RESEARCH SERIES
NUMBER 13

OCTOBER 2009

PROJECTING THE IMPACT OF DEMOGRAPHIC CHANGE ON THE DEMAND FOR AND DELIVERY OF HEALTH CARE IN IRELAND

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7. CONCLUSIONS AND IMPLICATIONS

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7.1 Introduction

This report, the third in a series of three produced for the Health Research Board, has combined the health care trend analyses of report one (Layte *et al.*, 2009) with the population projections of the second report (Morgenroth 2009) to examine likely population driven trends both in overall and regional level demand for health services in Ireland up to 2021. As stated in the introduction to this report, it is important to understand the aim of projection exercises such as this when interpreting our findings. All demographic projections are exercises in managing uncertainty and this uncertainty is amplified when demographic projections are used to project another dimension such as demand for and utilisation of healthcare. The projections created in this report are the result of judgements made on the coming together of evidence on past trends in population change in Ireland with knowledge of how such trends can interact with trends in health care utilisation and other factors such as changing morbidity patterns in the population. Past trends are not, however, an infallible guide to future developments and factors can combine in unexpected ways so our projections have to be seen as probabilistic in the sense that circumstances can change and the central forecast can quickly become redundant. This means that regular updates to the projections should be carried out to orient current policy.

7.2 Population Growth Net of Migration Trends

The truth of the last statement was made clear all too soon after the original demographic projections for this report were completed at the end of 2007. Early in 2008 the Irish economy entered a period of rapid slow down and growth quickly turned to recession as the housing market came to a standstill. The important influence which economic conditions have on patterns of migration, one of the primary determinants of demographic change, could suggest that this change in macro-economic conditions would undermine the usefulness of the existing projections. In fact, many of the demographic developments in Ireland that have a bearing on health care utilisation are actually independent of trends in migration over the period to 2021 and will continue to drive population growth even if economic conditions remain subdued. Ireland has comparatively high rates of fertility and although we forecast that fertility rates in Ireland will fall over the projection horizon, the actual number of births will not fall until after 2014. It is possible that worse economic conditions will decrease the

birth rate but the number of births is largely driven by the large size of the female cohort in fertile age groups.

Similarly, recent decades have witnessed substantial improvements in life expectancy among older age groups in Ireland and this increased longevity has contributed substantially to population growth and will continue to do so over the projection horizon of this project. The young profile of migrants to Ireland means that even negative immigration will have very little impact on the numbers of people in older age groups to 2021.

There seems little doubt that the downturn in the Irish economy will lead to fewer migrants to Ireland over the medium term, perhaps even renewed emigration. Nonetheless, it is highly likely that actual developments will converge with the reducing migration forecast built into our projections after 2014. At the minimum then, demographic trends will lead to a population increase of 11.2 per cent and an increase in the proportion aged 65 years or more of over 69 per cent (an actual increase in numbers from 468 to 792 thousand). With positive (but reducing) migration the population increase could be as high as 21.1 per cent. The likelihood is that actual population growth will be somewhere between these figures. The changing demographic structure of the population to 2021 with fewer younger people (at least after 2014) and more older people will actually increase health care requirements in most sectors since older people are more intensive users of health care on average.

7.3 Substantial Increases in the Demand for Health Care to 2021

Using our core M2F2 projection, the different chapters of this report have shown that all the main service areas will most likely experience substantial increases in demand as a consequence of population growth and ageing. The extent of the requirement by 2021 varies by sector but increases across all are substantial:

- On the basis of current utilization, population growth and ageing would require 5,214 more inpatient beds and 1,022 more day beds in Irish hospitals by 2020 (the final projection year from the PA Consulting Report (PA Consulting Group, 2007b) from which this project draws inpatient projections). This is a 54 per cent increase in inpatient beds and a 64 per cent increase in day beds between 2007 and 2020 or a total bed growth requirement of 4 per cent per annum.

