

Drivers of Future Mortality Improvements in Europe

Longevity 21, Rome

9 September 2026

- Introductions
- Increasing life expectancy in Europe
- Drivers of historical life expectancy gains
- Expert insights into future life expectancy
- Key drivers
- Socio-economic differences
- Scenarios
- Game changers
- Reinsurer perspective



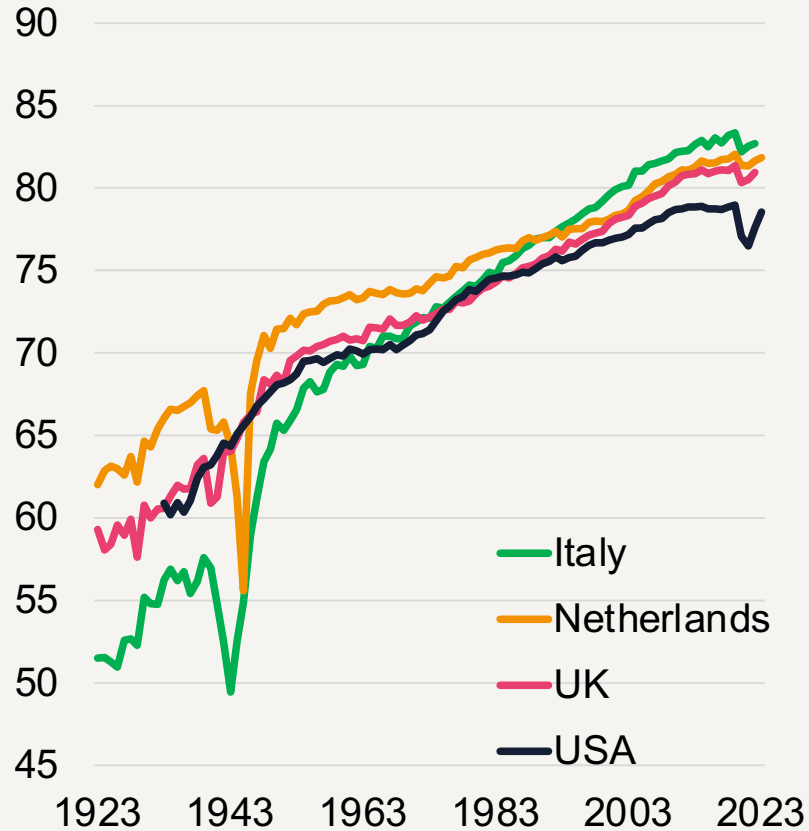
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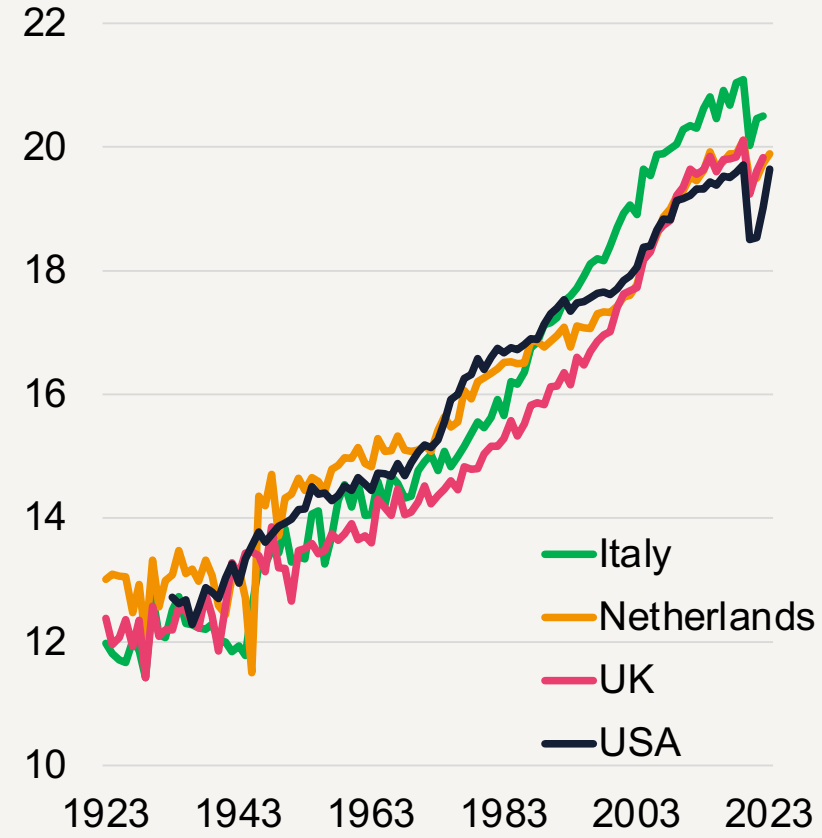
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Unisex period life expectancy across select European countries and the USA

