | 6,287 | 6,390 | 6,470 | 6,550 | 6,600 | 4.9% |
| | -20% | 6,287 | 6,390 | 6,250 | 6,080 | 5,860 | -6.8% |
| South Cambridgeshire | -10% | 4,147 | 4,220 | 4,510 | 4,800 | 5,090 | 22.8% |
| | -20% | 4,147 | 4,220 | 4,360 | 4,460 | 4,530 | 9.2% |
| GPPCP | -10% | 10,121 | 10,790 | 10,990 | 10,890 | 11,320 | 11.8% |
| | -20% | 10,121 | 10,790 | 10,610 | 10,120 | 10,060 | -0.6% |
| Cambridgeshire & Peterborough | -10% | 32,053 | 33,260 | 34,100 | 34,900 | 36,010 | 12.3% |
| | -20% | 32,053 | 33,260 | 32,930 | 32,430 | 32,010 | -0.1% |

With no activity change, a 20% shift towards treating patients at home instead of taking them to hospital would result in the number of patient journeys remaining relatively constant.

Table 7.7b: Projected patient journeys assuming 10% activity increase and variant proportions resulting in a journey

| PCT | Activity change | Current Activity | Projected Activity | | | | % Change |
|-------------------------------|-----------------|------------------|--------------------|--------|--------|--------|----------|
| | | 2003 | 2006 | 2011 | 2016 | 2021 | |
| Cambridge City | -10% | 5,306 | 5,360 | 5,620 | 6,230 | 6,660 | 25.5% |
| | -20% | 5,306 | 5,360 | 5,420 | 5,790 | 5,920 | 11.6% |
| East Cambridgeshire & Fenland | -10% | 6,192 | 6,500 | 6,910 | 7,280 | 7,650 | 23.5% |
| | -20% | 6,192 | 6,500 | 6,670 | 6,760 | 6,800 | 9.8% |
| Huntingdonshire | -10% | 6,287 | 6,390 | 6,690 | 6,980 | 7,250 | 15.4% |
| | -20% | 6,287 | 6,390 | 6,460 | 6,480 | 6,450 | 2.6% |
| South Cambridgeshire | -10% | 4,147 | 4,220 | 4,660 | 5,120 | 5,600 | 35.1% |
| | -20% | 4,147 | 4,220 | 4,500 | 4,750 | 4,980 | 20.1% |
| GPPCP | -10% | 10,121 | 10,790 | 11,360 | 11,620 | 12,450 | 23.0% |
| | -20% | 10,121 | 10,790 | 10,960 | 10,790 | 11,070 | 9.4% |
| Cambridgeshire & Peterborough | -10% | 32,053 | 33,260 | 35,240 | 37,230 | 39,610 | 23.6% |
| | -20% | 32,053 | 33,260 | 34,010 | 34,570 | 35,220 | 9.9% |

With a 10% activity increase, a 20% shift towards treating patients at home instead of taking them to hospital would result in the number of patient journeys rising by around 10%. With only a 10% shift towards home treatment, the number of journeys would rise by 24%.

Table 7.7c: Projected patient journeys assuming 10% activity decline and variant proportions resulting in a journey

| PCT | Activity change | Current Activity | Projected Activity | | | | % Change |
|-------------------------------|-----------------|------------------|--------------------|--------|--------|--------|----------|
| | | 2003 | 2006 | 2011 | 2016 | 2021 | |
| Cambridge City | -10% | 5,306 | 5,360 | 5,260 | 5,450 | 5,450 | 2.7% |
| | -20% | 5,306 | 5,360 | 5,070 | 5,060 | 4,840 | -8.7% |
| East Cambridgeshire & Fenland | -10% | 6,192 | 6,500 | 6,460 | 6,370 | 6,260 | 1.0% |
| | -20% | 6,192 | 6,500 | 6,240 | 5,910 | 5,560 | -10.2% |
| Huntingdonshire | -10% | 6,287 | 6,390 | 6,250 | 6,110 | 5,940 | -5.6% |
| | -20% | 6,287 | 6,390 | 6,040 | 5,670 | 5,280 | -16.1% |
| South Cambridgeshire | -10% | 4,147 | 4,220 | 4,360 | 4,480 | 4,580 | 10.5% |
| | -20% | 4,147 | 4,220 | 4,210 | 4,160 | 4,070 | -1.7% |
| GPPCP | -10% | 10,121 | 10,790 | 10,620 | 10,170 | 10,190 | 0.7% |
| | -20% | 10,121 | 10,790 | 10,260 | 9,440 | 9,060 | -10.5% |
| Cambridgeshire & Peterborough | -10% | 32,053 | 33,260 | 32,950 | 32,580 | 32,420 | 1.1% |
| | -20% | 32,053 | 33,260 | 31,820 | 30,240 | 28,810 | -10.1% |

Assuming a 10% activity decline, only a 10% shift towards home treatment is required for the number of journeys to remain relatively stable over the whole county. A 20% shift would result in the number of patient journeys reducing by 10%.

8 Future healthcare capacity: Primary and community care

Please note that the workforce data presented in this section have been revised since the first version of this report was published, correcting an error in the baseline data.

8.1 Primary care activity

Currently, while GP practice recording systems are improving, the bulk of the data collected relates to financial systems, rather than to public health. Comprehensive and readily available local information regarding activity carried out in a primary care setting is limited. Further liaison with PCTs and individual practices would allow a wider range of data to be made available, but this has not been feasible within the timescales of this initial study.

In the absence of local data, a source of information about patterns of GP usage is the 1991-1992 National Survey of Morbidity in General Practice⁹, carried out in collaboration between the then Office of Population Censuses and Surveys (now the Office for National Statistics), the Royal College of General Practitioners and the Department of Health. Along with a wealth of detailed information, the survey provides data about the rate at which people of different ages visit their GP or a practice nurse. This allows us to estimate the number of GP consultations likely to be made by local populations, and to project the future number of consultations.

It is important to emphasise that the activity estimates presented here describe the activity that would be expected from a population of a given age structure if residents, on average, consult their doctor at the same rate as the national average for persons of their age. The estimates do not take other factors known to affect GP consultation rates, such as socio-economic status, into consideration. Further, all the results below reflect the consultations arising from the resident population of each PCT, which is different from that actually registered with the PCT's practices. In practice, projecting the registered population is extremely complex and unreliable, particularly as factors affecting where people register change rapidly. In growth areas much will depend on whether the new population must register with existing practices – which may or may already be at capacity – or whether the growth is of sufficient size to warrant the provision of new services specifically for that community. In addition, the characteristics of the new population are relevant. Young commuters may be initially slower to register and more likely to register nearer their place of work when they do, while families may register faster and be more likely to wish to register with their nearest practice.

Table 8.1 shows the estimated and projected number of primary care consultations made by the resident population of each PCT. The greatest increase in primary care activity is likely to be generated by growth in South Cambridgeshire and Cambridge City's resident populations (an increase in consultations of 35% and 29% respectively). Together these PCTs are likely to see an increase of around 273,600 primary care contacts per year.

Table 8.1: Estimated primary care consultations generated by the resident population of each PCT

| PCT | Current Activity | Projected Activity | | | | % Change |
|-------------------------------|------------------|--------------------|-----------|-----------|-----------|----------|
| | 2003 | 2006 | 2011 | 2016 | 2021 | |
| Cambridge City | 357,750 | 362,270 | 381,870 | 427,310 | 460,530 | 29% |
| East Cambridgeshire & Fenland | 458,730 | 480,180 | 509,510 | 536,590 | 561,430 | 22% |
| Huntingdonshire | 477,710 | 483,240 | 503,770 | 524,790 | 540,000 | 13% |
| South Cambridgeshire | 438,520 | 445,740 | 493,550 | 543,630 | 592,410 | 35% |
| GPPCP | 660,290 | 701,090 | 733,790 | 752,200 | 804,030 | 22% |
| Cambridgeshire & Peterborough | 2,393,000 | 2,472,520 | 2,622,490 | 2,784,520 | 2,958,400 | 24% |

Tables 8.2 and 8.3 below show the implications of the projected changes in consultation levels for each PCT's primary care workforce. Two elements of the workforce are considered: GPs (in Table 8.2) and practice nurses (in Table 8.3). It is assumed that between 6% and 14% (depending on the age of the patient) of consultations are carried out by a practice nurse. The baseline for these projections is the 2004 whole-time equivalent (WTE) workforce employed. The current workforce caters for the PCT's registered population, so these calculations assume that the proportion of the resident population that is registered with that PCT remains constant over time.

