ESRI ECONOMIC & SOCIAL RESEARCH INSTITUTE

Planning for the Future Irish Healthcare System

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VENUE
ESRI, Whitaker Square,
Sir John Rogerson's Quay,
Dublin 2

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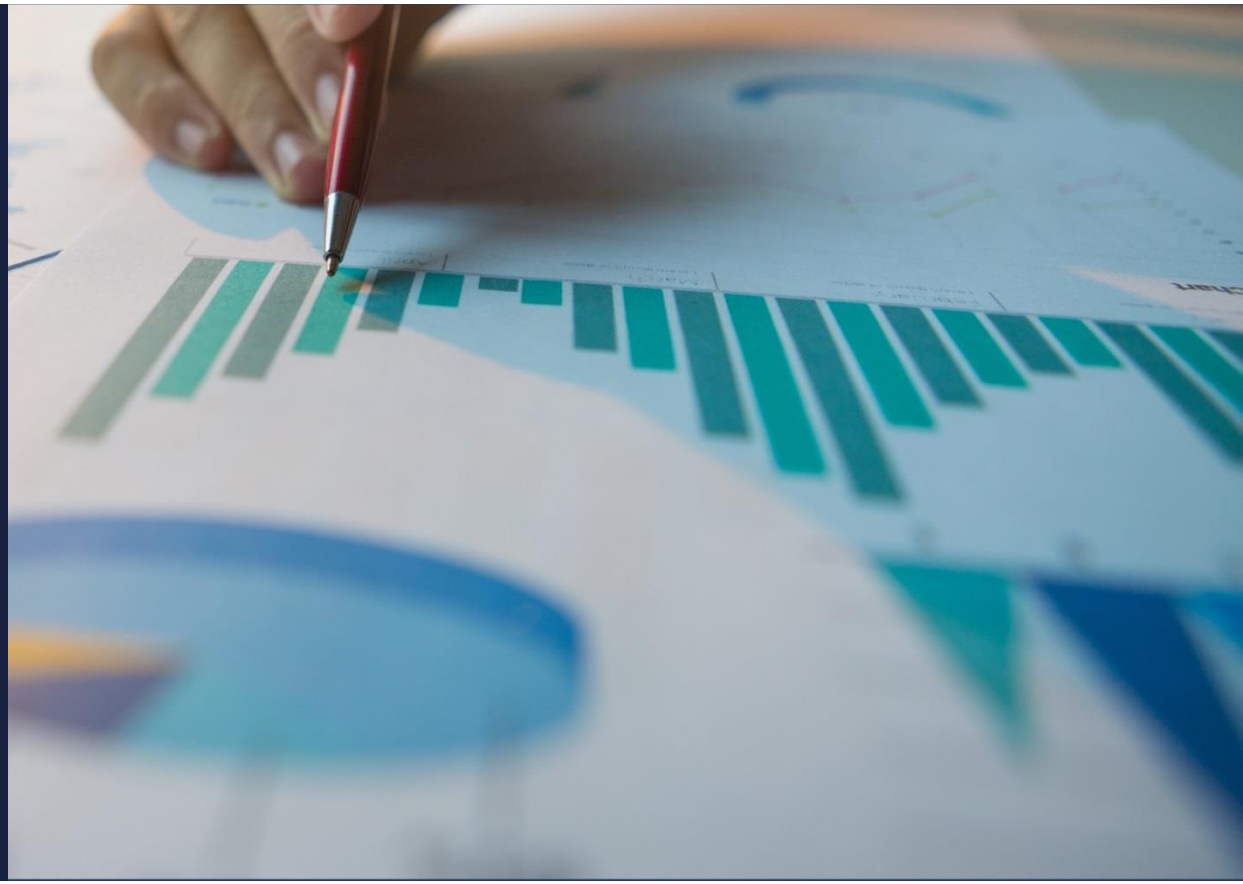


TODAY'S PROGRAMME

Session 1: *Projecting demand for Irish healthcare*

The future population of Ireland

How health is changing

Projecting demand for Irish health and social care

Session 2: *Exploring the impacts of proposed system change*

Where care is supplied

Universal access to care

Session 3: *Panel discussion*

Interlinking Research Projects

- ESRI/Department of Health Research Programme in Healthcare Reform from 2014
- HIPPOCRATES Model of healthcare demand and expenditure developed from 2015
- *Projections of Demand for Healthcare in Ireland, 2015-2030* (published 2017)
- Health Research Board-funded projects on relationship of care across settings (from 2015)
- and reform to achieve universality (from 2018)

The HIPPOCRATES MODEL

Objectives of HIPPOCRATES MODEL - Answer Questions in Irish Health Policy

Published research:

- How much care is used now?
- How much unmet need is there?
- How much demand for care will there be in the future?

Future applications of the model:

- What capacity is needed to meet future demand?
- How much spending will be needed?
- What are the drivers of Irish healthcare spending?
- If reform to change eligibility e.g. further extension free GP care – how much additional demand?