At birth



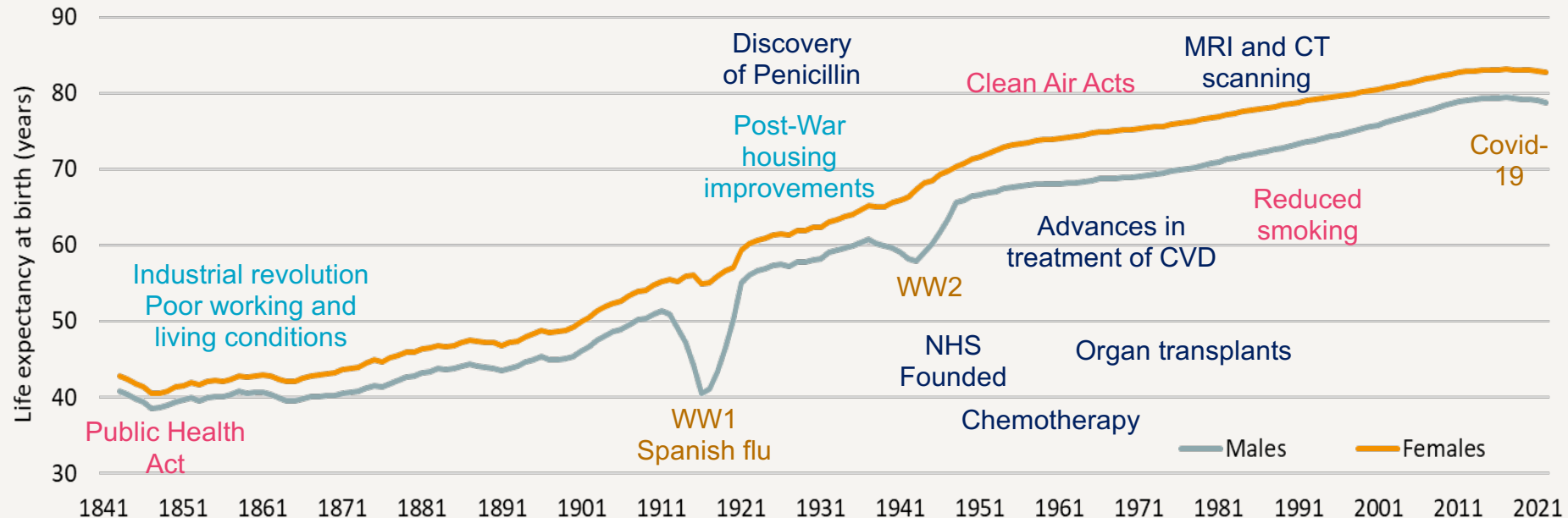
At age 65



Insured populations typically have longer life expectancies

Drivers of changing life expectancy

Recap of historical changes in England & Wales



Healthcare advancements	Public health initiatives	Socioeconomic conditions	External factors
<ul style="list-style-type: none"> Foundation of NHS Antibiotics / vaccines Diagnostics (e.g. MRI) Less intrusive surgery New drugs e.g. statins 	<ul style="list-style-type: none"> Smoking Air and water quality Obesity Vaccination programs Mental health 	<ul style="list-style-type: none"> Improved housing, sanitation, nutrition Changes in the workplace 	<ul style="list-style-type: none"> World wars Pandemics Tech (e.g. mobile phones) Climate change

Forming a view on the future

Running a structured Delphi process to establish how mortality rates are likely to evolve over the short to medium term and reach some consensus on the key drivers



Structured processes capture the views of a range of experts:

- Actuaries
- Epidemiologist
- Doctors (multiple specialities)

How and why will mortality rates change for different:

