

Never too late

Prevention in an ageing world

Health and care

Carers

Community

Inequalities

Diseases and Conditions

Retirement

Prevention

Social care

Acknowledgements

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1 Executive summary

We know that prevention works, and the costs of failing to act are considerable, but for too long preventative services in health have been the first to be cut and last to receive investment.

In an ageing world this needs to change. We need investment in prevention right across the life course.

We know that our societies are ageing, but people are not necessarily living well for longer.

Preventative interventions work, they are often highly cost-effective and can bring significant social and economic benefits. But we're still failing to prioritise prevention right across the life course.

Too often ageist assumptions lead us to passively accept that with longer lives comes ill health. But many conditions are preventable, and even where they are not, there are things that we do can to make the difference between living well and not.

In 2019, ILC-UK launched a global programme, *Prevention in an ageing world*, to make the case for prevention in healthcare systems and to galvanise action to embed preventative approaches across the life course.

Healthcare systems alone cannot fix our health. There are wider political, social, economic and cultural factors that impact on health. Tackling the social determinants of health requires wide-reaching policy change. We do not discount the importance of addressing these.

However, in this report we focus on the role that healthcare systems can play in moving upstream of the diseases that can affect our later lives, proactively supporting people to age well, through well-targeted interventions in mid and later life.

We have explored trends and future projections for a small number of preventable non-communicable and communicable diseases (cardiovascular disease, type 2 diabetes, lung cancer, HIV and influenza (flu)) among people aged 50 and over in better off countries.* We have done this to illustrate the scale of the costs and of the potential opportunities associated with prevention across the life course.

Of course, there are many other conditions that also profoundly affect our later lives, not least mental health conditions and dementia. While not the subject of our analysis, it is clear that we also need to invest in action to prevent, or reduce the impact, of these conditions.

ILC-UK analysis shows that in 2017:

27.1 million years were lived with disability due to largely preventable conditions

In better off countries, among those aged 50 or over, the number of years lived with disability per 100,000 people as a result of cardiovascular disease, type 2 diabetes and lung cancer rose by nine per cent between 1992 and 2017 to some 6,460 years. It is forecast to rise by 17 per cent between 2018 and 2042.

* Better off countries refer to those countries identified as 'High SDI' and 'High-Middle SDI'. This refers to a social development index, which is a summary measure of socio-demographic development which allows for effective comparison between countries. It combines income per person, educational attainment and total fertility rate to reach a comparable index.

We have also estimated the productivity loss associated with these conditions among employees aged 50-64 years in better off countries.

We estimate that the yearly productivity loss is:

649 billion USD as a result of non-communicable diseases

This is comprised of:

390 billion USD as a result of cardiovascular disease



250 billion USD as a result of type 2 diabetes



9 billion USD as a result of lung cancer



We estimate that the yearly productivity loss for the two communicable diseases we have examined is:

39 billion USD
for flu



4 billion USD
for HIV



We know the action that is needed – in different countries around the world we have identified examples of good practice where healthcare systems are investing in programmes to promote good health and avoid or limit the impact of preventable disease right across the life course. But too many of these interventions have yet to spread from one country to the next.

The health and economic costs of failing to invest in preventative interventions ought to be too great to ignore. So why are we still seeing under-investment in prevention?

To better understand this, ILC-UK has undertaken a programme of global engagement with political leaders, policymakers, practitioners and academics about what needs to happen for us to see a shift towards prevention across the life course.

From this work we have identified five vital pre-conditions for action on prevention. These are:

- 1 Political, institutional and organisational commitments to prevention.**
- 2 New ways of working and new types of relationships between healthcare professionals, and between individuals and healthcare professionals.**
- 3 The democratisation of access to prevention.**
- 4 Action to inspire and engage people, policymakers and professionals with the prevention agenda.**
- 5 A considered approach to the role of technology – which is an important, but not the only, solution to promoting prevention.**

The social and economic costs of failing to act are too great to ignore. Now we need to see action.

Prevention in an ageing world

As part of the *Prevention in an ageing world* programme, ILC-UK has:

Hosted or participated in sessions at the following events:

May 2019:

72nd World Health Assembly side event (Geneva, Switzerland)

September 2019:

79th FIP World Congress of Pharmacy and Pharmaceutical Sciences (Abu Dhabi, United Arab Emirates)

October 2019:

G20 Health Ministers meeting side event (Okayama, Japan)
11th IAGG Asia/Oceania Regional Congress (Taipei, Taiwan)

November 2019:

52nd Australian Association of Gerontology (AAG) conference (Sydney, Australia)
Gerontological Society of America conference (Austin, USA)

Engaged with stakeholders from:

Governments

Australia: New South Wales Health
Canada: Public Health Agency
Canada: Representatives from the Canadian Embassy Japan
Japan: Ministry of Health, Labour and Welfare
Singapore: Ministry of Health
USA: Department for Health and Human Services
USA: Public Health Service
UK: Department for Health and Social Care
UK: Department for International Trade
UK: Foreign and Commonwealth Office

Intergovernmental organisations

European Commission Public Health Directorate
Organisation for Economic Co-operation and Development
UN Interagency Taskforce on Noncommunicable Diseases
World Health Organization

Civil society organisations

American Pharmacists' Association
Australian Prevention Partnership Centre
Age International
Chatham House (UK)
Health and Global Policy Institute (Japan)
International Council of Nurses
International Federation on Ageing
International Pharmaceutical Federation
NGO Committee on Ageing
Royal Pharmaceutical Society (UK)
16 ILC Global Alliance Members

Published:

Prevention in an ageing world (launch publication) (May 2019)

Lost time: Productivity and the flu (December 2019)

ilcuk.org.uk/prevention-in-an-ageing-world/

2 Introduction

Across the globe, societies are getting older. People are living longer, but many are not living in good health.

Too many lives are blighted by the impact of long-term conditions, and many suffer the burden of preventable disease: both communicable and non-communicable diseases are limiting people's health and wellbeing. The costs of this avoidable ill health are significant, with considerable impact upon individuals and families, healthcare systems, and wider economies.

As our societies age, we need to support people to live healthier lives for longer. By doing so, we can not only improve wellbeing and enable people to remain active, but also reduce dependency and pressures on healthcare systems.

Prevention is valuable. It has the potential to:

- **improve the health and wellbeing of society.**
- **be broadly cost-effective.**
- **contribute to healthcare system sustainability in the long term.**
- **bring benefits that extend beyond healthcare systems,** including to economies, by helping people continue to work and consume in later life – helping societies to realise a 'longevity dividend'.

However, for these social and economic benefits to be realised, we need to reorient our healthcare systems towards prevention. If we do not, we will face damaging and unsustainable costs to individuals, communities and our economies.

Prevention in an ageing world

In May 2019, ILC-UK launched a global programme, *Prevention in an ageing world*, to make the case for increasing the focus on prevention in healthcare systems across the globe.