Table 8.2: Projected GP whole time equivalents by PCT

| PCT | Current WTE | Projected WTE | | | | % Change |
|-------------------------------|-------------|---------------|------|------|------|----------|
| | 2003 | 2006 | 2011 | 2016 | 2021 | |
| Cambridge City | 84 | 85 | 90 | 101 | 109 | 29% |
| East Cambridgeshire & Fenland | 83 | 87 | 93 | 97 | 102 | 22% |
| Huntingdonshire | 91 | 92 | 96 | 100 | 102 | 13% |
| South Cambridgeshire | 61 | 62 | 69 | 76 | 82 | 35% |
| GPPCP | 123 | 130 | 136 | 140 | 149 | 21% |
| Cambridgeshire & Peterborough | 442 | 457 | 483 | 513 | 544 | 23% |

Table 8.3: Projected Practice Nurse whole time equivalents by PCT

| PCT | Current WTE | Projected WTE | | | | % Change |
|-------------------------------|-------------|---------------|------|------|------|----------|
| | 2003 | 2006 | 2011 | 2016 | 2021 | |
| Cambridge City | 57 | 57 | 60 | 67 | 71 | 26% |
| East Cambridgeshire & Fenland | 50 | 52 | 56 | 59 | 62 | 24% |
| Huntingdonshire | 54 | 55 | 58 | 62 | 64 | 17% |
| South Cambridgeshire | 33 | 34 | 37 | 41 | 45 | 37% |
| GPPCP | 61 | 65 | 68 | 71 | 76 | 25% |
| Cambridgeshire & Peterborough | 255 | 263 | 280 | 300 | 318 | 25% |

The total requirement for GPs is projected to rise by 23%, with an extra 102 needed by 2021. The greatest increase is forecast to be in South Cambridgeshire, at 35%, followed by Cambridge City at 29%. Growth in South Cambridgeshire would suggest an increase of 21 GPs, and this would be higher if a higher proportion of new residents registered with local practices. Much of the South Cambridgeshire growth is, however, on the fringe of Cambridge City, and people in these areas are likely to look to Cambridge City for their services.

Practice nurse requirements are forecast to rise by 25%, with an additional 63 nurses. The relative increase is slightly greater for nurses because a higher proportion of consultations for older patients are assumed to be carried out by a nurse. The PCTs with more marked relative increase in their older population show a higher increase in practice nurses than GPs.

Future visions of the NHS see an increasing proportion of patient care being carried out at a primary care level. Primary care will have a greater role in coordinating the care of people with complex needs, such as older people, or people with long-term conditions. Under the NBI *Closer to Home* scenario, activity will be diverted away from acute care towards intermediate care and rehabilitation at home, with an increasing burden placed on primary care teams. Primary care teams are likely to become more diverse, with practice nurses playing a greater role, particularly in supporting the management of long-term conditions.

As well as structural services to the NHS placing greater emphasis on the role of primary care, individual behaviour will also have an effect. The Wanless Report sees a *Fully Engaged* population visiting their GP, on average, one extra time per year, as people become more involved in health seeking behaviour. A small proportion of consultations, in the region of 2%, may be replaced by visits to a pharmacist, and there would be a reduction in the number of inappropriate consultations.

Tables 8.4 and 8.5 below set out the effects of changing primary care delivery on numbers of consultations and workforce requirements. The following variants are tested:

- 0.8% activity increase per year, in line with the NBI *Closer to Home* scenario. Assumes greater burden placed on primary care due to shift in provision away from acute care.
- 1.3% activity increase per year, equating to approximately one additional GP visit per year by 2021, in line with changes to health seeking behaviour as described for a *Fully Engaged* population by Wanless.
- 2.0% activity increase per year, representing an extreme activity change resulting from the combined effects of structural changes to the NHS (NBI) as well as increased health seeking behaviour (Wanless).

Table 8.4: Projected primary care visits with variant activity increase

| PCT | Activity change | Current Activity | Projected Activity | | | | % Change |
|-------------------------------|-----------------|------------------|--------------------|-----------|-----------|-----------|----------|
| | | 2003 | 2006 | 2011 | 2016 | 2021 | |
| Cambridge City | +0.8% | 357,749 | 371,030 | 407,000 | 473,950 | 531,550 | 48.6% |
| | +1.3% | 357,749 | 376,580 | 423,440 | 505,430 | 581,070 | 62.4% |
| | +2.0% | 357,749 | 384,440 | 447,420 | 552,770 | 657,750 | 83.9% |
| East Cambridgeshire & Fenland | +0.8% | 458,729 | 491,790 | 543,050 | 595,150 | 648,010 | 41.3% |
| | +1.3% | 458,729 | 499,150 | 564,980 | 634,700 | 708,380 | 54.4% |
| | +2.0% | 458,729 | 509,570 | 596,980 | 694,140 | 801,860 | 74.8% |
| Huntingdonshire | +0.8% | 477,714 | 494,930 | 536,930 | 582,070 | 623,280 | 30.5% |
| | +1.3% | 477,714 | 502,330 | 558,610 | 620,740 | 681,340 | 42.6% |
| | +2.0% | 477,714 | 512,810 | 590,240 | 678,880 | 771,250 | 61.4% |
| South Cambridgeshire | +0.8% | 438,519 | 456,520 | 526,040 | 602,970 | 683,780 | 55.9% |
| | +1.3% | 438,519 | 463,350 | 547,280 | 643,030 | 747,470 | 70.5% |
| | +2.0% | 438,519 | 473,020 | 578,270 | 703,250 | 846,110 | 92.9% |
| GPPCP | +0.8% | 660,290 | 718,050 | 782,080 | 834,290 | 928,030 | 40.5% |
| | +1.3% | 660,290 | 728,790 | 813,660 | 889,720 | 1,014,480 | 53.6% |
| | +2.0% | 660,290 | 744,000 | 859,750 | 973,040 | 1,148,360 | 73.9% |
| Cambridgeshire & Peterborough | +0.8% | 2,393,001 | 2,532,320 | 2,795,100 | 3,088,430 | 3,414,650 | 42.7% |
| | +1.3% | 2,393,001 | 2,570,200 | 2,907,970 | 3,293,620 | 3,732,740 | 56.0% |
| | +2.0% | 2,393,001 | 2,623,840 | 3,072,660 | 3,602,080 | 4,225,330 | 76.6% |

Table 8.4 shows that small annual changes to activity rates for primary care, combined with population increase, project a dramatic rise in visits to primary care. The scale of increase suggested in the NBI would lead to a 43% activity rise across the county, compared with a 56% increase in line with the activity increase suggested in Wanless. This level of growth roughly corresponds to one extra GP visit per year per person. These effects combined (an annual increase of 2%) could potentially lead to an increase of 77%. The effects vary by PCT, with a 2% annual increase almost doubling primary care activity in South Cambridgeshire PCT, but raising it by just two thirds in Huntingdonshire.

Tables 8.5a and 8.5b illustrate this growth in terms of the primary care workforce. Table 8.5a assumes no change in the proportion of visits handled by practice nurses. Table 8.5b assumes that one in five extra visits may be to a nurse instead of the GP.

Across Cambridgeshire and Peterborough, up to an additional 1.8 million GP visits are projected per year by 2021. Moving 30% of hospital outpatient attendances into a community setting (as discussed in section 5.2) could lead to up to 204,500 attendances being re-provided through GP practices or community facilities. In the context of an additional 1.8 million GP visits, it is clear that health-seeking behaviour has the potential to have a more dramatic impact on GP activity than a moderate shift in the location of outpatient appointments.