- Age groups
- Sexes
- Socioeconomic groups
- Drivers
- Major causes of death

Processes split across multiple rounds:

1. Experts complete surveys independently
2. Results analysed and shared with panel
3. Meet to share views, discuss and challenge
4. Experts independently confirm final views

- Draw out a central view and tail risks
- Inherently subjective, though process designed to mitigate subjectivity and bias
- There could be new drivers of longevity where we do not currently have visibility (the “unknown unknowns”)

LCP Health supports global pharma and biotech clients with market access strategy consulting, health economic modelling and scientific data analysis to develop new medicines and make them available to patients



UK

- Delphi – summer 2025
- Panel of experts with diverse expertise from within LCP Health and Actuarial teams
- Particular focus on:
 - i. **All cause mortality**
 - ii. **Drivers**
 - iii. **Socio-economic groups**
 - iv. **Upside scenarios**



Netherlands

- Delphi – autumn 2024
- Panel of experts with diverse expertise from within LCP Health and Actuarial teams
- Four additional health experts living and working in the Netherlands
- Particular focus on:
 - i. **All cause mortality**
 - ii. **Major causes of death**
 - iii. **Upside and downside scenarios**



Other countries

- Consider **how and why key drivers may differ** in other countries
- For example, GLP-1s
Countries differ in how obesity is primarily viewed:
 - i. **lifestyle issue**
 - ii. **chronic medical condition**
- Different healthcare systems
- Different levels of obesity
- Different costs and access, e.g. Semaglutide now off-patent in Canada

Summary of indicated impacts of future life expectancies

Driver	Summary of findings
Cancer diagnosis / treatment	Improved diagnostics, better drugs/treatment and healthier lifestyles
GLP-1 medications	Significant optimism, particularly for younger ages and higher socio-economic groups, but could take time for the mortality benefits to come through
Artificial Intelligence	Very little life expectancy benefit for current pensioners in the next decade – tangible benefits realised later
Other medical advances	Medical advances primarily expected in rare diseases, giving minimal change to life expectancies across wider population
Developments in anti-ageing research	Positive developments may start to emerge in the second decade
Direct impacts of climate change	No material mortality impact expected, especially in the first decade. Net positive benefit for temperate countries in the short term?
Anti-microbial resistance	Increasingly few effective antibiotics – but could this be resolved quickly if pharma companies were incentivised to develop a solution?
Ageing population, health funding and wider economic	Healthcare funding not expected to keep up with demand (due to aging populations, rising healthcare utilisation and costs)

Increasing LE
Decreasing LE



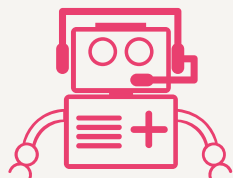
Key driver: Cancer developments



Cancer outcomes likely to improve steadily over the next two decades

- Three key areas driving improved outcomes:
 - Improved diagnostics
 - Better drugs and treatments
 - Healthier lifestyles
- Anti-obesity medications may improve cancer **prevention**
- Continued advances in **screening and early diagnosis**. New diagnostic tests and biomarker development are seen as transformational
- Immunotherapies, cell and gene therapies and targeted **treatments** to continue advancing – cancer treatments make up the largest proportion of large clinical trials currently underway
- Moderna's personalised mRNA therapy for skin cancer is a recent example
- But **revolutionary breakthroughs** in cancer treatment **unlikely** to occur





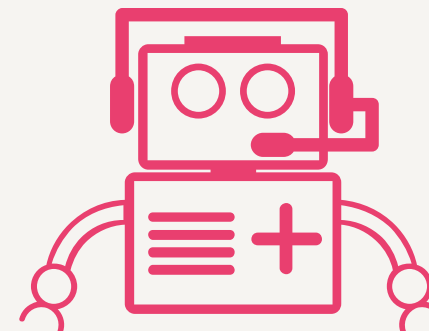
Key driver: Artificial Intelligence



*Impact of AI expected to be modest in the short term –
prospects over the long term could be material*



- **Drug discovery:** decision making and increased efficiencies with regulatory work could reduce the time frame for drugs reaching the market.
- **Diagnostics:** AI is already having a tangible impact, e.g. mammography and coronary angiography. AI offers a quick and accurate assessment. Single clinician can review, reducing the need for second opinions.
- Practical barriers to **implementation** – such as regulation and reimbursement
- Key challenge is not progress of AI, but successful **adoption**