To understand the case for change, and the potential benefits of embedding prevention across the life course, we have been exploring the trends and future projections in a small number of preventable non-communicable and communicable diseases – cardiovascular disease, type 2 diabetes, lung cancer, HIV and influenza (flu) – among people aged 50 and over in better off countries*. We have also estimated the impact of these diseases on productivity.

A report, *Lost time: productivity and the flu*¹, has already been published as part of this work and a summary of its findings is included here.

Alongside our research, we have been engaging with political leaders, policymakers, practitioners, academics and other stakeholders across the globe to galvanise action to embed preventative approaches across the life course.

The focus of this report

This report examines the role healthcare systems play in prevention among those aged 50 and over.

Efforts to promote health and wellbeing need to extend right across the life course – and that means early intervention even before we are born. However, too often our prevention efforts are focused on these early years of life,

* Better off countries refer to those countries identified as 'High SDI' and 'High-Middle SDI'. This refers to a social development index, which is a summary measure of socio-demographic development which allows for effective comparison between countries. It combines income per person, educational attainment and total fertility rate to reach a comparable index.

to the neglect of promoting health and wellbeing among people in later life. But there is much we can do to reduce the risks and impacts of preventable diseases throughout our lives, including through vaccinations, other medical interventions, and advice and guidance in mid and later life. In an ageing world we cannot afford to miss opportunities to improve our health in the second half of our lives.

Of course, our health in later life is dependent on a wide range of factors far beyond the remit of healthcare system. The so-called 'social determinants of health'*** have a profound impact. Poor planning and urban design, and inadequate transport systems that do not take account of the needs of older people, also contribute to whether people can live and age well. Age-discriminatory attitudes and practices can hold people back in work and in our communities. And the choices individuals make – around what they eat and drink and how much exercise they do – matter, and are heavily influenced by the environments and circumstances in which we live.

Healthcare systems alone cannot fix our health. Nor can preventing ill health be left solely to individuals without recognising the wider political, social, economic and cultural factors that affect the decisions people make. Tackling the social determinants of health is vital and requires action by policymakers across the spectrum of decision making.² There is also a need to address the inequalities that contribute to poor health, through collaboration across the public and private sectors and with civil society.

However, healthcare systems must play their part. There are well-evidenced preventative interventions that can play a vital role in reducing the burden of ill health and we must ensure that these are available right across the life course.

***'Social determinants of health' refers to the wider conditions (physical, social and economic) that people experience throughout their lives that have an impact on their health.

Preventative interventions include:

- **Targeted screening programmes** to identify a disease early or to identify those at risk of developing a specific disease.
- **Preventative medications**, such as statins to prevent cardiovascular disease.
- **Supporting people to adopt healthier lifestyles**, including stopping smoking, or increasing levels of physical activity.
- **Vaccinations against communicable diseases**.
- **Supporting people to manage long-term conditions** in ways that improve their wellbeing and help them to enjoy longer, more active lives.

The analysis presented in this report focusses on a small number of communicable and non-communicable diseases where data is readily available and where preventative interventions by healthcare systems could make a real difference to people's health and wellbeing. These are cardiovascular, lung cancer, type 2 diabetes and HIV. We also consider the case of flu, although here data is not always comparable.

There are many other diseases that will impact upon our ageing world. Non-communicable and communicable diseases, such as dementia and pneumococcal disease, will also affect the lives of many. The World Health Organization (WHO), for example, has forecast that by 2050, 152 million people in the world will have dementia.³ And in the US and Europe the WHO has estimated that pneumococcal disease affects between 10 and 100 people per 100,000.⁴ The figures we present in this report are, therefore, not exhaustive. However, in presenting a snapshot of the potential burden and cost of our selected diseases we hope to provide a powerful illustration of the scale of the impact of inaction, and the potential benefit of a more concerted shift towards prevention in our healthcare systems.

As well as assessing the future burden of our snapshot diseases, we also consider their impact on productivity. Many factors impact on labour productivity, with health being just one of them, and there are strong correlations between rates of ill health and reduced productivity.

As the number of years lived with disability grows over time, so will the costs associated with productivity loss unless prevention becomes central to our healthcare systems.

Of course, another way to improve productivity in an ageing society will be to ensure that people with long-term conditions are more effectively supported to enter and remain in the workforce. Efforts to age-proof our workplaces and employment structures must therefore run alongside efforts to prevent ill health in later life.

However, prevention is key. And the good news is that there is already significant evidence around the impact of preventative interventions in mid and later life.

Throughout this report we include brief overviews of interventions implemented in healthcare systems around the world. The majority are examples of what is usually referred to as 'primary' (stopping conditions from developing) or 'secondary' prevention (detecting conditions and stopping them from getting worse), however we also include examples of 'tertiary' prevention (seeking to reduce the symptoms of particular conditions and to improve people's wellbeing). All have the potential to help people to live well for longer.

As this cross-section of case studies demonstrates, effective preventative interventions take many forms – from simple questionnaires which support people in identifying health risks and acting to address them; to programmes to extend the roles of healthcare professionals, such as pharmacists and practice nurses, to support health promotion and undertake preventative interventions; through to large-scale programmes to change the way diseases are managed or to develop new specialised care for at-risk groups of people.

Some involve significant reconfiguration of organisational structures and relationships. Others demonstrate that prevention does not have to be costly or rely on headline-grabbing technological advances. Small-scale, low-cost actions can also yield significant results. Ensuring that preventative interventions are evaluated and those found to be effective are widely disseminated will be important for improving prevention outcomes around the world.

Growing policy recognition of the need for prevention

There is a growing policy focus on ageing societies – but for too long this has emphasised the challenges associated with poor health in later life, rather than also exploring the opportunities of ageing.

A focus on the so-called 'dependency ratio' (a measure of the proportion of society made up of adults of working age as compared to adults over a certain age normally associated with retirement/receipt of state pensions) has led to an unhelpfully defeatist narrative about what it means to live in an ageing world.

However, in recent years we have seen the emergence of a new recognition that longevity could boost our economies – that we may be able to reap a 'longevity dividend' – if we are able to support people to live well and to remain active and contributing citizens for longer. To do this we will need to extend the period of our lives that is spent in good health, free from disease and disability. Prevention, therefore, holds the key to unlocking the longevity dividend.

In line with this increasing recognition of the need to act in the face of ageing, we have seen growing focus on the need to shift healthcare systems towards prevention.

In 2011, the *United Nations' Political Declaration of the High-level Meeting of the General Assembly on the Prevention and Control of Non-Communicable Diseases* (NCDs) committed to scaling up prevention. And in 2013 the WHO's *Global Action Plan for the Prevention and Control of NCDs 2013-2020*, included the voluntary target agreed at the World Health Assembly (the WHO's decision-making body) of a 25 per cent reduction in rates of premature mortality as a result of non-communicable diseases by 2025.