The HIPPOCRATES MODEL

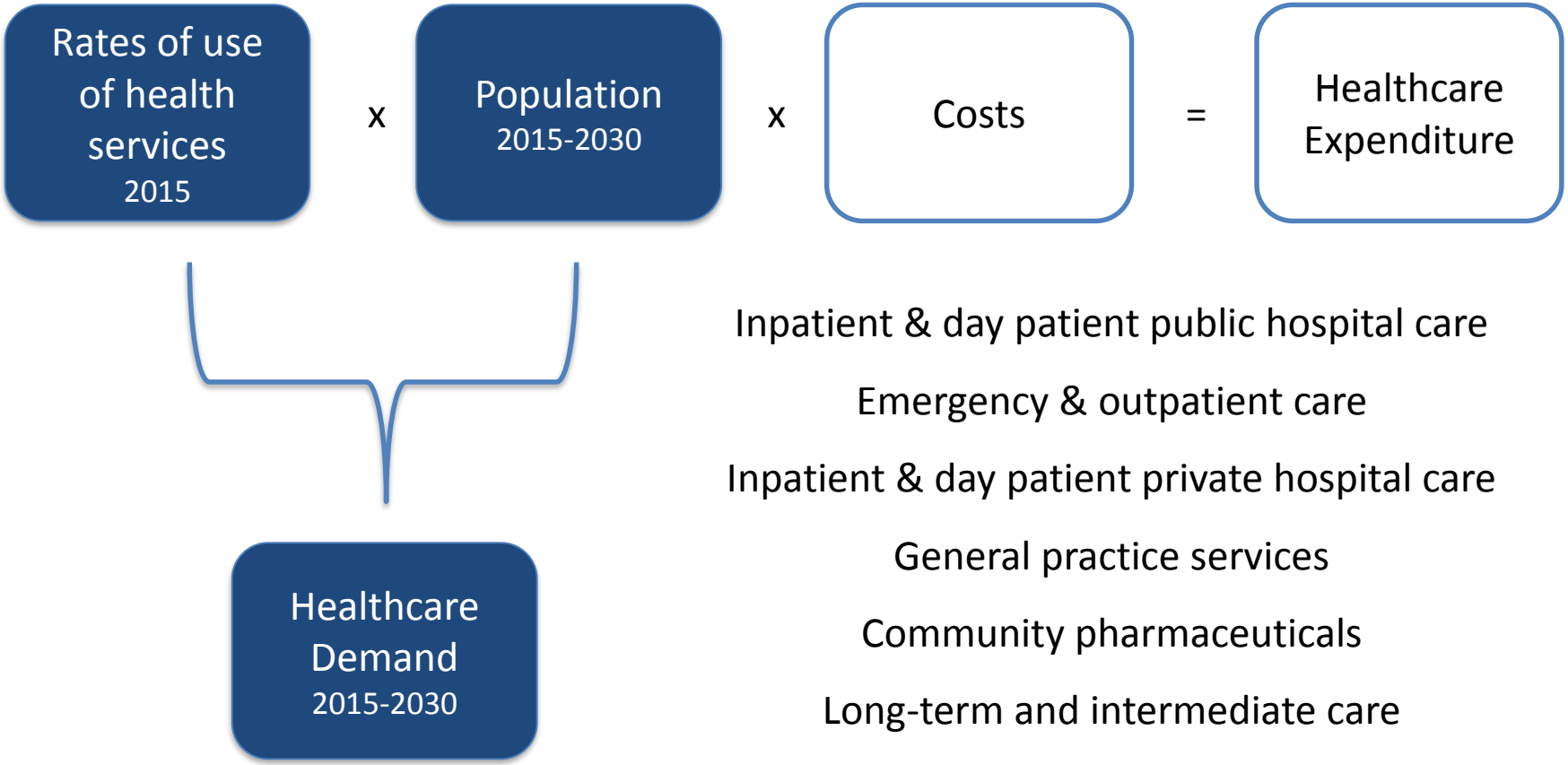
Scope:

- *All* health and social care services (acute, primary, community, long-term)
- Public *and* private demand and expenditures (private hospitals, private payments for GP and other non-acute care)

Projecting Demand

- Detailed analysis 2015 healthcare use
- Projections to 2030
- Compare effect population growth only
- Vary assumptions: population growth, healthy ageing, unmet need and demand
- Projection range by sector
- Key assumption no change in models of care
- Flexibility to change this assumption

The HIPPOCRATES MODEL



HEADLINE FINDINGS:

The Irish healthcare system, 2015

- Hospitals:
  - 1.5m day cases, 69% in public hospitals
  - 4.2m bed days, 85% in public hospitals
- Long-term care:
  - 10.6m bed days
- Home help:
  - 14.3m home help hours, 27% privately paid
- General practice:
  - 17.6m GP visits, 5.9m practice nurse visits

HEADLINE FINDINGS: Projections

In the 15 years, 2015 – 2030,

Projected demand for

- 32% to 37% more public hospital bed days
- 38% to 54% more home help hours
- 40% to 54% more residential care places
- 20% to 27% more GP visits

NEXT: Determinants of Demand

- Population growth
- Population ageing and increased life expectancy
- Healthy ageing
- Unmet need and demand

Other determinants such as effects of technology, higher incomes to be included as model includes expenditure

Determinants of Demand:

1. Population Growth and Ageing

Demographic Context

- Ireland's demographic profile is unusual in an EU context
  - Rapid population growth, 1996-2016: 31%; 6% in EU-28
  - Relative to the EU, have a favourable demographic structure (e.g. 2016: 13% of pop aged 65+; 19% in EU-28)