Key driver: *Anti-obesity medicines*



Anti-obesity medications will positively impact life expectancy

- GLP-1s and wider Anti-obesity medication (“AOMs”) could have a significant impact in the short term
- Relevant for **prevention and treatment** of obesity, diabetes and cardiovascular disease, and potentially liver disease, cancer and Alzheimer’s
- Access and adoption remains limited in many countries so benefits may only be seen in high-risk populations in the short term
- **Oral treatments** will change the landscape, with some products now available
- AOM’s might become as common as statins over next two decades
- Funding is a barrier – variation across geographies as drugs lose **patents** at different times
- Caution over whether dosage needed to be maintained for benefits to be preserved
- Social acceptance may differ across geographies (e.g. USA)



GLP-1s consistently given as the most likely reason why mortality rates might unexpectedly improve faster than expert’s central assumption

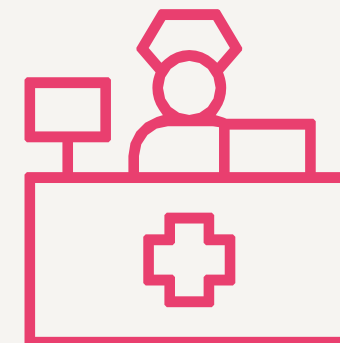


Key driver: Healthcare system funding



Impacted by political and economic outlook and aging population – collectively, the key negative drivers over the next two decades

- Healthcare systems need more funds to keep up with the demand of an **aging population** and rising cost
- Concerns about whether necessary funds can be made available
- Italy is the EU's oldest country with 1-in-4 Italians now aged 65 plus
- Modernisation and efficiencies may not be achievable at the pace required
- Countries may be impacted to a different extent due to alternative healthcare funding models
- Different public attitudes and expectations around healthcare use
- Second order impacts of ageing population may include:
 - inability to raise sufficient taxes to pay for public services
 - political instability from increased demand for services



More affluent groups have experienced faster improvements

Comparing an affluent subset to the general population

Example drivers that may widen inequality

- Affluent groups may benefit more from new treatments
- Affluent groups may have more access to specialist treatments
- Funding shortfalls in public health may widen disparities
- Early GLP-1 uptake expected to differ by socio-economic status, particularly among men

Example drivers that may narrow of inequality

- Public health measures focussed on more deprived groups
- Cancer related improvements may be relatively evenly distributed
- GLP-1s ultimately more impactful for groups with higher obesity prevalence
- Later smoking cessation means least affluent may catch up on CVD and lung cancer gains