- General practice consultations may increase by 32.5 per cent among those aged 16+ between 2006 and 2021 a figure that could rise to 48.2 per cent if projected changes in morbidity in the population are realised over the same period.

- Outpatient consultations may rise by 24.5 per cent overall on a current use basis but integration of trends from the period from 2001 to 2006 would see the proportionate increase in consultations in 2021 rise by 58 per cent over 2006. Worsening epidemiological trends would increase this requirement still further.

- Projections of prescribing to 2021 estimate that total ingredient costs will escalate to €1.5 billion on a current use basis and €2.4

billion if past trends from 1995-2006 prevail from €1.06 billion in 2006. These are increases of 42 per cent and 126 per cent

- Our preferred projection of demand for residential long-term care for people aged 65 years and over in 2021 is 35,200 places or 35,820 including current unmet need. This suggests a requirement for an additional 13,324 long-term care places or 59 per cent. This is 888 places per annum from 2007-2021 for people aged 65 years and over assuming an unchanged acute care system.

7.4 Coping with Demand Growth

The increased demand for health care likely to stem from demographic and epidemiological change in the Irish population is significant. Even if national finances improve substantially, the current way in which care is delivered will be unsustainable within any reasonable budget given the nature of demographic change. This demands a reconfiguration and intensification in the use of health care resources and improvements in levels of efficiency. Changes in the manner in which current resources are used and a reorganisation of services will moderate the extent of investment in services required.

PRIMARY CARE

It is clear that changes in the manner in which current resources are used and a reorganisation of services could moderate the extent of investment in new services required. For example, the increase in GP consultations expected in 2021 as a result of population growth and ageing will require an increase in GP numbers of around 300 if current GP/population ratios are to be preserved. This assumes that the current structure of GP practice would prevail. However, if the 2001 Primary Care Strategy were fully implemented in terms of the formation of primary care teams and networks, this would make more effective use of existing GP numbers. A team based practice provides access to a number of GPs thus minimising the impact of part-time working and shorter hours on the part of any one GP. Patients will not necessarily see their own GP but team working does make it more likely that a GP will be available. Team based practices also make greater use of other medical professionals such as practice nurses and local pharmacies. Practice nurses have the ability to carry out a large number of the tasks such as vaccination and monitoring of chronic conditions which currently fall to GPs. Increasing the numbers of nurses within primary care would bring significant increases in efficiency which could compensate for some of the increase in demand.

The role of pharmacists in primary care could also be much expended. Ireland has a high number of pharmacists per head of population but these offer a very limited range of services. They could provide health screening, distribution of non-prescription items to medical card holders (GPs have to prescribe these items at present for pharmacists to be refunded) and chronic disease management possibly including a form of pharmacist prescribing.[1]

[1] This would require a change in legislation covering pharmacist practices.

OUTPATIENT SERVICES

In the area of outpatient services the analyses in the first report from this series (Layte *et al.*, 2009) showed that around three-quarters of outpatient consultations are return visits. Although multiple visits are unavoidable in some instances it seems clear that at least a proportion of these return visits are for the purpose of maintenance and monitoring which could be just as effectively and much more cheaply carried out in primary care. A good example of this are warfarin clinics which make up 4 per cent of outpatient consultations overall and almost 10 per cent of consultations in outpatient departments among those aged 65+. Warfarin is an anti-coagulant (blood thinning agent) used in the treatment of cardiovascular disease. Treatment with the drug requires little equipment and basic medical skills but is carried out largely in expensive public hospitals in Ireland. With suitable training and safeguards it could be carried out just as safely and effectively and far more cost-effectively in primary care.

Warfarin is just one example of a treatment currently confined to out patient departments in Irish hospitals at present but which could be carried out in the more appropriate setting of primary care. A large amount of activity within Irish hospitals is concerned with treating chronic diseases such as heart failure, diabetes and chronic obstructive pulmonary disease (COPD) and their complications and this proportion is likely to increase over time with population ageing. Although patients with these conditions require more frequent acute care than the average, evidence from Ireland and elsewhere suggests that in most instances, these conditions can be managed in primary care just as successfully as in outpatient departments.