- However the population is ageing…
  - Between 1996-2016: 64% increase in pop aged 80+
  - And continued population ageing expected over the short to medium term

Demographic Modelling - Approach

- Modelling Approach: Cohort Component Method
  - In-house demographic model
  - Combine assumptions around fertility, mortality, and migration to generate population projections

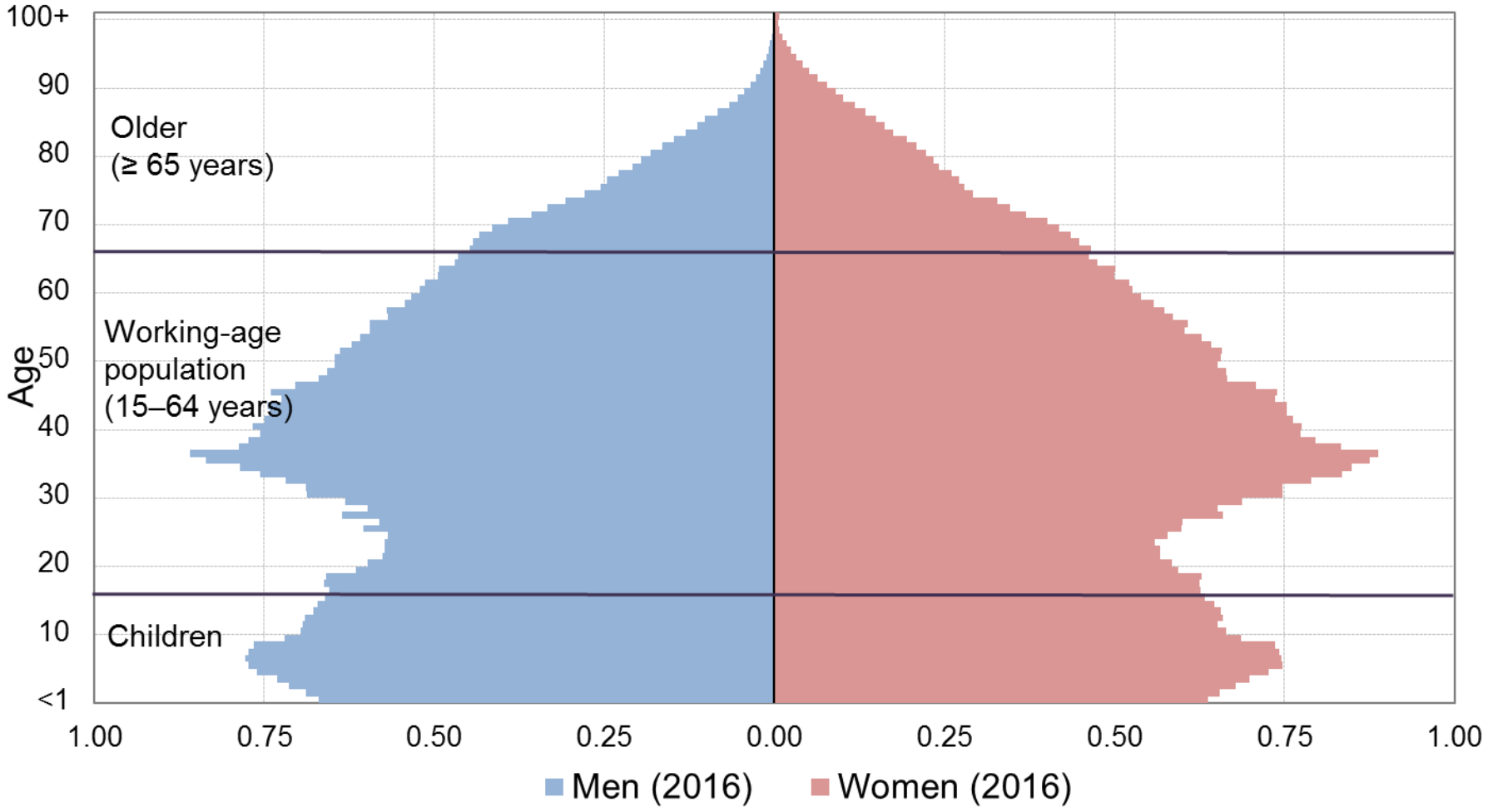
- Migration is the key driver of total population change in Ireland
  - Migration flows are very sensitive to economic conditions
    - Link with macro-model COSMO