More recently, the WHO has declared 2020-2030 the Decade of Healthy Ageing, where the focus is on improving the lives of older people and their communities. It is an ambitious agenda, and one that requires institutions and organisations from across society to work together.

In 2019 we saw a strong commitment from G20 leaders and health ministers to addressing prevention across the life course.

We will promote healthy and active ageing through policy measures to address health promotion, prevention and control of communicable and non-communicable diseases [...]

June 2019 – G20 Osaka Leaders' Declaration⁵

We will promote the prevention, control, and management of communicable and non-communicable diseases and to promote health by implementing policy measures including raising awareness about healthy lifestyle and health literacy [...] over the life course.

October 2019 – the Okayama Declaration of Health Ministers⁶

Yet, despite the ongoing public and political support for prevention, including the development of national and sub-national strategies by many governments, there is still a gap between rhetoric and action.

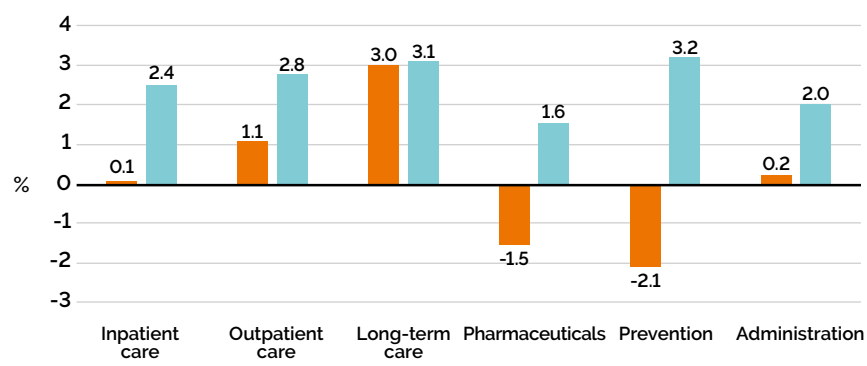
Prevention spend

The oft-repeated commitments to prevention are not consistently being translated into action. Prevention often bears the brunt of cuts to health spending.

Of course, spending is an incomplete measure of a government's commitment to prevention, because the cost of preventative interventions can vary significantly between countries, as can what is included under the 'prevention' heading. Furthermore, many of the best preventative interventions come without large price tags. However, trends in prevention spending paint a picture – and recent trends suggest a worrying complacency and demonstrate the gap between intent and action.

Across OECD (Organisation for Economic Co-operation and Development) member countries, prevention spending accounts for, on average, only 2.8 per cent of total healthcare spending.⁷ While prevention spending grew at the fastest level in relation to other health spending in OECD member countries between 2013 and 2017, this needs to be seen in light of the cuts prevention experienced between 2009 and 2013.⁸

Figure 1: Annual growth in health expenditure for selected services (real terms), OECD average, 2009-13 and 2013-17



Source: OECD (2019) 'Annual growth in health expenditure for selected services (real terms), OECD average, 2009-13 and 2013-17', *Health expenditure*, OECD Publishing, Paris, doi:10.1787/996c5659-en

■ 2009-13
■ 2013-17

As a 2017 OECD report into prevention spending noted:

- **Prevention bore the brunt of cuts in healthcare spending during the financial crisis.** Despite the increased post-crisis expenditure, over the longer term prevention spending in OECD member countries as a share of overall healthcare spending has remained relatively stable at between two and four per cent, suggesting a 'surprisingly low level of investment'.
- **Not all prevention spending is on effective measures.** Despite demonstrating cost-effectiveness or even cost-savings, immunisation and screening programmes (for all age groups) amounted to less than 20 per cent of prevention expenditure, on average.⁹

As we demonstrate in the analysis presented in subsequent sections of this report, failure to invest in prevention will bring substantial social, health and economic costs. In an ageing world, complacency on prevention is a luxury we can no longer afford.

Global action on prevention

There are examples of inspiring action on prevention right across the globe. The challenge ahead of us is to see these practices spread so that no matter where we live we are supported to age well.

Heart icon page 46, 65

Hand icon page 31, 65

Lung icon page 65

Flu icon page 65

HIV icon page 65

Lung icon page 33, 50, 62

Flu icon page 37

HIV icon page 40

UK

Finland

Hand icon page 31

Netherlands

Lung icon page 33

Canada

Belgium

Heart icon page 65

Hand icon page 65

Lung icon page 33, 65

Flu icon page 65

HIV icon page 65

USA

Heart icon page 29, 63, 65

Hand icon page 63, 65

Lung icon page 33, 65

Flu icon page 65

HIV icon page 40, 65

Brazil

Hand icon page 48

Portugal

Flu icon page 37

Australia

Heart icon page 26

Hand icon page 26

Lung icon page 26

Flu icon page 26

HIV icon page 26

Key

Heart icon Cardiovascular

Hand icon Type 2 diabetes

Lung icon Lung cancer

Flu icon Flu

HIV icon HIV

Trends

Our ageing world

The world is ageing. Between 2019 and 2050 the proportion of those aged 50 and over will **increase by 11% in better off countries: from 35% to 46%.**



This change in the age profile of societies presents economic, social and healthcare challenges and opportunities. If we can build stronger, more resilient and inclusive societies, and help people not only to stay well but to flourish, the opportunities are enormous.

The recent ILC-UK report, *Maximising the longevity dividend*, revealed that older people make a significant contribution to the UK economy.

- **People aged 50 and over make up an increasing share of the UK workforce**, rising from 26% in 2004 to 32% in 2018, and are forecast to make up an estimated 37% of the UK workforce by 2040.¹⁰
- **People aged 50 and over are responsible for an increasing share of consumer spending in the UK** – from 54% in 2018 to an estimated 64% of consumer spending in 2040.¹¹

And these findings are backed by wider research. For example, a 2018 European Commission report highlighted that the 'silver economy' (those goods and services targeted at meeting the needs of older people) in the European Union was the third biggest economy in the world (behind only China and the USA).¹²

However, we will only realise the economic and social opportunities of ageing if we can ensure that longer lives are also healthier lives.

Understanding the burden of age-related disease

In this report ILC-UK presents analysis of the increasing numbers of years lived with disability that are projected to result from certain health conditions in future years.¹³

We have used the measure of years lived with disability rather than also incorporating premature deaths, because we wanted to focus our analysis on the impact of ill health on people's lives – and the loss of potential in our societies due to people living in less than ideal health.

Non-communicable diseases: past trends and future projections

In this report, we examine three non-communicable diseases: cardiovascular disease, type 2 diabetes and lung cancer.

We have selected these diseases as they are considered to be widely preventable, are the subject of readily available data, and have a significant impact on older adults.