INPATIENT CARE IN ACUTE HOSPITALS

Chapter 2 of this report has examined the patterning of day case rates and inpatient length of stay across Irish hospitals and shows that there are possibilities to improve efficiencies in Irish hospitals. The transfer of a substantial proportion of hospital activity on a day to day case basis has been one of the primary reasons for the 62 per cent rise in discharges in Irish hospitals between 1995 and 2004. Over that period the number of day patients in Irish hospitals more than doubled from 161,535 to 425,825 whilst the proportion of inpatient discharges grew more slowly. However, day case rates for any particular condition vary from 0 to 100 per cent across hospitals and within, hospitals day case rates across procedures vary widely. Although the varying complexity of the case load across hospitals can lead to differences in day case rates, the current variability would suggest that there is substantial potential to increase day rates across the Irish hospital system and in doing so significantly increase the level of efficiency.

Analyses in Chapter 2 also showed that hospitals varied widely in terms of average length of stay even controlling for a host of patient characteristics and levels of comorbidity in particular. The longer average stay of patients in voluntary hospitals is a particular concern. Analyses showed that average stays in these hospitals was 9 per cent higher than expected. Voluntary hospitals do tend to treat patients who are older and who have higher levels of comorbidity but even if we control for these characteristics their length of stay is still significantly higher than in other public hospitals. The greater predominance of older and sicker patients in voluntary hospitals suggests that they may be treating patients who would

be better cared for in long stay institutions rather than acute hospitals with the associated opportunity costs.

7.5 The Inter-Dependence of Health Care Sectors – The Preferred Health Care System

The discussion above suggests a number of areas within Irish health care where treatment is carried out in inappropriate and cost-ineffective settings. In its Transformation Programme, the Health Services Executive (HSE) has clearly committed to an 'integrated health system', also known as the preferred health system (PHS), to be achieved through the redirection of health services away from acute hospitals to primary and community care and long-stay care (PA Consulting Group, 2007a). The PHS is one of two models used in a review carried out by PA Consulting Group for the HSE which develops projections for acute hospital bed capacity to 2020 and is referred to as 'the preferred health system' as opposed to the current mode of care delivery. As set out in Chapter 2 of this report, the review estimated that if current practices were to continue 19,822 acute public hospital beds would be required by 2020. Under the 'preferred health system' this number could be reduced by more than half to 8,834. Clearly some reductions in bed numbers could be achieved through more intensive use of day procedures and shorter average length of stay and assumptions on these factors are built into the calculations in the PA report. However, the report also assumes that a substantial proportion of the activities that are currently undertaken in the acute hospital sector could be transferred into other sectors and primary care in particular. Following the recommendations of the Primary Health Care Strategy (2001) the report argues that the development of primary care services and preventative services in particular will also decrease the overall health burden to be dealt with by the Irish health care system.

Where treatment and procedures can be transferred from an acute hospital setting to a more cost-effective location whilst maintaining patient care and treatment effectiveness it is clearly sensible to do so. A reorientation of care away from acute hospitals is a sound policy overall and a sensible strategic response to the pressures which demographic change will place on Irish health care in the decades to come. The issue is the extent to which other sectors are in a position to absorb the increased demand for health care which they will face with the reorientation of services. The third chapter of this report on general practitioner care showed that Ireland already has fewer GPs per head of population than almost all other Western European countries at around 56 per 100,000 of population and substantially less than the European average of 87 per 100,000. Retirement among Irish GPs and increasing part-time working will mean that Ireland will not be able to maintain the current, low population ratios to 2021 with current supply even assuming that all those who are trained in the Irish system end up practicing medicine here. A move to the 'preferred health system' would require, at the very minimum, an increase in the ratio of GP/population to average European levels although it could be argued that a higher level of provision akin to France, Austria or Germany would be more appropriate. Chapter 3 in this report showed that moving to an EU average level of provision would itself require over 3,500 additional full-time equivalent GPs by 2021. In fact, if the current rate of GP training and supply is maintained the population ratio in Ireland will fall to 51.2 GPs per 100,000 by 2021, a shortfall of 306 GPs. If government policy of increasing training places to 150 were implemented immediately this would improve the situation but still lead to

a fall in GP/population ratio. Reaching the EU average level of supply would require the training of 250 GPs a year and their retention in the Irish primary care system at the very minimum.