Demographic Modelling - Assumptions

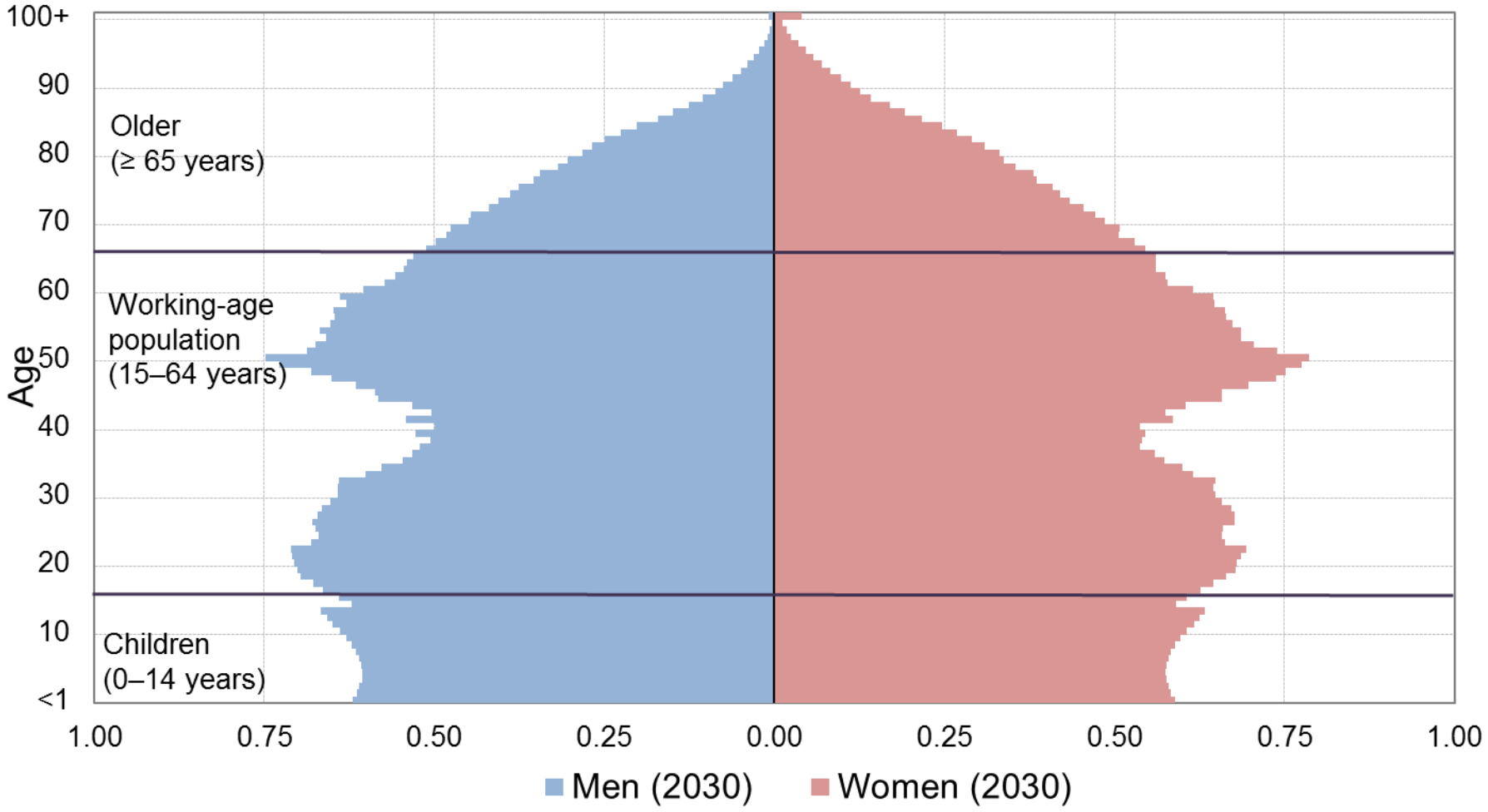
- Three different population scenarios (Central, High and Low)

	Assumptions – Central	Assumptions - High
Fertility: Total fertility rate	Unchanged at 1.94	Rises to 2.1 by 2021 and constant thereafter
Migration: Net immigration	Averaging 9,000 to 2021 and 13,000 p.a. thereafter	Averaging 39,000 to 2021 and 28,000 p.a. thereafter
Mortality: Life expectancy at birth	Increase from 78.4 to 82.9 years for males and 82.9 to 86.5 for females by 2030	Increase to 83.2 years for males and 86.8 for females by 2030

Population Structure: 2016



Population Structure: 2030 (Central Scenario)



Summary of Population Projections

- Population to increase to between **5.35m** to **5.79m** by 2030 in Central and High scenarios
  - This is an overall increase of between 14 to 23% on 2015
  - Migration is key driver of differences in Central and High scenarios
- The number of older persons is set to increase
  - Population aged 65+: 1 in 8 now. By 2030: 1 in 6
- Central scenario growth between 2015 and 2030:
  - Total: 14%; aged 65+: 60%; aged 80+: 89%
- High scenario growth between 2015 and 2030:
  - Total: 23%; aged 65+: 63%; aged 80+: 94%