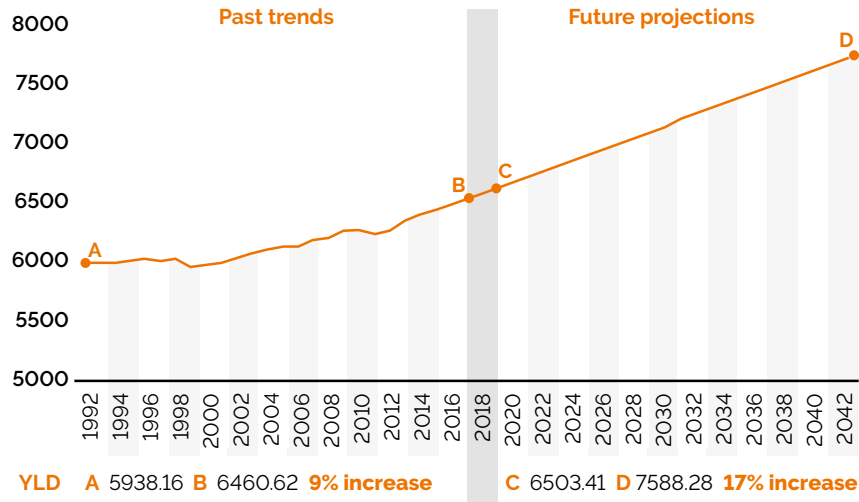
Although the data is presented for each disease individually, in reality many people in later life live with more than one condition (comorbidities). Often having one disease can leave people more at risk of developing other diseases, and people with multiple conditions can have much worse health outcomes, and more complex health needs.

Similarly, many preventative interventions are effective across a range of conditions. For example, the WHO estimates that, globally, we could prevent some 75% of type 2 diabetes, stroke and heart attacks, and 40% of cancer by eliminating the major common risk factors for non-communicable diseases, such as obesity, a lack of exercise and smoking.¹⁴ And flu vaccination has been shown to reduce the rate of hospitalisation and death among those with other long-term conditions, such as cardiovascular disease and type 2 diabetes.¹⁵

ILC-UK analysis shows that:

- in 2017, 27.1 million years were lived with disability due to largely preventable diseases.
- rose by 9% between 1992 and 2017 to some 6460 years.
- is forecast to rise by 17% between 2018 and 2042.

Figure 2: Non-communicable diseases (cardiovascular disease, type 2 diabetes and lung cancer): past trends and future projections (1992-2042) – years lived with disability (YLD) per 100,000 people (aged 50 and over)



The scale of the impact of just these few diseases is staggering. Behind each one of these additional years lived with disability is an individual life affected by poor health with wider impacts on family and carers, and society as a whole. This is accompanied by negative economic consequences in terms of productivity losses and increased burdens on healthcare systems.

General Health Assessments: Australia

In 1999, health assessments for those aged 75 years and over were introduced in Australia following a successful large-scale trial. They are provided free of charge by a GP (sometimes with assistance from a Practice Nurse). The focus of these assessments is to evaluate older patients' health, identify health issues that are preventable or where effective interventions are available, and to improve the wellbeing of those with complex care needs. They also provide an opportunity to refer patients to medical and support services where necessary.

The health assessments are structured and in-depth. Lasting from under 30 minutes to over 60 minutes, depending on the needs of the person being assessed, they cover a wide range of areas, including blood pressure, sleeping patterns, immunisation status, medication use, and assessments of physical activity and functioning, psychological functioning and mental health, sight and hearing, nutrition, and general social functioning and support.¹⁶

Although, most people aged over 75 years have had at least one health assessment, few do so annually.¹⁷ Take-up rates are higher among people who are widowed, socio-economically advantaged women, and those who regularly visit their GP. Women in remote and rural areas were found to be less likely to participate in health assessments.

A long-term evaluation has shown that the health assessments were associated with a significant impact on both the quality of life and survival of participants, which can probably be attributed to more and better healthcare. Increasing take-up rates and frequency of the health assessment is therefore central to maximising the impact of this preventative intervention.¹⁸



Preventative interventions, screening programmes and support throughout the life course to reduce and eliminate risk factors for disease and ill health could significantly reduce the number of years lived with disability and have a profound impact on the quality of life of individuals, families and carers, while also benefiting healthcare systems and the wider economy.

Cardiovascular disease

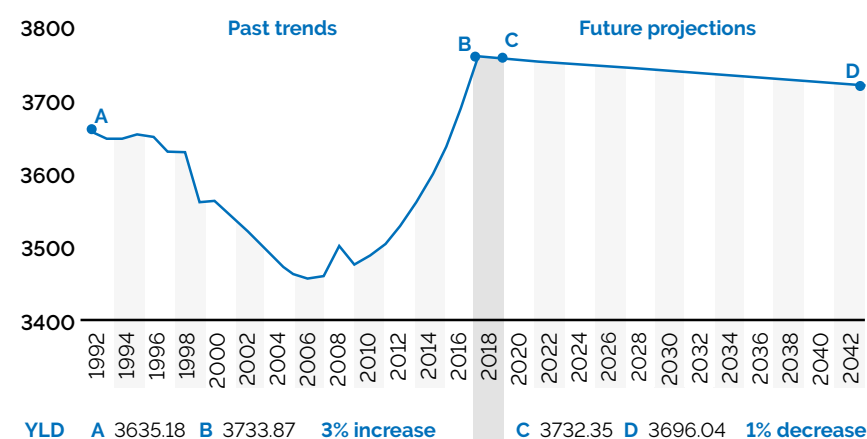
Cardiovascular disease (CVD) refers to a range of diseases, including heart disease, heart attacks, and strokes. This group of diseases is responsible for the majority of years lived with disability in better off countries among our selected non-communicable diseases.

ILC-UK analysis of cardiovascular disease in better off countries shows that among those aged 50 or over, the number of years lived with disability per 100,000 people:

- rose by 3% between 1992 and 2017.
- is forecast to decrease by 1% between 2018 and 2042.

Although any decrease is to be welcomed, this rate of progress, over 25 years, is woefully slow. And still in 2042, cardiovascular disease will be responsible for 3,696 years lived with disability per 100,000 people aged 50 and over.

Figure 3: CVD: past trends and future projections (1992-2042) – years lived with disability (YLD) per 100,000 people aged 50 and over



The WHO has suggested that some 80% of cardiovascular disease is preventable, highlighting how effective prevention across the life course could make a significant contribution to improving health and wellbeing outcomes for individuals.¹⁹

Preventative interventions by healthcare systems can take different forms. Behavioural changes, such as encouraging healthy eating and increased physical activity, can make an important contribution to reducing the risks of both cardiovascular disease and type 2 diabetes, and such changes have preventative benefits that extend beyond these two diseases. Some healthcare systems are actively seeking to support such changes through advice and guidance and the provision of activities that can reduce risk.