Table 8.5a: GP WTE (with practice nurse WTE in brackets) under variant activities

| PCT | Activity change | Current | Projected Activity | | | | | % Change |
|-------------------------------|-----------------|-----------|--------------------|-----------|-----------|-----------|---------------|----------|
| | | 2003 | 2006 | 2011 | 2016 | 2021 | | |
| Cambridge City | +0.8% | 84 (57) | 87 (58) | 96 (64) | 112 (74) | 125 (82) | 49.0% (45.0%) | |
| | +1.3% | 84 (57) | 89 (59) | 100 (66) | 119 (79) | 137 (90) | 62.8% (58.5%) | |
| | +2.0% | 84 (57) | 90 (61) | 105 (70) | 130 (86) | 155 (102) | 84.3% (79.4%) | |
| East Cambridgeshire & Fenland | +0.8% | 83 (50) | 89 (54) | 99 (60) | 108 (66) | 118 (72) | 41.0% (43.3%) | |
| | +1.3% | 83 (50) | 91 (54) | 103 (62) | 115 (70) | 129 (78) | 54.2% (56.6%) | |
| | +2.0% | 83 (50) | 93 (56) | 108 (66) | 126 (77) | 145 (89) | 74.5% (77.3%) | |
| Huntingdonshire | +0.8% | 91 (54) | 94 (57) | 102 (62) | 110 (68) | 118 (74) | 29.9% (35.5%) | |
| | +1.3% | 91 (54) | 96 (57) | 106 (65) | 118 (73) | 129 (80) | 42.0% (48.1%) | |
| | +2.0% | 91 (54) | 98 (59) | 112 (68) | 129 (80) | 146 (91) | 60.8% (67.7%) | |
| South Cambridgeshire | +0.8% | 61 (33) | 64 (34) | 73 (40) | 84 (46) | 95 (52) | 55.7% (58.0%) | |
| | +1.3% | 61 (33) | 64 (35) | 76 (41) | 89 (49) | 104 (57) | 70.2% (72.7%) | |
| | +2.0% | 61 (33) | 66 (36) | 80 (44) | 98 (54) | 118 (65) | 92.7% (95.5%) | |
| GPPCP | +0.8% | 123 (61) | 134 (66) | 145 (73) | 155 (79) | 172 (88) | 40.2% (44.0%) | |
| | +1.3% | 123 (61) | 136 (67) | 151 (76) | 165 (84) | 188 (96) | 53.2% (57.4%) | |
| | +2.0% | 123 (61) | 138 (69) | 160 (80) | 181 (92) | 213 (108) | 73.5% (78.2%) | |
| Cambridgeshire & Peterborough | +0.8% | 442 (255) | 468 (269) | 515 (299) | 569 (333) | 628 (368) | 42.1% (44.3%) | |
| | +1.3% | 442 (255) | 476 (272) | 536 (310) | 606 (355) | 687 (401) | 55.4% (57.3%) | |
| | +2.0% | 442 (255) | 485 (281) | 565 (328) | 664 (389) | 777 (455) | 75.8% (78.4%) | |

Table 8.5b: GP WTE (with practice nurse WTE in brackets) under variant activities assuming 20% shift towards nursing staff

| PCT | Activity change | Current | Projected Activity | | | | | % Change |
|-------------------------------|-----------------|-----------|--------------------|-----------|-----------|-----------|----------------|----------|
| | | 2003 | 2006 | 2011 | 2016 | 2021 | | |
| Cambridge City | +0.8% | 84 (57) | 85 (70) | 94 (77) | 109 (89) | 123 (98) | 45.9% (73.9%) | |
| | +1.3% | 84 (57) | 87 (71) | 98 (80) | 117 (94) | 134 (108) | 59.5% (90.1%) | |
| | +2.0% | 84 (57) | 89 (73) | 103 (84) | 128 (103) | 152 (122) | 80.6% (115.2%) | |
| East Cambridgeshire & Fenland | +0.8% | 83 (50) | 87 (64) | 96 (72) | 106 (79) | 115 (86) | 37.8% (71.9%) | |
| | +1.3% | 83 (50) | 89 (65) | 100 (74) | 113 (84) | 126 (94) | 50.7% (87.9%) | |
| | +2.0% | 83 (50) | 91 (67) | 106 (79) | 123 (92) | 142 (106) | 70.6% (112.7%) | |
| Huntingdonshire | +0.8% | 91 (54) | 92 (68) | 100 (75) | 108 (82) | 116 (88) | 27.0% (62.6%) | |
| | +1.3% | 91 (54) | 94 (69) | 104 (78) | 115 (88) | 126 (97) | 38.8% (77.8%) | |
| | +2.0% | 91 (54) | 95 (70) | 110 (82) | 126 (96) | 143 (109) | 57.1% (101.2%) | |
| South Cambridgeshire | +0.8% | 61 (33) | 62 (41) | 72 (48) | 82 (55) | 93 (63) | 52.2% (89.6%) | |
| | +1.3% | 61 (33) | 63 (42) | 74 (50) | 87 (59) | 102 (68) | 66.4% (107.2%) | |
| | +2.0% | 61 (33) | 64 (43) | 79 (53) | 96 (64) | 115 (77) | 88.4% (134.6%) | |
| GPPCP | +0.8% | 123 (61) | 131 (80) | 142 (87) | 151 (94) | 168 (105) | 37.0% (72.8%) | |
| | +1.3% | 123 (61) | 133 (81) | 148 (91) | 161 (100) | 184 (115) | 49.8% (88.9%) | |
| | +2.0% | 123 (61) | 135 (83) | 156 (96) | 177 (110) | 208 (130) | 69.6% (113.8%) | |
| Cambridgeshire & Peterborough | +0.8% | 442 (255) | 457 (323) | 504 (359) | 556 (399) | 615 (440) | 39.1% (72.5%) | |
| | +1.3% | 442 (255) | 466 (328) | 524 (373) | 593 (425) | 672 (482) | 52.0% (89.0%) | |
| | +2.0% | 442 (255) | 474 (336) | 554 (394) | 650 (465) | 760 (544) | 71.9% (113.3%) | |

8.2 District nursing

This section applies activity rates from East Cambridgeshire and Fenland PCT, where district nursing visits are well recorded, and applies these to the population of each PCT to illustrate the effect of population growth on community health services. Note that health visiting has not been modelled because there is currently no reliable measure of activity available.

Table 8.6: District nursing activity (patient contacts) projection for East Cambridgeshire & Fenland PCT

| PCT | Current Activity | Projected Activity | | | | % Change |
|-------------------------------|------------------|--------------------|--------|--------|---------|----------|
| | 2003 | 2006 | 2011 | 2016 | 2021 | |
| East Cambridgeshire & Fenland | 71,764 | 76,340 | 86,210 | 99,200 | 113,820 | 58.6% |

Table 8.7 sets out the estimated and projected district nursing activity, if all the other PCTs experienced the same age-specific rates of consultations as East Cambridgeshire and Fenland. In reality, given the variation between the PCTs, particularly in terms of their rurality, it is unlikely that district nursing activity would be so similar. In the absence of other data, however, it is more useful than applying national rates.

Table 8.7: Indicative district nursing activity (patient contacts), based on East Cambridgeshire & Fenland rates

| PCT | Current Activity | Projected Activity | | | | % Change |
|-------------------------------|------------------|--------------------|---------|---------|---------|----------|
| | 2003 | 2006 | 2011 | 2016 | 2021 | |
| Cambridge City | 48,548 | 48,940 | 49,610 | 52,610 | 53,420 | 10.0% |
| East Cambridgeshire & Fenland | 71,764 | 76,340 | 86,210 | 99,200 | 113,820 | 58.6% |
| Huntingdonshire | 60,970 | 65,020 | 74,070 | 85,940 | 98,410 | 61.4% |
| South Cambridgeshire | 64,220 | 70,180 | 81,860 | 96,540 | 113,420 | 76.6% |
| GPPCP | 87,994 | 100,470 | 114,640 | 127,000 | 146,820 | 66.9% |
| Cambridgeshire & Peterborough | 333,496 | 360,950 | 406,390 | 461,290 | 525,890 | 57.7% |

Across Cambridgeshire and Peterborough as a whole, district nurse activity is projected to rise by 58%. The highest proportional increase is projected for South Cambridgeshire, with an increase of 77%. It should be noted that, while the total population of Huntingdonshire is forecast to increase by only 8%, district nursing activity is projected to rise by 61%. This is because Huntingdonshire's population is ageing rapidly.

Table 8.8 illustrates the projected activity rise in terms of the number of district nurses employed by each PCT. The baseline data used is the 2003/2004 whole time equivalent district nurse workforce of each PCT. This method assumes that the number of contacts made per whole time equivalent district nurse remains constant over time.

Across the county an extra 67 WTE district nurses are projected to be required on the basis of population growth alone.

Table 8.8: Indicative district nursing workforce, based on East Cambridgeshire & Fenland activity rates

| PCT | Current WTE | Projected WTE | | | | % Change |
|-------------------------------|-------------|---------------|------|------|------|----------|
| | 2003 | 2006 | 2011 | 2016 | 2021 | |
| Cambridge City | 28 | 29 | 29 | 31 | 31 | 10% |
| East Cambridgeshire & Fenland | 21 | 22 | 25 | 29 | 33 | 59% |
| Huntingdonshire | 18 | 19 | 22 | 25 | 29 | 61% |
| South Cambridgeshire | 17 | 19 | 22 | 26 | 30 | 77% |
| GPPCP | 42 | 48 | 54 | 60 | 70 | 67% |
| Cambridgeshire & Peterborough | 126 | 136 | 152 | 171 | 193 | 53% |

A crucial part of the NBI *Closer to Home* scenario is an increase in intensive homecare to enable care in an institutional setting to decline and to assist earlier hospital discharge. Acute admissions will also be prevented through the provision of nursing and personal care. Contacts with a district nurse are seen to increase by around 1% per year above demographic pressures. Tables 8.9 and 8.10 show the implications of this activity increase on contacts and on the district nurse workforce.