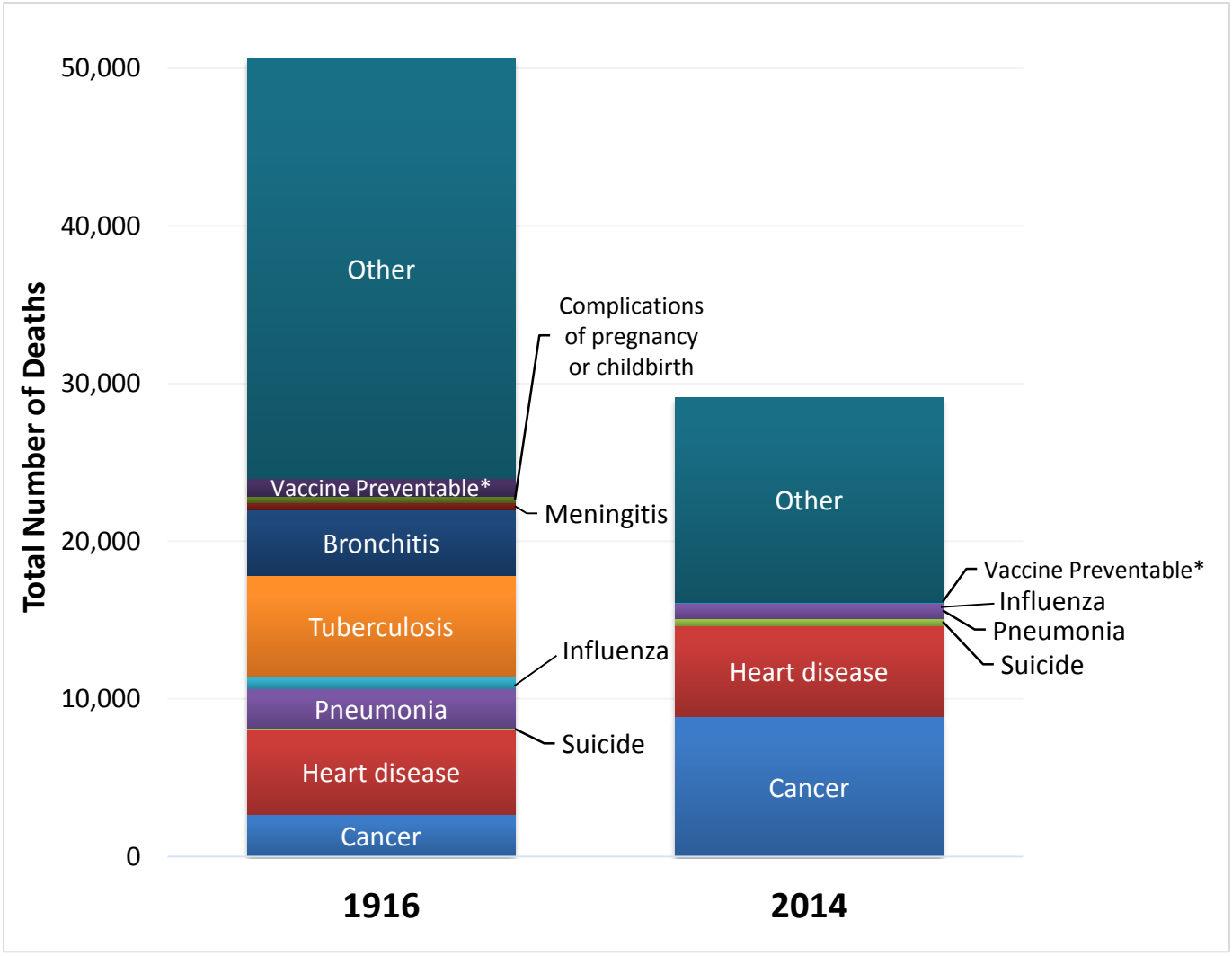
Determinants of Demand

2. Health and Ageing

Health and Ageing

- Life expectancy has increased significantly
- Demographic modelling in the report projects life expectancy to continue to increase contributing to larger population especially at older ages
- Will life expectancy improvements be accompanied by extra years of life lived in good or poor health (i.e. with or without a morbidity/disability)? – *"Healthy Ageing"*
- There have been considerable changes in population health and healthy ageing over time
    - Individuals are dying at later ages, but with (multiple) chronic conditions

Causes of Death Ireland, 1916 and 2014



Source: Registrar-General Annual Report for 1916, Vital Statistics CSO for 2014

Healthy Ageing

- **There are three main healthy ageing assumptions:**

1. Expansion of Morbidity – *"failure of success"*

- Gains in longevity accompanied by additional years with morbidity/disability
- **E.G.** If LE gain is one year, we assume that an 80-year old in 2030 will have the health status and the rate of healthcare use of an 80-year old in 2015

2. Dynamic Equilibrium – "proximity to death"

- Gains in longevity accompanied by an equivalent reduction in morbidity/disability
- **E.G.** If LE gain is one year, we assume that an 80-year old in 2030 will have the health status and the rate of healthcare use of a 79-year old in 2015

3. Compression of Morbidity

- A gain in health status exceeds the gain in life expectancy by 50 %
- **E.G.** If LE gain is one year, we assume that an 80-year old in 2030 will have the health status the rate of healthcare use of a 78.5-year old in 2015

Healthy Ageing Evidence

- Healthy Ageing approaches adopted in the report reflect evidence from the national and international literature
- Where available, evidence from each health and social care area examined separately

Examples of Healthy Ageing Assumptions adopted in the Report

Sector	Assumption	Evidence
General Practice	**Expansion of Morbidity**	• General practice services face demand for treatment of chronic diseases • Expansion in chronic disease observed in UK, Sweden, US
Home Care, Long-Term Care	**Compression of Morbidity**	• Irish evidence shows reduced disability rates in older people • Age-specific disability rate reductions in US, Japan, international review • Recent reductions in age-specific dementia rates in UK, US

Determinants of Demand

3. Unmet Need and Demand

Unmet Need and Demand

- Drivers of demand
  - Population growth and ageing
  - Healthy ageing
  - **Unmet need or demand**
- Unmet need refers to care not received
  - Unmet demand refers to unmet need where care has been sought (e.g. hospital waiting lists)
- Unmet need/demand applied to baseline activity rates
  - Survey vs administrative data