At the same time, screening has an important role in ensuring early identification of those at risk of, or of those who have, cardiovascular disease or diabetes. And timely medical intervention can ensure that milder forms of disease do not become more serious. For example, in the case of type 2 diabetes there is a growing focus on 'reversing' the disease, or putting it into remission through diet and exercise.²⁰ The use of statins has been shown to be effective at reducing cholesterol levels and improving cardiovascular health outcomes.²¹

Preventing the development of such diseases through early interventions, or putting in place appropriate medical support for those already with an illness, will bring not only health benefits but also wider social and economic ones.

Improving blood pressure: USA



Hypertension is associated with heart disease and heart failure, and strokes. In rural North Carolina, a preventative intervention sought to address differences between ethnic groups in the prevalence of hypertension by working both with patients and with medical practices.

525 patients, with an average age of 58 years, participated in the two-year study. Patients received monthly phone coaching that focused on addressing lifestyle factors (such as physical activity, weight control and healthy eating) as well as medication adherence. Patients were also provided with blood pressure monitors and were instructed to measure their blood pressure three times weekly.

For medical practices, the focus was on strengthening communication and behavioural change strategies. Quarterly regional dinners were held for practice staff, which covered topics including strategies for systematising care, phone coaching, motivational interview techniques and goal setting. Practices also received general quality improvement activities through monthly visits, and regular conference calls took place with representatives from all of the practices involved. Standardised care delivery templates were used by practices.

Follow-up occurred at six, 12, 18 and 24 months post-enrolment and while the study failed to reduce disparities between ethnic groups, it was successful in lowering blood pressure among participants from both ethnic groups. Early results led to the adoption of phone coaching within the region's Medicaid Network.²²

Type 2 diabetes

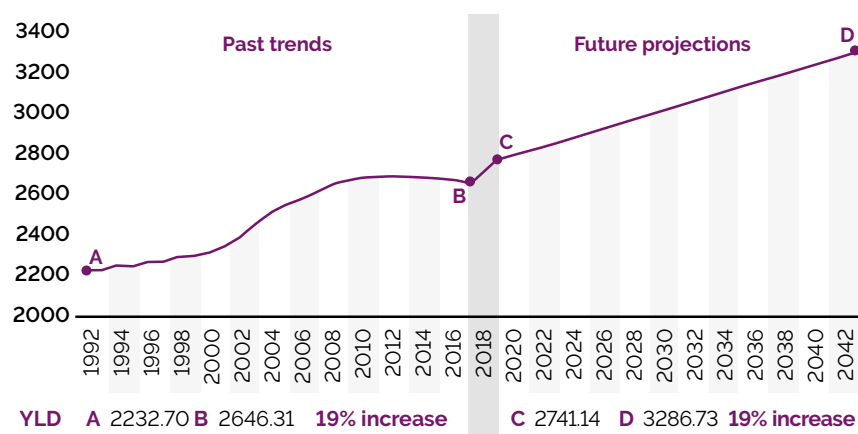
Alongside cardiovascular disease, type 2 diabetes is responsible for a significant number of years lived with disability in better off countries, and rates of the disease are projected to continue to increase.

ILC-UK analysis of type 2 diabetes in better off countries shows that among those aged 50 or over, the number of years lived with disability per 100,000 people:

- rose by 19% between 1992 and 2017.
- is forecast to increase by a further 19% between 2018 and 2042.

Between 1992 and 2042, the number of years lived with disability among those aged 50 and over will rise from 2,232 years per 100,000 population to 3,268 years.

Figure 4: Type 2 diabetes: past trends and future projections (1992-2042) – years lived with disability (YLD) per 100,000 people (aged 50 and over)



Type 2 diabetes is largely preventable and there is significant scope for people who are diagnosed with prediabetes (higher than normal blood sugar levels but not yet at the level for a type 2 diabetes diagnosis) to prevent or delay the onset of full diabetes.²³

Identifying those at risk of diabetes: FINDRISC and CANRISK assessment tools



Initially developed in Finland, the FINDRISC tool has been widely utilised and adapted in countries around the world to identify those individuals at risk of developing diabetes or to detect diabetes.²⁴ The process does not require blood glucose screening but instead relies on a questionnaire.²⁵ It has been found to be broadly effective at identifying individuals at risk in a range of socio-economic settings, and has been adapted to take account of ethnic and cultural specificities in different countries.

Alongside the identification of those at risk, the purpose of the Diabetes Risk Score as a screening tool is to increase awareness of individual risk factors and the way in which lifestyle modification can reduce the risk of going on to develop type 2 diabetes. It is non-invasive and can be used as a first step to discuss type 2 diabetes and encourage people to be tested where it is indicated this might be beneficial. This is particularly important given the frequently high levels of undiagnosed and untreated type 2 diabetes.

In Canada it has been adapted (CANRISK) to take into account those factors known to be of greater risk to Canadians, including ethnicity. It is utilised by pharmacists to help identify those most at risk of developing diabetes with the aim of preventing it through lifestyle modification or in order to detect and treat diabetes.²⁶ Targeted predominantly at those aged 45-74, it has been found to be effective in identifying those at risk among Canada's multi-ethnic population, including First Nation peoples.²⁷

Lung cancer

The number of years lived with disability as a result of lung cancer is significantly lower than those associated with cardiovascular disease and type 2 diabetes, due to the often late diagnosis of lung cancer and associated low survival rates.

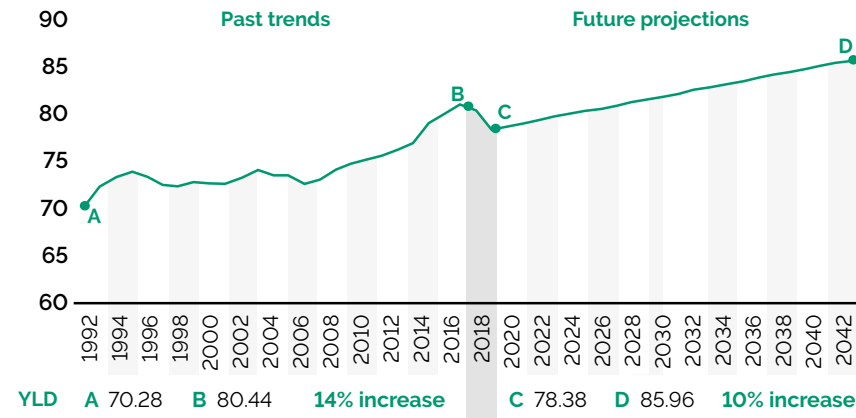
It remains one of the most common cancers among the older population, and one that is highly preventable. In better off countries, approximately 94% of lung cancer cases are diagnosed among people over the age of 50, which means that the health burden on older people is considerable.²⁸ In Europe alone, by 2040, incidence rates will increase by 52% among those aged 70 and over.²⁹

ILC-UK analysis of lung cancer in better off countries shows that, among those aged 50 or over, the number of years lived with disability per 100,000 people:

- rose by 14% between 1992 and 2017.
- is forecast to increase by 10% between 2018 and 2042.