Table 8.9: Indicative district nursing activity (patient contacts) given a 1% annual increase in activity

| PCT | Current Activity | Projected Activity | | | | % Change |
|-------------------------------|------------------|--------------------|---------|---------|---------|----------|
| | 2003 | 2006 | 2011 | 2016 | 2021 | |
| Cambridge City | 48,548 | 50,420 | 53,720 | 59,880 | 63,900 | 31.6% |
| East Cambridgeshire & Fenland | 71,764 | 78,660 | 93,350 | 112,890 | 136,150 | 89.7% |
| Huntingdonshire | 60,970 | 66,990 | 80,200 | 97,800 | 117,720 | 93.1% |
| South Cambridgeshire | 64,220 | 72,310 | 88,640 | 109,870 | 135,670 | 111.3% |
| GPPCP | 87,994 | 103,520 | 124,140 | 144,540 | 175,620 | 99.6% |
| Cambridgeshire & Peterborough | 333,496 | 371,900 | 440,050 | 524,980 | 629,060 | 88.6% |

Table 8.10: Indicative district nursing workforce, given 1% annual activity increase

| PCT | Current WTE | Projected WTE | | | | % Change |
|-------------------------------|-------------|---------------|------|------|------|----------|
| | 2003 | 2006 | 2011 | 2016 | 2021 | |
| Cambridge City | 28 | 29 | 31 | 35 | 37 | 32% |
| East Cambridgeshire & Fenland | 21 | 23 | 27 | 33 | 40 | 90% |
| Huntingdonshire | 18 | 19 | 23 | 28 | 34 | 93% |
| South Cambridgeshire | 17 | 19 | 24 | 29 | 36 | 111% |
| GPPCP | 42 | 49 | 59 | 69 | 83 | 100% |
| Cambridgeshire & Peterborough | 126 | 139 | 164 | 194 | 230 | 83% |

9 Social care

Note that this section has been revised since the first version of this report, incorporating adjusted baseline data correcting for double counting in the published indicators.

9.1 Population led projected change

Tables 9.1a and 9.1b show the projected demand for older people services²⁶ in Cambridgeshire County Council and Peterborough City Council, based on the population aged over 65. While this is useful, it is important to note that significant changes are being made to the way that these services are configured. Sections 9.3 and 9.4 attempt to quantify some effects of these changes. By 2021, in Cambridgeshire, there will be an additional 920 people requiring supported accommodation (residential, nursing or extra sheltered), another 2,010 people helped to live at home, and 360 households receiving intensive homecare. For Peterborough, an extra 340 will require supported accommodation, another 1,220 will be helped to live at home, and 130 additional households will require intensive homecare.

Table 9.1a: Projected older people's services, Cambridgeshire County

| Indicator | Current | Projected clients | | | | | % change |
|---|---------|-------------------|-------|-------|-------|-----|----------|
| | 2003 | 2006 | 2011 | 2016 | 2021 | | |
| Older people helped to live at home | 4,230 | 4,370 | 4,950 | 5,740 | 6,240 | 47% | |
| Households receiving intensive homecare | 776 | 800 | 910 | 1,050 | 1,140 | 47% | |
| Number of assessments of older service users | 5,511 | 5,700 | 6,440 | 7,480 | 8,120 | 47% | |
| Number of people aged 65+ supported in residential care | 1,121 | 1,160 | 1,310 | 1,520 | 1,650 | 47% | |
| Number of people aged 65+ supported in nursing care | 520 | 540 | 610 | 710 | 770 | 47% | |
| Number of people supported in extra care housing | 308 | 320 | 360 | 420 | 450 | 47% | |

Table 9.1b: Projected older people's services, Peterborough Unitary Authority

| Indicator | Current | Projected clients | | | | | % change |
|---|---------|-------------------|-------|-------|-------|-----|----------|
| | 2003 | 2006 | 2011 | 2016 | 2021 | | |
| Older people helped to live at home | 2,020 | 2,230 | 2,530 | 2,860 | 3,240 | 61% | |
| Households receiving intensive homecare | 209 | 230 | 260 | 300 | 340 | 61% | |
| Number of assessments of older service users | 1,631 | 1,800 | 2,040 | 2,310 | 2,620 | 61% | |
| Number of people aged 65+ supported in residential care | 362 | 400 | 450 | 510 | 580 | 61% | |
| Number of people aged 65+ supported in nursing care | 155 | 170 | 190 | 220 | 250 | 61% | |
| Number of people supported in extra care housing | 52 | 60 | 70 | 70 | 80 | 61% | |

9.2 The effect of changing frailty prevalence

While the number of older people requiring social services help is related to the size of the older population, it more closely relates to the number of older people who are mentally or physically frail. The following table presents the same data as tables 9.1a and 9.1b above,

²⁶ This section refers to older people who are supported by their local authority; there are many other people who pay for private support or who live in private supported accommodation. Requirements for these private services will also rise in line with demographic change.

but calculated on the basis of the change in the frail elderly population. Three variants are given:

- No change scenario – the proportion of the population of older people expected to experience frailty remains the same.
- Midpoint scenario – the effects of a 3.5% reduction in frailty is tested.
- *Fully Engaged* scenario – the Wanless Report states that healthy life expectancy for older people will rise in line with life expectancy. This scenario tests the effects of a 7% reduction in the proportion of the elderly population becoming frail.

Table 9.2: Projected older people’s services, Cambridgeshire County and Peterborough City Councils

| Indicator | % Frailty change | Cambridgeshire CC | | | Peterborough CC | | |
|---|------------------|-------------------|----------------|----------|-----------------|----------------|----------|
| | | Current 2003 | Projected 2021 | % change | Current 2003 | Projected 2021 | % change |
| Older people helped to live at home | 0% | 4,230 | 6,480 | 53% | 2,020 | 3,440 | 71% |
| | 3.5% | 4,230 | 6,250 | 48% | 2,020 | 3,320 | 65% |
| | 7.0% | 4,230 | 6,020 | 42% | 2,020 | 3,200 | 59% |
| Households receiving intensive homecare | 0% | 776 | 1,190 | 53% | 209 | 360 | 71% |
| | 3.5% | 776 | 1,150 | 48% | 209 | 340 | 65% |
| | 7.0% | 776 | 1,100 | 42% | 209 | 330 | 59% |
| Number of assessments of older service users | 0% | 5,511 | 8,440 | 53% | 1,631 | 2,780 | 71% |
| | 3.5% | 5,511 | 8,140 | 48% | 1,631 | 2,680 | 65% |
| | 7.0% | 5,511 | 7,850 | 42% | 1,631 | 2,590 | 59% |
| Number of people aged 65+ supported in residential care | 0% | 1,121 | 1,720 | 53% | 362 | 620 | 71% |
| | 3.5% | 1,121 | 1,660 | 48% | 362 | 600 | 65% |
| | 7.0% | 1,121 | 1,600 | 42% | 362 | 570 | 59% |
| Number of people aged 65+ supported in nursing care | 0% | 520 | 800 | 53% | 155 | 260 | 71% |
| | 3.5% | 520 | 770 | 48% | 155 | 260 | 65% |
| | 7.0% | 520 | 740 | 42% | 155 | 250 | 59% |
| Number of people supported in extra care housing | 0% | 308 | 470 | 53% | 52 | 90 | 71% |
| | 3.5% | 308 | 450 | 48% | 52 | 90 | 65% |
| | 7.0% | 308 | 440 | 42% | 52 | 80 | 59% |

Table 9.2 shows the effect that a small reduction in frailty could have on the numbers of older people requiring social services support. For example, in Cambridgeshire, a 7% reduction in frailty could reduce the number of additional people requiring supported housing by around 210. While the reductions are notable, they have little impact on the scale of additional requirement related to population growth and ageing. Therefore, even with a 7% frailty decline, demand for older people’s services will still show striking growth.

Note that the frail population is used for the rest of the modelling described in this section, rather than the total population, as this takes into consideration the additional demand created by a higher proportion of the over 65 population being composed of over 85 year olds.