Unmet Demand for Hospital Care

- Measure unmet demand at end-2015
  - Based on National Treatment Purchase Fund (NTPF) data
  - Avoids double-counting
  - Unmet demand defined by international and national waiting time thresholds

- Outpatient
  - **High Volume**: 70 days (Sláintecare Report)
- Inpatient/Daycase
  - **High Volume**: 15 days [urgent], 84 days [routine] (Norway's and Portugal's urgent threshold, Sláintecare Report)

Findings: Unmet Need and Demand

Sector	Activity measure	Unmet need/demand estimate as percentage healthcare use in 2015 %
Public hospitals	Elective inpatient cases	1 - 3
	Day patient cases	2 - 5
	Outpatient attendances	1 - 8
General practice	GP visits	2
Long-term care	Residential LTC places	2
Home care	Home care packages	15
	Home help	3
Public community therapy	Physiotherapy referrals	5
	Occupational therapy referrals	5

Modelling Healthcare Demand

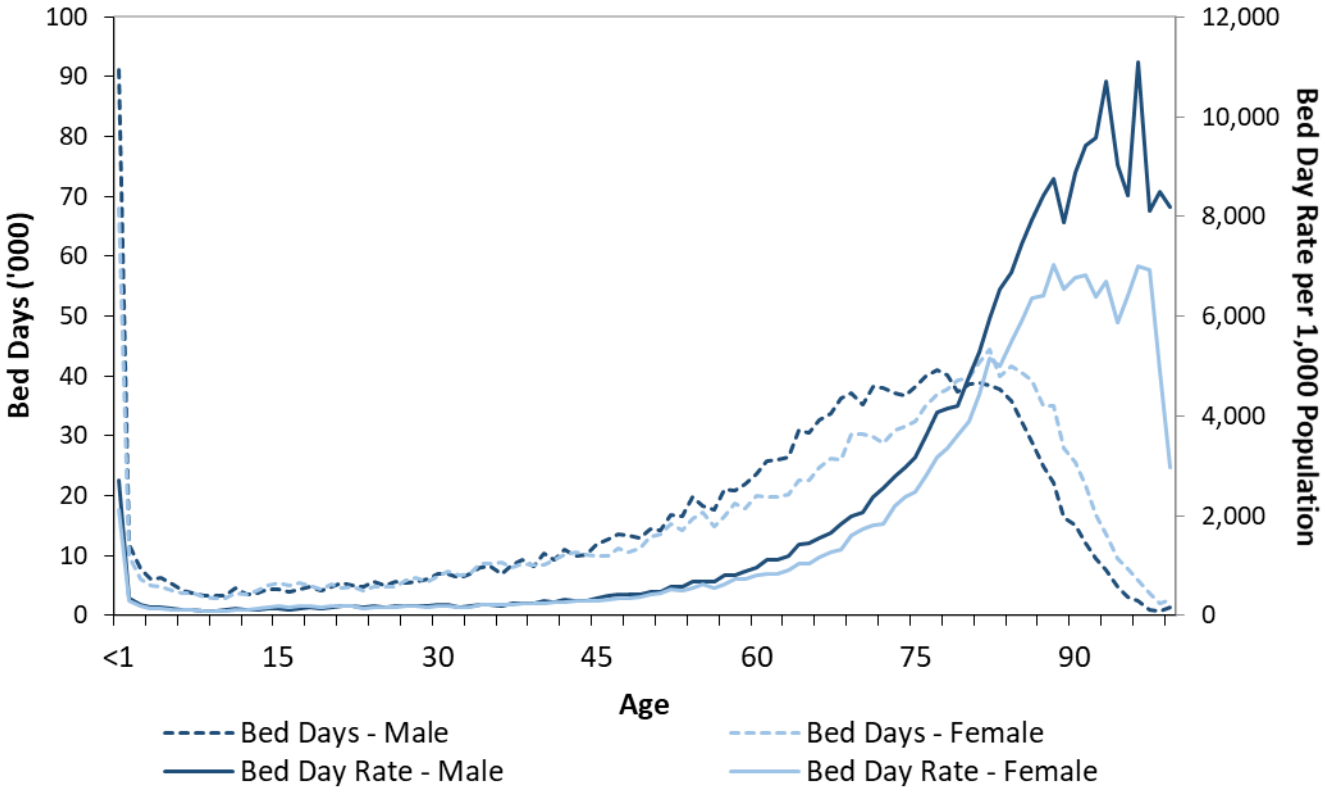
Model Construction

- Activity (health care use) estimated for 2015 and grouped into cohorts based on a set of characteristics (e.g. age and sex)
- Age/sex activity rate profiles are generated through combining with 2015 age/sex population data
- At its simplest, demand projected by multiplying age/sex activity rate profiles by projected annual age/sex population volumes