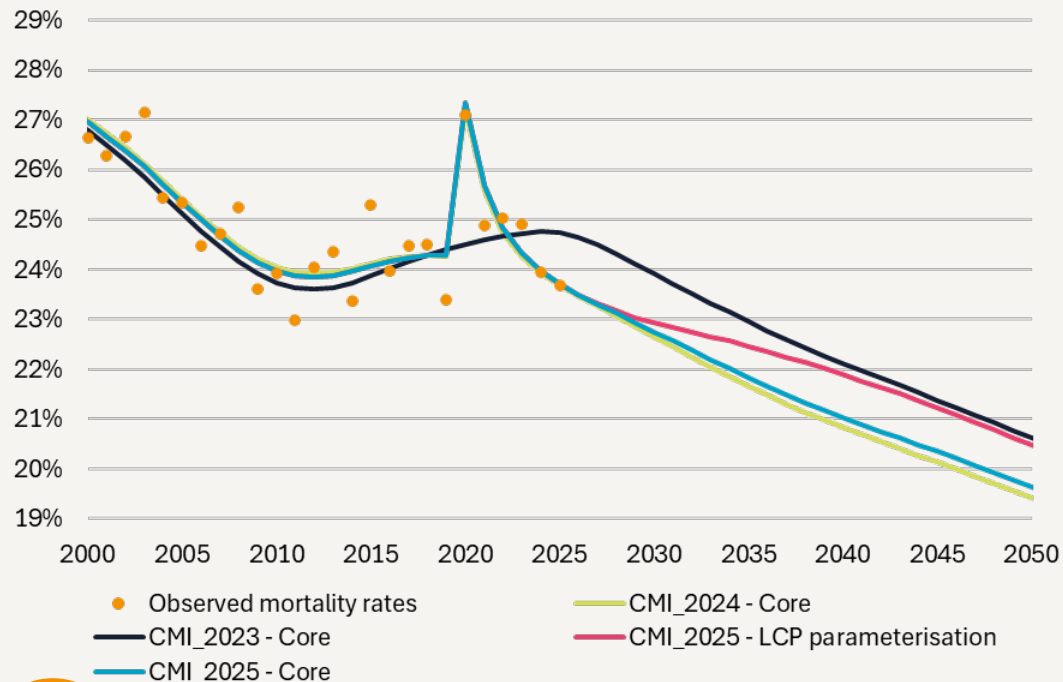


A key question addressed was whether the gap would continue to widen?

A selected high-level finding

Delphi process suggested old-age mortality more in line with CMI_2023

**Unisex mortality rates in England & Wales, ages 90-100
(age standardised)**



Expert insights suggest mortality improvements at the oldest ages in the UK will be similar to those seen in the pre-pandemic decade, i.e. limited improvement for the next 10 years

This contrasts with the core CMI_2025 projection that gives immediate mortality improvements at this age

The CMI model is very flexible and can be parameterised to express this view



Since all members have some probability of reaching old age, changing the mortality improvements at older ages impacts life expectancies at all ages



Success of GLP-1s

Overview

Assume the impact of GLP-1s is double that suggested by our panel

Potential reasons this could happen?

- GLP-1s become widely available through public and private healthcare providers and can be prescribed indefinitely
- GLP-1s become increasingly affordable and socially acceptable, leading to high take-up and adherence
- Secondary health benefits of GLP-1s are greater than expected leading to modest anti-aging outcomes at a population scale

What is could mean for life expectancies

- Further increase to life expectancies compared to the central Delphi estimate – still within typical longevity capital allowance

“Game changers”

Central case is that no “game changers” will lead to significant changes in pensioner life expectancies over the next two decades

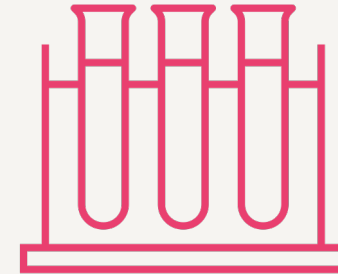
Wonder drugs

New drugs take years to move from concept to market to life expectancy impact

Unlikely any drugs currently in development lead to material, population-wide near-term gains in longevity

Disease-specific gains are more plausible

The most plausible route is via an existing drug being repurposed, e.g. GLP-1s



Longevity science and anti-aging

Longevity science is attracting increasing interest and funding

Not expected to have material impact on population life expectancies over next two decades

The challenge is the implementation lag to move from proof of concept to widespread adoption

Further research and modelling explore likelihood and impact of extreme scenarios

Reinsurer perspective



Why we worked with LCP



Access to specialised medics active in our main regions (e.g. UK, USA, Netherlands)



Additional insights into drug approvals and healthcare system funding



Independent perspective



Efficient resource management and internal project prioritisation

Limitations of the project

Working with LCP was not intended to, and did not, impact on our own best estimate view

Individual medics may only see one piece of the puzzle (although panel format helps mitigate this)

Panel exercises produce a subjective snapshot in time

Translating medical views into actuarial implications for mortality improvements is not straightforward (e.g. cohort effects, short vs longer term, general population vs insured book)

LCP's experience of integrating medical insights was helpful in this regard

Conclusions

Scenario analysis: valuable input for scenario analysis and sensitivity testing (e.g. 1-in-100, 1-in-500 shocks, specific driver-based scenario tests)

Detailed research: useful deep-dive supplemental research available (e.g. topics such as GLP-1s, AI in pharma and healthcare)

Comparison to inforce book: Our inforce book is biased towards older (retired) lives, which dilutes the potential impact of some recent developments. Certain medical advances most likely to benefit younger lives

Diversification: Global reinsurers benefit from well-diversified risks and this is an important protection from higher than expected future mortality improvements

Overall, the project provided us with a credible independent view to compare against our central basis and provide valuable insights into alternative future scenarios

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