In this situation a transfer of workload from the acute hospital sector to primary care looks unrealistic even if the Primary Care Strategy is implemented in full and care teams and networks for the majority of the population become a reality rather than an aspiration.

The limited supply of GPs in the Irish context also means that supply constraints in outpatient departments cannot be easily solved by transferring aftercare and specific procedures into the primary sector. As already argued such a move would substantially ease waiting times for public outpatient consultations but given the analyses in this report it is unlikely to be a realistic possibility.

The preferred health system is also premised on a reduction in the average length of stay in Irish hospitals and particularly Irish voluntary hospitals. A proportion of this reduction was to be achieved by the transfer of older patients with chronic illness requiring longer-term care to long-stay accommodation. As shown in Chapter 6 in this report simply keeping pace with population ageing in Ireland in terms of the provision of long term care will present a challenge. Projected demand for residential LTC for people aged 65 years and over in 2021 is 35,820 up from 22,500 in 2006. This suggests a requirement for an additional 13,324 long-term care places or 888 places per annum from 2007-2021 for people aged 65 years and over. Chapter 6 also shows that the number of acute beds per head of population assumed in the preferred health system is low by international standards and would imply a total number of residential long stay places of over 48,700, an additional 21,300 or 60 per cent more than those required to keep up with expected population change. This would require the addition of 1,423 new long-stay residential beds per annum between 2007 and 2021 a challenging prospect even if the financial environment were more conducive.

The aims of the PA Acute Hospital Bed Capacity Review: A Preferred Health System in Ireland to 2020 (PA Consulting Group, 2007b) are laudable given the difficult demographic trends which Ireland will face over the next decade or so. The projection results contained in this report, however, suggest that the capacity of other health care sectors and primary care and long-stay care to absorb a reorientation of care away from acute hospitals is extremely limited at present and over the period to 2020 without substantial and sustained investment.

7.6 Future Research Needs

The introduction to this chapter argued that population and health care projections face inevitable uncertainty and cannot take account of all future events. A good example of just such an event is the recent downturn in the Irish economy. Although the recession does not undermine the value of the projections used in this project it does have implications for many of the processes we discuss. Such uncertainties mean that projections should be updated on a regular basis to take account of events.

The probable increased demand for care outlined in this report has important resource implications. Unfortunately, it was not within the remit

of this project to examine these implications but the fact remains that a thorough approach to the strategic development of health care in Ireland over the coming decades will require detailed projections of the resources required. These analyses should be carried out with some urgency.

Lastly, a clear understanding of morbidity trends and their impact on the demand for health care is essential if we are to plan services strategically. This project was not in a position to undertake a thorough examination of morbidity trends and so adopted estimates from elsewhere which were not differentiated by age and other important factors. This inevitably impacts on the precision of our estimates since population ageing has particular implications for the prevalence of poor health across a society. One particular dimension which should receive attention is the relative roles of ageing and proximity to death in structuring the demand for health care and how population health among older age groups may influence this relationship.

REFERENCES

PA CONSULTING GROUP (2007a). *Health Service Executive Acute Hospital Bed Capacity Review: A Preferred Health System in Ireland to 2020. Detailed Report*. PA Consulting Group.

PA CONSULTING GROUP (2007b). *Health Service Executive Acute Hospital Bed Capacity Review: A Preferred Health System in Ireland to 2020. Technical Appendix*. PA Consulting Group.