Early detection is critical to improving the survival rates of those diagnosed with lung cancer, with significantly better survival rates where lung cancer is found early.

Figure 5: Lung cancer: past trends and future projections (1992-2042) – years lived with disability (YLD) per 100,000 people aged 50 and over



Lung cancer mortality reduction by LDCT scanning: international findings



Low Dosage Computed Tomography (LDCT) scans have been shown to detect lung cancers at relatively early stages and provide mortality benefits for those with lung cancer.³⁰ This intervention can be used to detect lung cancer before symptoms appear, at which point treatment is much more difficult.

The National Lung Screening Trial was a large scale randomised clinical trial in the USA and found a 20% mortality rate reduction in patients who had undergone an LDCT scan compared to those who had not. The trial was conducted with smokers who had not yet shown signs of symptoms. The findings from this trial are reflected in trials across Europe, including in Belgium, which showed a similar reduction in mortality.

The UK Lung Cancer Screening Trial reported early detection of cancer (stages 1 or 2) increasing the likelihood of the cancer being treatable.³¹ The trial also noted that those with a higher socio-economic status and ex-smokers were more likely to participate in screening than those deemed 'hard to reach'.³²

The Dutch-Belgian Lung Cancer Screening trial (NELSON) found that for smokers who participated in the screening rounds, a negative result could be seen as 'permitting' their continued smoking. The need to combine screening with smoking cessation programmes was noted.³³

Some studies have found differences in effectiveness of the screening by sex and age.³⁴ Similarly, not all uses of LDCT scanning were shown to be cost-effective.³⁵ Cost-effectiveness and accuracy may be improved through adjustments to the selection criteria, as well as using other early detection tools like radiomics. Trials looking into this are underway in several countries including Poland, Italy and the UK.

Communicable diseases

Although there is a greater incidence rate of non-communicable diseases among older populations, communicable diseases such as flu, HIV, shingles and pneumococcal disease also have significant impacts on the health and wellbeing of older adults. They pose a significant health challenge because older people are likely to suffer from more serious complications following infections.³⁶ At the same time, individuals with underlying health conditions, such as diabetes and cardiovascular disease, are also at higher risk.

Flu

Unlike the other diseases selected, the data around flu is less robust as a result of variable data collection and seasonal fluctuation. Nevertheless, it is possible to provide some evidence of the scale of the impact of flu in better off countries.

The WHO estimates that flu affects between 5% and 15% of the population each year.³⁷ Using an estimate of 10%, along with population data for better off countries³⁸, ILC-UK calculate that:

- **over 91 million people aged 50 and over are likely to be affected by flu annually.**³⁹

Table 1: Cases of flu each year in better off countries (at 10% annual flu rate)*

Age group	High SDI	High-mid SDI	Total
50-64	31,963,950	20,962,519	52,926,469
65+	18,413,889	19,761,384	38,175,273
Total	50,377,839	40,723,903	91,101,742

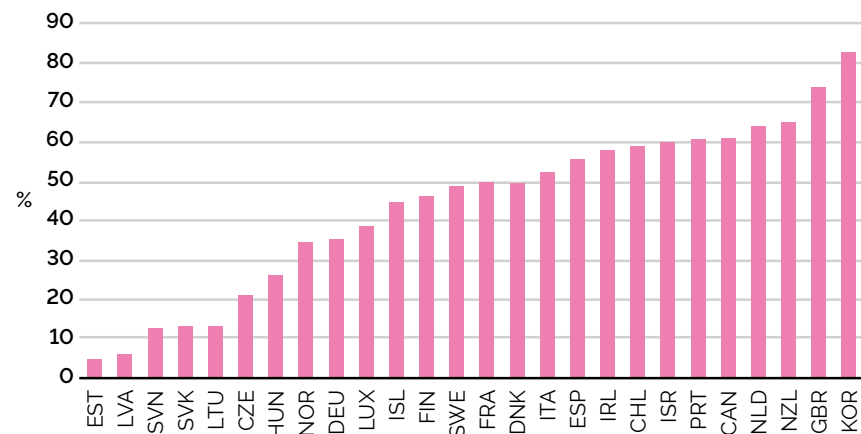
* Due to the way data is collected we have reported High SDI and High-mid SDI countries separately.

Seasonal fluctuations in the flu virus obviously have an important impact on how many people are affected and how severe the flu is. However, in the context of both population growth and an ageing world, we can expect that increasing numbers of people will be affected by flu. At the same time, as the number of years lived with disability increases as a result of non-communicable diseases, it is likely that the burden of complications associated with flu will also grow.

Among people aged over 65 years, flu comes with a higher risk of hospital admission and death.⁴⁰ Evidence suggests that people with diabetes and cardiovascular disease are also more likely to be hospitalised and require additional support when they contract flu.⁴¹ And among people who are immunocompromised (e.g. cancer patients following chemotherapy, and people with HIV of all ages), flu brings a greater risk of death.⁴²

Flu vaccination can prevent flu or reduce its severity and impact on individuals. However, flu vaccinations remain underutilised in better off countries, with few reaching the WHO target of 75% of people aged 65 or over being vaccinated.⁴³ Reported 2017 data (Figure 6) from OECD member countries highlights the significant variability in vaccination rates, with Korea being the only country to consistently report exceeding the 75% WHO target (since 2010).

Figure 6: OECD member countries reported 2017 flu vaccination rates (65 and over)



Source: OECD (2019) Influenza vaccination rates (indicator). doi:10.1787/e452582e-en (accessed 19 November 2019)

Note: OECD member countries not reporting data for 2017 are not included in Figure 6.

Increasing flu vaccination uptake to at least the agreed 75% target should be at the heart of countries' prevention agenda. And, arguably, we should be looking to further raise our ambitions by bringing target rates onto a par with childhood immunisation target rates that usually sit at around 90%.