9.3 Strategic changes to the care of older people - Cambridgeshire

Cambridgeshire County Council Adult Services Strategic Plan (2004-2007) sets out key changes to the way that services for older people are to be delivered. In particular, more people in the future will be helped to live in their own home, and extra care housing will expand to replace residential care as far as possible. Older people will spend less time in hospital, meaning that intermediate care facilities – such as nursing homes – will expand. The effects of these changes are tested below. Two scenarios are given:

- *Fully revised service model:* assumes 60% increase in the proportion of older people helped to live at home; 30% increase in those helped intensively to live a home; 350% increase in extra care provision; 90% reduction in residential care; 40% increase in nursing care. Under this scenario, extra care replaces the majority of residential care places (allowing for 10% to remain to care for those with more pronounced dementia who may not appropriately be cared for in an extra care environment), with home care playing an enhanced role.
- *Partially revised service model:* assumes 30% increase in the proportion of older people helped to live at home; 15% for those helped intensively; 200% increase in extra care provision; 45% reduction in residential care; 20% increase in nursing care. This version assumes that the service targets detailed by Cambridgeshire County Council are only partially realised by 2021.

Table 9.3a: Projected older people’s services, Cambridgeshire County Council

| Indicator | Service model change assumed | Current | Projected clients | | | | | % change |
|---|------------------------------|---------|-------------------|-------|-------|--------|------|----------|
| | | 2003 | 2006 | 2011 | 2016 | 2021 | | |
| Older people helped to live at home | Fully revised | 4,230 | 4,430 | 5,960 | 8,030 | 10,360 | 145% | |
| | Partially revised | 4,230 | 4,430 | 5,470 | 6,880 | 8,420 | 99% | |
| Households receiving intensive homecare | Fully revised | 776 | 810 | 1,000 | 1,260 | 1,540 | 99% | |
| | Partially revised | 776 | 810 | 960 | 1,160 | 1,370 | 76% | |
| Number of assessments of older service users | Fully revised | 5,511 | 5,780 | 7,550 | 9,960 | 12,650 | 130% | |
| | Partially revised | 5,511 | 5,780 | 7,010 | 8,710 | 10,550 | 91% | |
| Number of people aged 65+ supported in residential care | Fully revised | 1,121 | 1,180 | 920 | 610 | 170 | -85% | |
| | Partially revised | 1,121 | 1,180 | 1,120 | 1,060 | 940 | -16% | |
| Number of people aged 65+ supported in nursing care | Fully revised | 520 | 550 | 690 | 890 | 1,110 | 114% | |
| | Partially revised | 520 | 550 | 650 | 800 | 960 | 84% | |
| Number of people supported in extra care housing | Fully revised | 308 | 320 | 780 | 1,390 | 2,120 | 589% | |
| | Partially revised | 308 | 320 | 600 | 970 | 1,410 | 359% | |

Under a fully revised service model, with demographic growth taken into consideration, an additional 6,130 people will be helped to live at home by 2021, along with an extra 760 households receiving intensive homecare. The most dramatic changes will be to residential care and extra care. An additional 1,810 people will be accommodated in extra care housing, while the number of people in residential care could drop to around 170. Altogether, 3,400 people will be supported by the local authority to live in some form of supported accommodation, compared to 1,950 currently.

9.4 Strategic changes to the care of older people - Peterborough

Greater Peterborough Primary Care Partnership is in the process of producing an older persons' accommodation strategy for Peterborough, with a draft document due to go out to consultation in September 2005. The strategic direction for change is therefore less clear for Peterborough than is currently the case in Cambridgeshire. Major investment in extra care provision is planned, possibly as much as an additional 250 units by 2010. While this is expected to reduce requirements for residential care, extra care is not explicitly suggested to replace residential care.

The two scenarios below model similar scenarios to those for Cambridgeshire, with a slightly modified shift towards extra care. It should be emphasised that these are tentative scenarios; once the local strategy is complete a full assessment of its implications could be modelled. Under the fully revised model more rapid growth in extra care is assumed than for Cambridgeshire, meeting the 2010 target, along with only a 50% reduction in residential care by 2021. The partially revised model assumes a slower increase in extra care provision and only a 25% reduction in residential care. The scenarios are as follows:

- *Fully revised service model:* assumes 60% increase in the proportion of older people helped to live at home; 30% increase in those helped intensively to live a home; 365% increase in extra care provision by 2011 (rising in line with population change thereafter); 50% reduction in residential care; 40% increase in nursing care. Under this scenario, extra care replaces half of residential care places, with home care playing an enhanced role.
- *Partially revised service model:* assumes 30% increase in the proportion of older people helped to live at home; 15% for those helped intensively; 200% increase in extra care provision (by 2021); 25% reduction in residential care; 20% increase in nursing care.

Table 9.3b: Projected older people services, Peterborough City Council

| Indicator | Service model change assumed | Current | Projected | | | | % change |
|---|------------------------------|---------|-----------|-------|-------|-------|----------|
| | | 2003 | 2006 | 2011 | 2016 | 2021 | |
| Older people helped to live at home | Fully revised | 2,020 | 2,320 | 3,200 | 4,150 | 5,510 | 173% |
| | Partially revised | 2,020 | 2,320 | 2,930 | 3,550 | 4,480 | 122% |
| Households receiving intensive homecare | Fully revised | 209 | 240 | 300 | 370 | 460 | 122% |
| | Partially revised | 209 | 240 | 290 | 340 | 410 | 96% |
| Number of assessments of older service users | Fully revised | 1,631 | 1,870 | 2,510 | 3,190 | 4,170 | 156% |
| | Partially revised | 1,631 | 1,870 | 2,330 | 2,790 | 3,480 | 113% |
| Number of people aged 65+ supported in residential care | Fully revised | 362 | 420 | 400 | 350 | 310 | -15% |
| | Partially revised | 362 | 420 | 440 | 440 | 460 | 28% |
| Number of people aged 65+ supported in nursing care | Fully revised | 155 | 180 | 230 | 290 | 370 | 139% |
| | Partially revised | 155 | 180 | 220 | 260 | 320 | 105% |
| Number of people supported in extra care housing | Fully revised | 52 | 170 | 320 | 350 | 410 | 693% |
| | Partially revised | 52 | 60 | 110 | 180 | 270 | 412% |

Under the fully revised service model, with demographic growth taken into consideration, an additional 3,490 people would be helped to live at home by 2021, along with an extra 250 households receiving intensive homecare. The most dramatic changes would be to extra care, with an additional 360 people accommodated by 2021, while the number of people in residential care could drop slightly to around 310.

9.5 The combined effects of frailty changes and structural changes

In Cambridgeshire, under a fully revised service structure, assuming a 7% frailty reduction reduces the projected demand for extra care to 1,970 by 2021 (compared to 2,120 with no frailty change). 9,640 people would be supported to live at home, compared to 10,360 with no frailty change. 1,440 households would receive intensive homecare, compared to 1,540.

In Peterborough, assuming a 7% frailty reduction reduces the projected demand for extra care to 380 by 2021 (compared to 410 with no frailty change). 5,130 people would be supported to live at home, compared to 5,510 with no frailty change. 430 households would receive intensive homecare, compared to 460.

These data emphasise that, within social services, structural changes will have a substantial effect on service provision, and that these will be affected to only a minor extent by likely changes to the health of older people.

Table 9.4: Combined effect of fully revised structure and frailty reduction

| Indicator | % Frailty change | Cambridgeshire CC | | | Peterborough CC | | |
|---|------------------|-------------------|----------------|----------|-----------------|----------------|----------|
| | | Current 2003 | Projected 2021 | % change | Current 2003 | Projected 2021 | % change |
| Older people helped to live at home | 3.5% | 4,230 | 10,000 | 136% | 2,020 | 5,320 | 163% |
| | 7.0% | 4,230 | 9,640 | 128% | 2,020 | 5,130 | 154% |
| Households receiving intensive homecare | 3.5% | 776 | 1,490 | 92% | 209 | 450 | 114% |
| | 7.0% | 776 | 1,440 | 85% | 209 | 430 | 106% |
| Number of assessments of older service users | 3.5% | 5,511 | 12,210 | 122% | 1,631 | 4,030 | 147% |
| | 7.0% | 5,511 | 11,770 | 114% | 1,631 | 3,880 | 138% |
| Number of people aged 65+ supported in residential care | 3.5% | 1,121 | 170 | -85% | 362 | 300 | -18% |
| | 7.0% | 1,121 | 160 | -86% | 362 | 290 | -21% |
| Number of people aged 65+ supported in nursing care | 3.5% | 520 | 1,080 | 107% | 155 | 360 | 130% |
| | 7.0% | 520 | 1,040 | 99% | 155 | 340 | 122% |
| Number of people supported in extra care housing | 3.5% | 308 | 2,050 | 565% | 52 | 400 | 665% |
| | 7.0% | 308 | 1,970 | 541% | 52 | 380 | 637% |