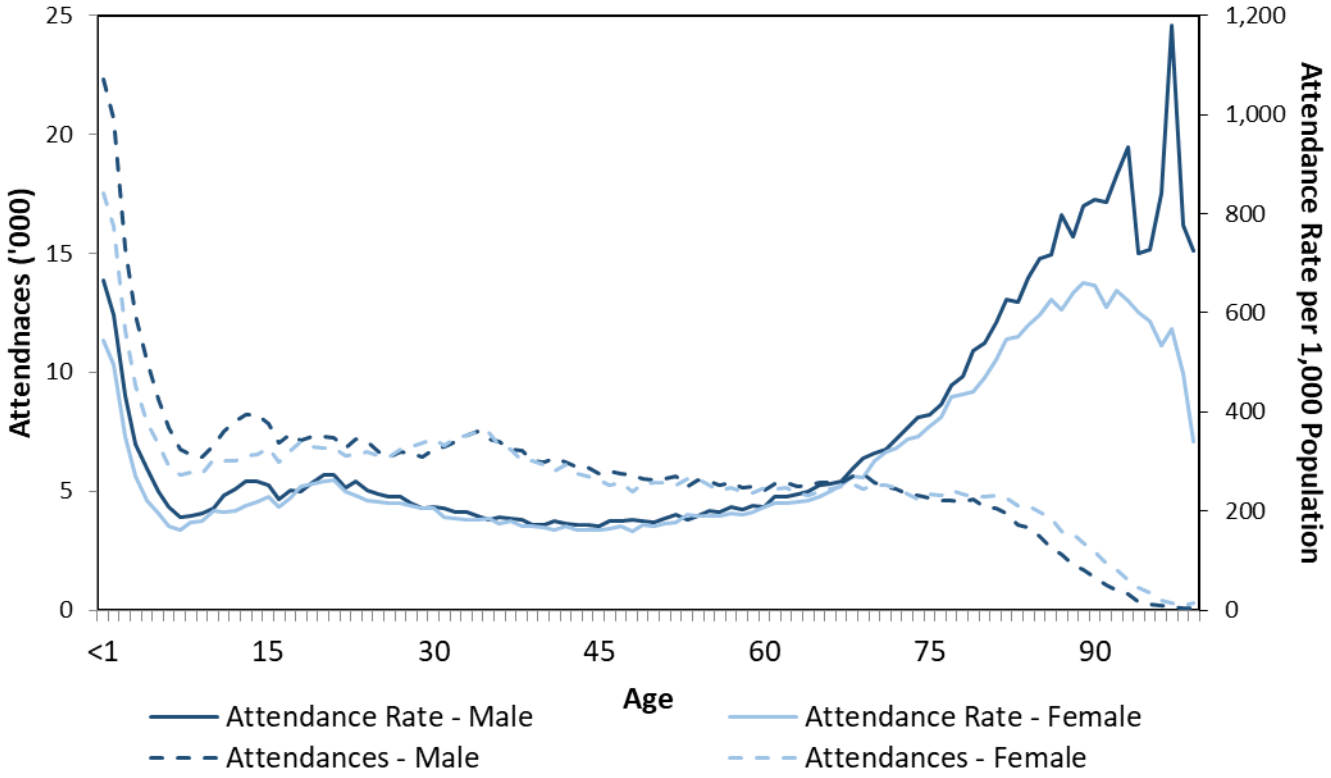
Activity Rate Profiles Differ by Age

- As there are more of them, the greater overall volume of healthcare users may be younger people
- However, older people tend to use healthcare services more frequently than younger people
- So activity rates are higher for older people
- Activity rate age profiles vary by service
- These differences make the effects of population ageing on projected demand vary by service