Community pharmacies and their role in flu vaccination uptake: Portugal and the UK



The role of pharmacies in immunisation varies across the world, but there is evidence to suggest that where pharmacies are able to administer the flu vaccine, they can be effective in increasing uptake among older people.⁴⁴ Pharmacy-based flu vaccination is particularly attractive to older people due to convenience and access, and pharmacies have had particular success in reaching those who have previously not accessed these services.⁴⁵

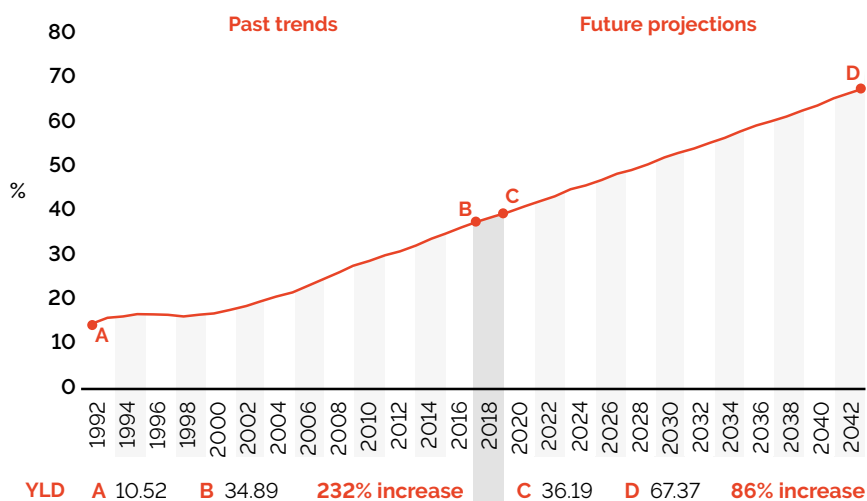
Portugal trialled a six-week pilot project in the Loures Municipality in 2019 where community pharmacies could offer vaccinations free of prescription and administration fees. Initial results from the pilot revealed a 31.8% increase in vaccination coverage in the area, with particular success in reaching those aged 65 and over.⁴⁶

On the Isle of Wight (UK), pharmacies were used to address lower than average flu vaccination rates. Eighteen community pharmacies offered vaccinations during normal working hours, with two providing a Sunday service; no appointments were necessary. A 2013 study found that while offering pharmacy-led vaccinations increased uptake across all ages, those aged 65 and over benefitted most from the intervention. 70% of all patients were over the age of 65, and flu vaccination uptake improved by 6.2 percentage points. In addition to higher vaccination rates, patients were highly satisfied with the service, and the convenience of access was a major advantage over being vaccinated in a general medical practice.⁴⁷

HIV

Although in many better off countries the long-term prognosis for those with HIV has improved considerably, we cannot be complacent about increases in rates of HIV, particularly in the context of growing longevity. Older people with HIV are more likely to suffer serious complications, with all of the associated impacts on their quality of life.⁴⁸

Figure 7: HIV: past trends and future projections (1992-2042) – years lived with disability (YLD) per 100,000 people aged 50 and over



ILC-UK analysis of HIV in better off countries shows that among those aged 50 or over, the number of years lived with disability per 100,000 people:

- rose by 232% between 1992 and 2017.
- is forecast to increase by 86% between 2018 and 2042.

The rising number of years lived with disability attributed to HIV over the past couple of decades in better off countries can be linked to a number of factors including:

- **A growing number of people are being diagnosed with HIV at an older age, and often at later stages of the illness.**⁴⁹ In EU/EEA, in 2008, some 13% of those diagnosed with HIV were aged 50 years or older, while in 2017 that had increased to 19%.⁵⁰ In the EU in 2017, nearly a quarter of heterosexual transmission was diagnosed at 50 years-of-age or above⁵¹, while in the US one in six diagnoses were in that group.⁵²
- **More people are living longer (past the age of 50) with HIV as a result of effective treatment.** In the US, in 2016 more than half of those with an HIV diagnosis were aged 50 years or older.⁵³

There is also evidence to highlight that those living with HIV have a greater risk of comorbidities. Research in both the US and Europe has found that people with HIV aged over 60 (US) and over 50 (Europe) were found to be more likely to be at increased risk of age-associated non-communicable comorbidities, including hypertension, myocardial infarction and diabetes.⁵⁴

HIV pre-exposure prophylactic medication among older people: challenges and barriers



Pre-exposure prophylactic medication for HIV is highly effective in preventing HIV infection. While older people are more likely to adhere to drug regimens, there are challenges in ensuring that they receive access to pre-exposure prophylactic medication.

Older people are more likely to present with later-stage HIV on diagnosis, with a noted reluctance to undergo testing. Research by New York State's Ending the Epidemic Advisory Group highlighted a complex mix of factors that contributed to a lack of engagement in prevention strategies, including pre-exposure prophylactic medication, among older people (aged 50 years and over).⁵⁵ These include ageism, both within the medical profession and among older people themselves, an inability or reluctance to engage with older people about their sexual activity among care providers, and a lack of knowledge and understanding of HIV and sexually transmitted infections risks among older people. Alongside this is a cautiousness among the medical profession in using pre-exposure prophylactic medication with older people.⁵⁶

In some countries and regions, there have been challenges in ensuring that those who can benefit from using pre-exposure prophylactic medication have access to it. In the UK, for example, the availability of pre-exposure prophylactic medication from the National Health Service varies. In Scotland, it is available to all who meet certain criteria and in Wales availability is through an uncapped trial, while in England a three year trial for 26,000 people is underway.⁵⁷

Medical studies into a pre-exposure prophylactic medication among people over 50 years of age are scarce.⁵⁸ Nevertheless, it is clear that such preventative interventions have an important role to play in supporting people to live well for longer.

The focus of healthcare systems needs to be both on addressing their own perceptions of older people with HIV, as well as supporting older people to engage with effective prevention strategies across their life course.

An alternative future is possible

This snapshot of the burden of just a few preventable non-communicable and communicable diseases suggests the scale of the challenge ahead if we fail to translate stated commitments to prevention into action. And these conditions are only one small part of the picture. Societies across the globe face a growing burden of preventable disease, but we do not have to accept a future of longer lives accompanied by ill health.

Putting in place effective preventative measures for these and other largely preventable diseases, could mean that the future projections we have identified take a very different direction. The benefits that would yield could be counted not only in a reduction in the number of years people live with ill health but, as the analysis presented in the next section demonstrates, wider economic benefits.

Productivity

Our analysis of trends across a snapshot of preventable diseases highlights the health impact of failing to implement effective preventative interventions across the life course.

However, ill health also has wider impacts, including on our economies, through productivity loss.*

The impact of ill health on productivity manifests itself in different ways, including:

- **Absenteeism from work**
- **Presenteeism – whereby people go to work but do not perform to their full potential due to ill health**
- **Early retirement due to ill health**
- **Premature mortality**

And productivity losses are not only borne by those with poor health and their employers. The costs are likely to be shared by family and dependants, who are negatively affected by the impact of lost wages. At the same time, the productivity of family and friends may also be affected by taking time off work, or even withdrawing from the labour market altogether, to provide care.

* Productivity loss refers to a reduction in work output caused by ill health, such as through time missed from work or reduced efficiency when present at work.

Estimating productivity losses

ILC-UK undertook statistical analysis to assess the productivity losses associated with our selected group of diseases.*

653 billion USD
We estimate this is the productivity loss associated with cardiovascular disease, type 2 diabetes, lung cancer and HIV among employees aged 50-64 years in better off countries.



Furthermore, we believe these to be conservative estimates. Assessing productivity loss among those aged 50 and over is challenging because data is not fully available and there are significant variations in the methods utilised for such calculations.