Table 9.5: Combined effect of partially revised structure and frailty reduction

| Indicator | % Frailty change | Cambridgeshire CC | | | Peterborough CC | | |
|---|------------------|-------------------|----------------|----------|-----------------|----------------|----------|
| | | Current 2003 | Projected 2021 | % change | Current 2003 | Projected 2021 | % change |
| Older people helped to live at home | 3.5% | 4,230 | 8,120 | 92% | 2,020 | 4,320 | 114% |
| | 7.0% | 4,230 | 7,830 | 85% | 2,020 | 4,160 | 106% |
| Households receiving intensive homecare | 3.5% | 776 | 1,320 | 70% | 209 | 400 | 89% |
| | 7.0% | 776 | 1,270 | 64% | 209 | 380 | 82% |
| Number of assessments of older service users | 3.5% | 5,511 | 10,180 | 85% | 1,631 | 3,350 | 106% |
| | 7.0% | 5,511 | 9,810 | 78% | 1,631 | 3,230 | 98% |
| Number of people aged 65+ supported in residential care | 3.5% | 1,121 | 910 | -19% | 362 | 450 | 23% |
| | 7.0% | 1,121 | 880 | -22% | 362 | 430 | 19% |
| Number of people aged 65+ supported in nursing care | 3.5% | 520 | 920 | 77% | 155 | 310 | 97% |
| | 7.0% | 520 | 890 | 71% | 155 | 290 | 90% |
| Number of people supported in extra care housing | 3.5% | 308 | 1,360 | 343% | 52 | 260 | 394% |
| | 7.0% | 308 | 1,320 | 327% | 52 | 250 | 376% |

10 Summary of population and healthcare implications by PCT

This section provides an overview of the outcomes of this study in terms of their implications for each PCT. The information presented here should be taken as a guide of the likely direction and magnitude of change and not as a definitive statement of requirements. The latter may only be developed in conjunction with detailed work by each PCT to establish their local strategic vision for the coming years.

Note that all workforce implications refer to whole time equivalents.

10.1 Cambridge City PCT

The population of Cambridge City PCT is forecast to rise by 33% between 2001 and 2021, equating to an additional 36,400 people. The population aged 0 to 14 is forecast to rise by 44%, equating to an additional 6,600 children. The population aged over 65 is forecast to rise by only 1%, equating to an increase of just 200 older people. Cambridge is unique amongst the Cambridgeshire and Peterborough PCTs in showing a decline in the proportion of the population aged over 65. The health and social care requirements relating to population change here are therefore very different from those across the rest of the county. The exact nature of population growth will, however, be highly dependent on the nature of new housing, and on the proportions of family housing, affordable housing and social housing in particular, so will need to be closely monitored over the coming years.

On the basis of population growth alone, surgical and non-surgical outpatient attendances are projected to rise by 19,300 (23%) attendances per year by 2021. Maternity outpatient attendances would rise by nearly 50%, amounting to an additional 1,400 attendances per year by 2021. If 30% of surgical and non-surgical outpatient attendances were treated by a GPwSI in the community, however, outpatient attendances could fall by over 12,000 per year by 2021, equating to a reduction of nearly 15%. This would require around 31,100 attendances being treated in a community setting by 2021.

Day case admissions would rise by 18% on the basis of population growth alone, equating to the equivalent of four additional day case beds. If elective admission rates were to increase in line with NBI suggestions, along with a higher proportion being treated as day cases, this could result in a day case admission increase of up to 78% (an additional 7,100 admissions per year by 2021), equivalent to 16 additional day case beds.

Elective inpatient admissions would rise by around 600 admissions per year by 2021 (19%, equivalent to an additional five beds) on the basis of population growth alone. If elective admission rates were to increase in line with NBI suggestions, but a much higher proportion were treated as day cases, this could result in just a 2% rise in elective inpatient admissions (an additional 55 admissions per year by 2021), equating to the equivalent of just one additional bed by 2021. If, furthermore, the suggested reductions in length of stay and bed occupancy rates were achieved in full, bed requirements would actually fall by up to 30%, requiring the equivalent of 11 fewer elective inpatient beds by 2021.

On the basis of population growth alone, surgical and non-surgical emergency inpatient admissions would rise by 20% by 2021, equating to an additional 1,800 admissions per year by 2021, equivalent to 24 inpatient beds. Maternity emergency admissions would rise by 45%, equating to eight additional beds. If a moderate rise in emergency admission rate were experienced, this would lead to a 36% increase in emergency admissions (3,200 additional admissions per year by 2021, or 50 additional beds). If the suggested changes to length of stay and bed occupancy were also achieved, this would entirely mediate the effects of increased activity and population growth, leading to a requirement of 35 fewer beds by 2021 (a reduction of 18%).

Summed together, on the basis of population growth alone, inpatient bed requirements (excluding maternity beds) would rise by 29, increasing to 51 additional beds if admission rates were also to rise and a greater proportion were treated as day cases. If these were accompanied by the suggested length of stay and occupancy changes, inpatient bed requirements would actually fall by 46.

Accident and emergency attendance would rise by 32% given population growth alone, which could vary from a 34% reduction to a 45% increase, depending on the future role of A&E departments and the provision of alternative facilities elsewhere. If 50% of attendances were treated elsewhere by 2021, this would require up to 15,400 attendances to be re-provided in an alternative setting.

Population growth is projected to lead to an increase in primary care consultations of 29%, amounting to approximately 25 additional GPs and 14 additional practice nurses. Assuming a 2% rise in primary care activity per year, consultations would increase by 84% - an additional 300,000 consultations per year by 2021. Assuming that practice nurses could treat a further 20% of these consultations, an additional 68 GPs and 65 practice nurses would be required. In the scale of this increase, the additional activity for GPwSIs, (replacing outpatient attendances) is negligible.

District nursing activity is projected to increase by just 10% on the basis of population growth alone, equating to three additional district nurses. Given a 1% annual activity increase to 2021, this would equate to an activity increase of 32%, corresponding to nine additional WTE district nurses.

Summary

Overall, population growth in Cambridge will lead to a particular increase in demand for services for children, young people and adults of working age. Additional demands for services related to older people – such as district nursing – will be much more moderate. Shifts in service delivery mean the city's population would require fewer inpatient beds by 2021, but the additional primary and community care activity would lead to a demand for significantly enhanced primary and community care facilities. The majority of the new population are likely to live on the fringe of the city, leading to a need for additional primary care estates away from the city centre. Particular consideration might be given to the provision of a minor injuries unit to the north or east of the city, which might cater for both the Cambridge City and South Cambridgeshire populations, although this should be considered alongside requirements for Northstowe.

10.2 East Cambridgeshire and Fenland PCT

The population of East Cambridgeshire and Fenland PCT is forecast to rise by 22% between 2001 and 2021, equating to an additional 30,200 people. The population aged 0 to 14 is forecast to rise by just 12%, equating to an additional 3,000 children by 2021, while the population aged over 65 is forecast to rise by 52%, equating to an additional 12,400 older people. Population ageing will therefore be the major driver for additional health and social care demand in this PCT, with some further demand related to population growth among children and people of working age.

On the basis of population growth alone, surgical and non-surgical outpatient attendances are projected to rise by 29,500 attendances (27%) per year by 2021. Maternity outpatient attendances would rise by just 9%, amounting to an additional 680 attendances per year by 2021. If 30% of surgical and non-surgical outpatient attendances were treated by a GpW in the community, however, outpatient attendances could fall by over 12,000 per year by 2021, equating to a reduction of 11%. This would require up to 41,900 attendances being treated in a community setting by 2021.

Day case admissions would rise by 28% on the basis of population growth alone, equating to the equivalent of nine additional day case beds. If elective admission rates were to increase in line with NBI suggestions, along with a higher proportion being treated as day cases, this could result in a day case admission increase of up to 100% (an additional 13,100 admissions per year by 2021), equating to the equivalent of 30 additional day case beds.

Elective inpatient admissions would rise by around 1,350 admissions per year by 2021 (28%, equivalent to an additional 19 beds) on the basis of population growth alone. If elective admission rates were to increase in line with NBI suggestions, but a much higher proportion were treated as day cases, this could result in a 22% rise in elective inpatient admissions (an additional 1,000 admissions per year by 2021), equating to the equivalent of 18 additional beds by 2021. If, furthermore, the suggested reduction in length of stay and bed occupancy rates were achieved in full, bed requirements would actually fall by up to 13%, requiring the equivalent of seven fewer elective inpatient beds by 2021.