Activity Profile:
Public Hospital Inpatient Bed Days, 2015



Activity Profile:
Public Hospital ED Attendances, 2015

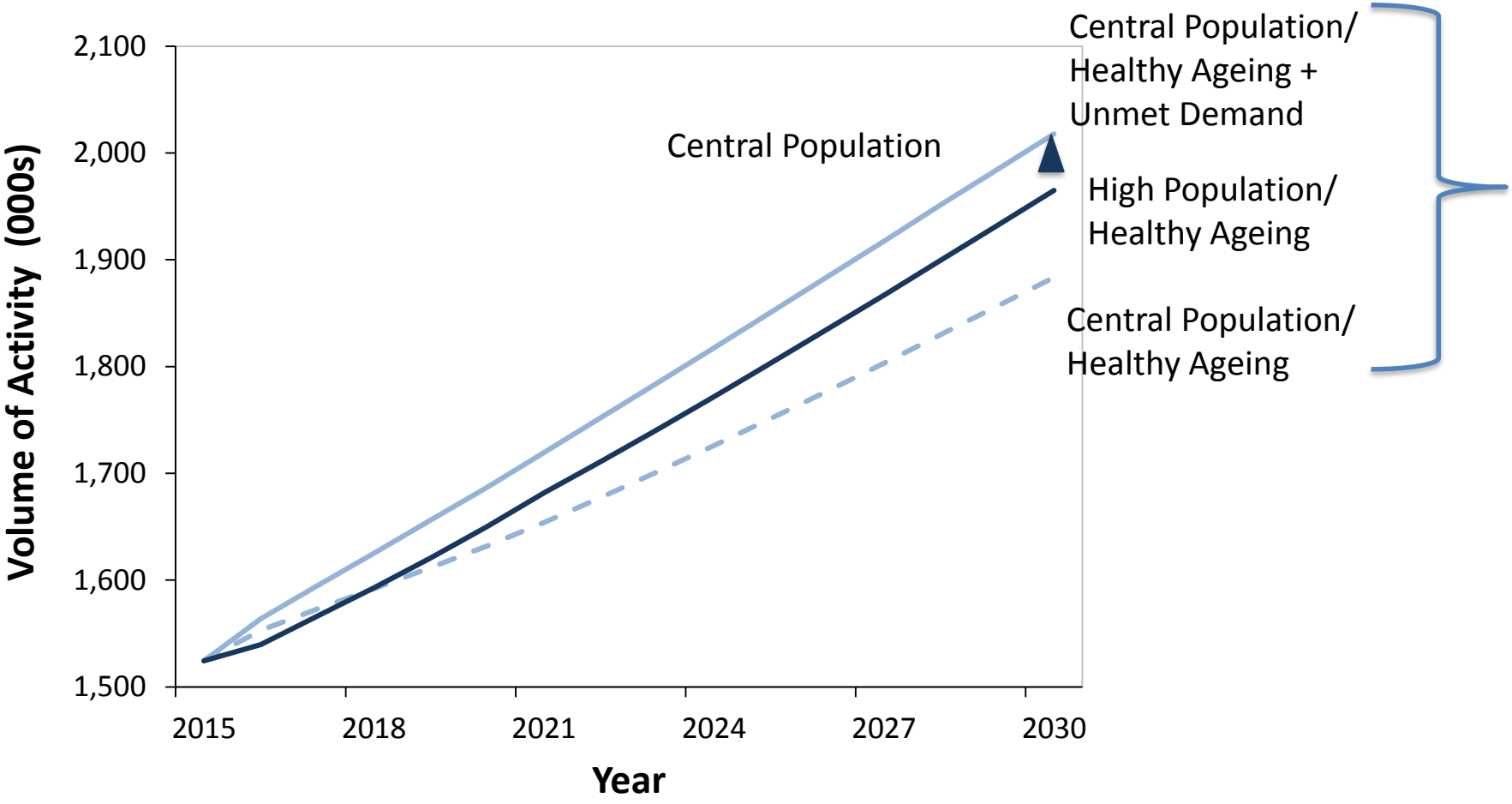


Developing a Projection Range

- For each service we develop a range of preferred demand projections
- Each projection scenario applies alternative assumptions about
  - Projected population growth
  - Healthy ageing
  - Unmet need and demand, if available
- Assumptions are evidence-based but there remains uncertainty
- The range of these projections reflects the element of uncertainty about underlying assumptions

Developing a Projection Range –

Public hospital discharges



Findings – Current Use of Services and Projected Demand

Selected Findings, Healthcare Use, 2015

Sector	Activity measure	Volume of activity 2015 '000s
Public hospitals	Inpatient cases	514
	Day patient cases	1,010
	Inpatient bed days	3,273
	ED attendances	1,138
	Outpatient attendances	3,299
Private hospitals	Inpatient cases	133
	Day patient cases	459
	Inpatient bed days	613
General practice	GP visits	17,551
	Practice nurse visits	5,944

Selected Findings, Healthcare Use, 2015

Sector	Measure of healthcare use	Volume of activity 2015/end 2015 '000s
Long-term care	Residents/places	29
	LTC bed days	10,580
Home care	Home help service	66
	Home care package recipients	15
	Home help hours	14,311
Community Nursing and Public Community Therapy	Public health nurse visits	1,362
	Public physiotherapist visits	760
	Public occupational therapist visits	347
	Public speech and language therapist visits	147

Demand Projections, 2015-2030

Sector	Measure of healthcare use	Projection Range % increase 2015 to 2030	
Public hospitals	Inpatient cases	24	30
	Day patient cases	23	29
	Inpatient bed days	32	37
	ED attendances	16	26
	Outpatient attendances	21	30
Private hospitals	Inpatient cases	20	25
	Day patient cases	24	28
	Inpatient bed days	28	32
General practice	GP visits	20	27
	Practice nurse visits	26	32

Demand Projections, 2015-2030

Sector	Measure of healthcare use	Projection Range % increase 2015 to 2030	
Long-term care	Residents/places	40	54
	LTC bed days	40	54
Home care	Home help service	44	57
	HCP recipients	44	66
	Home help hours	38	54
Community Nursing and Public Community Therapy	Public health nurse visits	26	35
	Public physiotherapist visits	24	30
	Public occupational therapist visits	33	38

Conclusions and Policy Implications

Conclusions

- Rapid Irish population growth unusual, major driver of demand
- Growing numbers of older people major driver even if optimistic healthy ageing
- Annual average projected demand growth of 1-3%
- In the context of rising population and labour force

Future Research

- Current HIPPOCRATES projections assume no change to models of care
- But reform may change where some care is supplied
- To inform planning for health and social care services evidence required on:
  - Substitution of care e.g. from hospitals to community or long-stay settings
  - Design of healthcare reforms
- Future developments of the HIPPOCRATES Model and topics for Session 2

Policy Implications

- Major implications for capacity planning, capital investment, workforce planning and training
- Reform that lessens projected demand increases in one setting will led to greater than projected demand increases in others
- Capacity and supply will need to increase in all sectors to avoid increased unmet demand
- The healthcare system is currently within this projection period and experiencing these pressures

DISCUSSION

Available at:

http://www.esri.ie/publications/projections-of-demand-for-healthcare-in-ireland-2015-2030-first-report-from-the-hippocrates-model/