On the basis of population growth alone, surgical and non-surgical emergency inpatient admissions would rise by 33% by 2021, equating to an additional 3,800 admissions per year, the equivalent of 112 inpatient beds. The bed increase is so striking because of population ageing; older people tend to occupy beds longer so have a disproportional effect on bed requirements. Maternity emergency admissions would rise by 9%, equating to just one additional bed by 2021. If a moderate rise in emergency admission rate were experienced, this would lead to a 50% increase in emergency admissions (5,700 additional admissions per year by 2021, or 149 additional beds). If the suggested changes to length of stay and bed occupancy were also achieved, this would almost entirely mediate the effects of increased activity and population growth, leading to a requirement of just 12 additional beds by 2021 (an increase of 5%). It should therefore be emphasised that, even given an extremely ambitious reduction in length of stay, emergency bed requirements related to East Cambridgeshire and Fenland's population are likely to increase slightly.

Summed together, on the basis of population growth alone, inpatient bed requirements (excluding maternity beds) would rise by 131, increasing to 167 additional beds if admission rates were also to rise and a greater proportion were treated as day cases. If these were accompanied by the suggested length of stay and occupancy changes, inpatient bed requirements would remain around the same, with a possible increase of five beds by 2021.

Accident and emergency attendance would rise by 21% given population growth alone, which could vary from a 40% reduction to a 33% increase, depending on the future role of A&E departments and the provision of alternative facilities elsewhere. If 50% of attendances were treated elsewhere by 2021, this would require up to 14,200 attendances to be re-provided in an alternative setting.

Population growth is projected to lead to an increase in primary care consultations of 22%, amounting to approximately 19 additional GPs and 12 additional practice nurses. Assuming a 2% rise in primary care activity per year, consultations would increase by 75% - an additional 343,100 consultations per year by 2021. Assuming that practice nurses could treat a further 20% of these consultations, an additional 59 GPs and 56 practice nurses would be required. In the scale of this increase, the additional activity for GPwSIs, (replacing outpatient attendances) is negligible.

District nursing activity is projected to increase by 59% on the basis of population growth alone, equating to 12 additional WTE district nurses. Given a 1% annual activity increase to 2021, this would equate to an activity increase of 90%, corresponding to 19 additional district nurses. This increase highlights clearly the effect of an ageing population.

Summary

Overall, population growth in East Cambridgeshire and Fenland will lead to a particular increase in demand for services for older people. Population ageing has a major effect on inpatient bed requirements because older people tend to stay in hospital longer. Even given major shifts in service delivery, including an ambitious reduction in length of stay, inpatient beds requirements will, at best, remain stable to 2021. The additional primary and community care activity will also lead to a demand for significantly enhanced primary and community care facilities. Given that the majority of the population growth will be located in and around the market towns, but that there will be some growth across most of the villages in Fenland as well, this is likely to place a considerable burden on existing primary care facilities. Consideration will need to be given to identifying facilities that might be able to expand, as well as areas where new facilities might be more appropriate.

10.3 Huntingdonshire PCT

The population of Huntingdonshire PCT is forecast to rise by 9% between 2001 and 2021, equating to an additional 12,900 people. The population aged 0 to 14 is forecast to decline by 14%, equating to 4,300 fewer children by 2021, while the population aged over 65 is forecast to rise by 72%, equating to an additional 13,600 older people. Population ageing will therefore be the major driver for additional health and social care demand in this PCT, with some further demand related to population growth among people of working age. Growth will be mainly concentrated around the market town of St Neots (including Little Paxton), with parts of Huntingdon and its surrounding wards also showing marked population growth.

On the basis of population growth alone, surgical and non-surgical outpatient attendances are projected to rise to 29,100 additional attendances (23%) per year by 2021. Maternity outpatient attendances would fall by 6%, amounting to 430 fewer attendances per year by 2021. If 30% of surgical and non-surgical outpatient attendances were treated by a GpW in the community, however, outpatient attendances could fall by over 17,800 per year by 2021, equating to a reduction of 14%. This would require up to 46,900 attendances being treated in a community setting by 2021.

Day case admissions would rise by 24% on the basis of population growth alone, equating to the equivalent of eight additional day case beds. If elective admission rates were to increase in line with NBI suggestions, along with a higher proportion being treated as day cases, this could result in a day case admission increase of up to 93% (an additional 13,400 admissions per year by 2021), equivalent to 30 additional day case beds.

Elective inpatient admissions would rise by around 1,100 admissions per year by 2021 (25%, equivalent to an additional 17 beds) on the basis of population growth alone. If elective admission rates were to increase in line with NBI suggestions, but a much higher proportion were treated as day cases, this could result in a 8% rise in elective inpatient admissions (an additional 360 admissions per year by 2021), equating to the equivalent of 12 additional inpatient beds by 2021. If, furthermore, the suggested reduction in length of stay and bed occupancy rates were achieved in full, bed requirements would actually fall by up to 20%, requiring the equivalent of ten fewer elective inpatient beds by 2021.

On the basis of population growth alone, surgical and non-surgical emergency inpatient admissions would rise by 25% by 2021, equating to an additional 3,200 admissions per year, the equivalent of 92 inpatient beds. The bed increase is so striking because of population ageing; older people tend to occupy beds longer so have a disproportionate effect on bed requirements. Maternity emergency admissions would fall by 6%, equating to one fewer bed by 2021. If a moderate rise in emergency admission rate were experienced, this would lead to a 42% increase in emergency admissions (5,300 additional admissions per year by 2021, or 122 additional beds). If the suggested changes to length of stay and bed occupancy were also achieved, this would mediate, in part, the effects of increased activity, leading to a requirement of just 13 additional beds by 2021 (an increase of 6%). It should therefore be emphasised that, even given an extremely ambitious reduction in length of stay, emergency bed requirements related to Huntingdonshire's population are likely to increase slightly.

Summed together, on the basis of population growth alone, inpatient bed requirements (excluding maternity beds) would rise by 109, increasing to 134 additional beds if admission rates were also to rise and a greater proportion were treated as day cases. If these were accompanied by the suggested length of stay and occupancy changes, inpatient bed requirements would remain around the same, with a possible increase of three beds by 2021.

Accident and emergency attendance would rise by 9% given population growth alone, which could vary from a 45% reduction to a 20% increase, depending on the future role of A&E departments and the provision of alternative facilities elsewhere. If 50% of attendances were treated elsewhere by 2021, this would require up to 16,600 attendances to be re-provided in an alternative setting.

Population growth is projected to lead to an increase in primary care consultations of 13%, amounting to approximately 11 additional GPs and 10 additional practice nurses. Assuming a 2% rise in primary care activity per year, consultations would increase by 61% - an additional 293,500 consultations per year by 2021. Assuming that practice nurses could treat a further 20% of these consultations, an additional 52 GPs and 55 practice nurses would be required. In the scale of this increase, the additional activity for GPwSIs, (replacing outpatient attendances) is negligible.

District nursing activity is projected to increase by 61% on the basis of population growth alone, equating to 11 additional district nurses. Given a 1% annual activity increase to 2021, this would equate to an activity increase of 93%, corresponding to 16 additional district nurses. This increase highlights clearly the effect of an ageing population.

Summary

Overall, population growth in Huntingdonshire will lead to a particular increase in demand for services for older people. Population ageing has a major effect on inpatient bed requirements because older people tend to stay in hospital longer. Even given major shifts in service delivery, including an ambitious reduction in length of stay, inpatient beds requirements will, at best, remain stable to 2021. The additional primary and community care activity will also lead to demand for significantly enhanced primary and community care facilities. Given that much of the additional population will be located around St Neots and Huntingdon, these areas (particularly the eastern side of St Neots) might be considered for the provision of new facilities. The effect of an ageing population will be felt across the whole PCT, however, so that practices in areas outside the centres of growth may experience an increase in activity.

10.4 South Cambridgeshire PCT

The population of South Cambridgeshire PCT is forecast to rise by 35% between 2001 and 2021, equating to an additional 45,900 people. The population aged 0 to 14 is forecast to increase by 27%, equating to 6,700 additional children by 2021, while the population aged over 65 is forecast to rise by 75%, equating to an additional 14,500 older people. Both overall population increase and population ageing will be major drivers for additional health and social care demand in this PCT. Population growth will be concentrated in the new settlement of Northstowe and on the Cambridge City fringe, particularly to the north and east. The ultimate effects of new build in these areas will be highly dependent on the nature of new housing, and on the proportions of family housing, affordable housing and social housing in particular, so will need to be closely monitored over the coming years.

On the basis of population change alone, surgical and non-surgical outpatient attendances are projected to rise to 28,700 additional attendances (40%) per year by 2021. Maternity outpatient attendances would rise by 19%, amounting to 500 additional attendances per year by 2021. If 30% of surgical and non-surgical outpatient attendances were treated by a GpWSI in the community, however, outpatient attendances could fall to 1,400 fewer per year by 2021, equating to a reduction of 2%. This would require up to 30,100 attendances to be treated in a community setting by 2021.

Day case admissions would rise by 42% on the basis of population growth alone, equivalent to seven additional day case beds. If elective admission rates were to increase in line with NBI suggestions, along with a higher proportion being treated as day cases, this could result in a day case admission increase of up to 120% (an additional 9,900 admissions per year by 2021), equating to 22 additional day case beds.

Elective inpatient admissions would rise by around 1,200 admissions per year by 2021 (43%, equivalent to an additional 17 beds) on the basis of population growth alone. If elective admission rates were to increase in line with NBI suggestions, but a much higher proportion were treated as day cases, this could result in a 31% rise in elective inpatient admissions (an additional 880 admissions per year by 2021), equivalent to 16 additional inpatient beds by 2021. If, furthermore, the suggested reduction in length of stay and bed occupancy rates were achieved in full, bed requirements would actually fall by around 3%, requiring the equivalent of one fewer elective inpatient beds by 2021.

On the basis of population growth alone, surgical and non-surgical emergency inpatient admissions would rise by 49% by 2021, equating to an additional 3,400 admissions per year, the equivalent of 101 inpatient beds. Maternity emergency admissions would rise by 20%, equating to two additional beds by 2021. If a moderate rise in emergency admission rate were experienced, this would lead to a 68% increase in emergency admissions (4,600 additional admissions per year by 2021, or 126 additional beds). If the suggested changes to length of stay and bed occupancy were also achieved, this would mediate, in part, the effects of increased activity, leading to a requirement of 28 additional beds by 2021 (an increase of 18%). It should therefore be emphasised that, even given an extremely ambitious reduction in length of stay, emergency bed requirements related to South Cambridgeshire's population will still increase.

Summed together, on the basis of population growth alone, inpatient bed requirements (excluding maternity beds) would rise by 119, increasing to 142 additional beds if admission rates were also to rise and a greater proportion were treated as day cases. If these were accompanied by the suggested length of stay and occupancy changes, inpatient bed requirements would rise slightly, with an increase of 27 beds by 2021.

Accident and emergency attendance would rise by 33% given population growth alone, but could vary from a 33% reduction to a 47% increase, depending on the future role of A&E departments and the provision of alternative facilities elsewhere. If 50% of attendances were treated elsewhere by 2021, this would require up to 10,280 attendances to be re-provided in an alternative setting.

Population growth is projected to lead to an increase in primary care consultations of 35%, amounting to approximately 21 additional GPs and 12 additional practice nurses. Assuming a 2% rise in primary care activity per year, consultations would increase by 93% - an additional 407,600 consultations per year by 2021. Assuming that practice nurses could treat a further 20% of these consultations, an additional 54 GPs and 44 practice nurses would be required. In the scale of this increase, the additional activity for GPwSIs (replacing outpatient attendances) is negligible.

District nursing activity is projected to increase by 77% on the basis of population growth alone, equating to 13 additional district nurses. Given a 1% annual activity increase to 2021, this would equate to an activity increase of 111%, corresponding to 19 additional district nurses. This increase highlights clearly the effect of an ageing population.

Summary

Overall, population growth in South Cambridgeshire will lead to major increases in demand for all services, including those relating to older people and to children. Population ageing will have a considerable effect on inpatient bed requirements because older people tend to stay in hospital longer. Even given major shifts in service delivery, including an ambitious reduction in length of stay, inpatient beds requirements will rise slightly to 2021. The additional primary and community care activity will also lead to demand for significantly enhanced primary and community care facilities. The two main areas where entirely new facilities will be required will be Northstowe and on the Cambridge fringe. The Cambridge fringe facilities must clearly be developed with both Cambridge City and South Cambridgeshire parts of sites in mind. The creation of Northstowe provides an excellent opportunity for visionary service provision, where facilities such as a minor injuries unit could be considered. The effect of an ageing population will be felt across the whole PCT, however, so that practices in areas outside the centres of growth may experience an increase in activity.

10.5 Greater Peterborough PCP

The population of GPPCP is forecast to rise by 18% between 2001 and 2021, equating to an additional 37,200 people. The population aged 0 to 14 is forecast to increase by 6%, equating to 2,300 additional children by 2021, while the population aged over 65 is forecast to rise by 60%, equating to an additional 17,300 older people. Both overall population increase and population ageing will drive additional health and social care demand in GPPCP. Population growth has been, and will continue to be, concentrated in the new township of Hampton, along with the Paston reserve to the northeast of the City, Stanground to the south and Werrington to the north.

On the basis of population change alone, surgical and non-surgical outpatient attendances are projected to rise to 39,000 additional attendances (27%) per year by 2021. Maternity outpatient attendances would rise by 8%, amounting to 590 additional attendances per year by 2021. If 30% of surgical and non-surgical outpatient attendances were treated by a GpW in the community, however, outpatient attendances could fall to 15,500 fewer per year by 2021, equating to a reduction of 11%. This would require up to 54,500 attendances being treated in a community setting by 2021.

Day case admissions would rise by 28% on the basis of population growth alone, equating to eight additional day case beds. If elective admission rates were to increase in line with NBI suggestions, along with a higher proportion being treated as day cases, this could result in a day case admission increase of almost 100% (an additional 12,600 admissions per year by 2021), equivalent to 28 additional day case beds.

Elective inpatient admissions would rise by around 1,800 admissions per year by 2021 (28%, equivalent to an additional 23 beds) on the basis of population growth alone. If elective admission rates were to increase in line with NBI suggestions, but a much higher proportion were treated as day cases, this could result in a 29% rise in elective inpatient admissions (an additional 1,900 admissions per year by 2021), equivalent to 31 additional inpatient beds by 2021. If, furthermore, the suggested reduction in length of stay and bed occupancy rates were achieved in full, bed requirements would actually fall by around 2%, requiring the equivalent of one fewer elective inpatient bed by 2021.

On the basis of population growth alone, surgical and non-surgical emergency inpatient admissions would rise by 30% by 2021, equating to an additional 5,100 admissions per year, the equivalent of 154 inpatient beds. Maternity emergency admissions would rise by 5%, equating to one additional bed by 2021. If a moderate rise in emergency admission rate were experienced, this would lead to a 48% increase in emergency admissions (8,100 additional admissions per year by 2021, or 202 additional beds). If the suggested changes to length of stay and bed occupancy were also achieved, this would mediate, in part, the effects of increased activity, leading to a requirement of just 26 additional beds by 2021 (an increase of 9%). It should therefore be emphasised that, even given an extremely ambitious reduction in length of stay, emergency bed requirements relating to GPPCP's population will still increase. These figures also emphasise the importance of achieving the length of stay reduction in order to mediate substantial additional bed requirements.

Summed together, on the basis of population growth alone, inpatient bed requirements (excluding maternity beds) would rise by 177, increasing to 233 additional beds if admission rates were also to rise and a greater proportion were treated as day cases. If these were accompanied by the suggested length of stay and occupancy changes, inpatient bed requirements would rise slightly, with an increase of 25 beds by 2021.

Accident and emergency attendance would rise by 16% given population growth alone, but could vary from a 42% reduction to a 28% increase, depending on the future role of A&E departments and the provision of alternative facilities elsewhere. If 50% of attendances were treated elsewhere by 2021, this would require up to 24,360 attendances to be re-provided in an alternative setting.

Population growth is projected to lead to an increase in primary care consultations of 22%, amounting to approximately 26 additional GPs and 15 additional practice nurses. Assuming a 2% rise in primary care activity per year, consultations would increase by 74% - an additional 488,100 consultations per year by 2021. Assuming that practice nurses could treat a further 20% of these consultations, an additional 85 GPs and 69 practice nurses would be required. In the scale of this increase, the additional activity for GPwSIs (replacing outpatient attendances) is negligible.

District nursing activity is projected to increase by 67% on the basis of population growth alone, equating to 28 additional district nurses. Given a 1% annual activity increase to 2021, this would equate to an activity increase of 100%, corresponding to 41 additional district nurses. This increase highlights clearly the effect of an ageing population.

Summary

Overall, population growth in GPPCP will lead to major increases in demand for all services, including those relating to older people. Population ageing will have a moderate effect on inpatient bed requirements because older people tend to stay in hospital longer. Even given major shifts in service delivery, including an ambitious reduction in length of stay, inpatient bed requirements will rise slightly to 2021. The additional primary and community care activity will also lead to demand for significantly enhanced primary and community care facilities. The new developments around the Paston reserve and Werrington should be considered as areas for the provision of new facilities. Additional growth within the city may require the expansion of existing facilities.