Beyond this, however, there are other factors that suggest our figures are conservative. People are increasingly working beyond the age of 65 as a result of changing retirement ages and a desire to continue working, but it has not been possible to take account of these changes in our analysis. Nor do these estimates account for the impact of premature death on productivity.

* The Appendix provides a brief outline of the methodology used to calculate the productivity loss estimate.

Cardiovascular disease accounts for:

390 billion USD a year
in lost productivity among employees aged 50-64 years in better off countries.



A review of the literature highlights that cardiovascular disease damages productivity because it impacts both physical and mental health, which in turn affects people's ability to attend and be productive at work.⁵⁹

Research undertaken in Europe found that individuals who had suffered an acute coronary syndrome lost an average 53 days from work. For people who had experienced a stroke, the figure was 47 days. A further six days (for acute coronary syndrome) and nine days (for stroke) were deemed lost due to presenteeism. Furthermore, the study showed the significant impact of cardiovascular disease on the productivity of carers. The study estimated that in Europe there was a loss of some 11 days (for acute coronary syndrome) and 12 days (for stroke) among carers.⁶⁰

Effective prevention strategies that reduce the number of people with cardiovascular disease are crucial. However, preventative interventions that seek to reduce or limit the impact of disease are also important. For example, people who have suffered a transient ischemic attack or minor stroke are more likely to go on to have a more significant stroke. Effective prevention through timely and beneficial medical intervention can significantly reduce the impact of these attacks, bringing substantial health, social and economic benefits.

Stroke Prevention Clinics: Canada



Stroke Prevention Clinics (SPCs) were established in Canada as outpatient units to support people with a non-disabling stroke or a transient ischemic attack (TIA) through assessment and treatment. Evidence suggests that people suffering from TIAs or mild strokes are more likely to suffer serious strokes and myocardial infarction.⁶¹ The focus of SPCs is on secondary stroke prevention with the aim of reducing the likelihood of an individual going on to have a major stroke.

SPCs are interdisciplinary and, through the provision of diagnostic tests and a range of other interventions, seek to reduce a person's risk of having another stroke and potentially suffering from a stroke-related disability. Alongside medical interventions, patients are provided with support to address issues including quitting smoking and losing weight.

Evaluations in 2011 and 2015 of SPCs in Ontario demonstrated that referral to an SPC was associated with improved outcomes. The 2011 study (based on a cohort of 16,468 patients between 2003 and 2008 of which 47 per cent were referred to an SPC with a mean age of 69.1 years) found an improvement of 26 per cent in 12-month mortality rates.⁶²

A 2016 evaluation found that being admitted to hospital was associated with patients receiving more timely tests and treatments, but with few patients suffering TIA or mild stroke actually admitted, referral to an SPC was still associated with greater access to care and improved medical outcomes.⁶³

Although there are challenges around access to SPCs, both in terms of distance for some rural Canadians to their nearest SPCs and with few open continuously (24/7), the evidence indicates that they are making an important contribution to secondary stroke prevention in Canada.⁶⁴

Type 2 diabetes accounts for:

250 billion USD a year in lost productivity among employees aged 50-64 years in better off countries. 

A 2013 review concluded that the majority of studies noted that diabetes had a significant negative impact on the ability to work. Absenteeism rates ranged from 5.4 to 18.1 days for employees with diabetes. Furthermore, people with diabetes retired around 0.7 years earlier when compared to individuals without diabetes.⁶⁵

More recent literature suggests that there is a considerable productivity loss linked to diabetes, especially in patients with complications.⁶⁶ Productivity losses as a result of diabetes tend to worsen over time and with the severity of the disease.⁶⁷ One review found that among those suffering from depression as well as diabetes, work days lost increased to 78.5 days from initial rates of between 5.4 and 18.1 days.⁶⁸

Furthermore, people with diabetes are often affected by other conditions. For example, diabetes is a risk factor for cardiovascular disease.⁶⁹ A survey of international literature from 2007-2017, found that globally 32.2 per cent of people with diabetes were affected by cardiovascular disease.⁷⁰ In the US, the American Heart Foundation reported in 2015 that among those aged 65 or over who had diabetes, at least 68 per cent would die from heart disease, and 16 per cent from a stroke.⁷¹

It is clear that there are significant benefits to be gained from early investment into preventing diabetes. However, disease management is also important for reducing the impact of the disease and helping people to live well.⁷² Prevention programmes can support people to manage their diabetes effectively, such as through medication adherence and lifestyle changes. This helps to prevent health risks associated with diabetes, including cardiovascular disease, nerve damage, sight loss and renal failure.⁷³

Type 2 diabetes – a collaborative care model: Brazil



A collaborative care model for patients with uncontrolled type 2 diabetes showed positive results in the adherence of patients to medication and improved medical outcomes in a randomised controlled trial in Brazil. The patients who received the intervention (average age 61.1 years) had uncontrolled diabetes. The intervention improved glycaemic control among patients, and led to reduced levels of LDL cholesterol alongside significant reductions in blood pressure and improved blood pressure control.

Patients who participated in the trial received the standard care services as well as support from a pharmacist with 20-40 minute face-to-face individual interviews following clinic visits.

The pharmacist discussed diabetes, effective self-monitoring and the appropriate use of medication, alongside wider health-related lifestyle issues. Other medications patients were taking were also reviewed, and pharmacists could bring concerns about medication use to the attention of both the medical staff and the patient to discuss continuation, modification or discontinuation.

Patients also received phone calls from the pharmacist (lasting up to 20 minutes) between clinic visits. During the telephone follow-up, medication use and adherence was checked, adjustments made such as to scheduling, and if any problems were identified the pharmacist could refer to the medical staff.

Although the number of participants in the study was small (80 initially, with 73 completing), the research echoes other studies that found that a collaborative approach is more effective in supporting individuals with challenges in controlling type 2 diabetes. The authors highlighted the importance of the context in which the collaboration occurred, with healthcare professionals working alongside each other, and noted the need to assess long-term outcomes as well as programme sustainability.⁷⁴

Lung cancer

9 billion USD a year is the estimated productivity loss associated with lung cancer (and tracheal and bronchus cancer) among employees aged 50-64 years in better off countries.



While there is limited research into the productivity losses for those living with lung cancer, as more emphasis is placed on survival and mortality rates, what research there is highlights that there are significant productivity costs associated with lung cancer. For example, research in Ireland found that lung cancer was the costliest type of cancer (among all age groups), with significant productivity losses associated with paid work and work in the household.⁷⁵

During cancer treatment, a review found that factors associated with reduced work productivity included not only disease effects (such as progression) but also the effects of the treatment itself.⁷⁶

Finally, another review looking at cancer more broadly investigated problems when survivors return to work, which included cognitive limitations, mental health problems and physical limitations, all of which are likely to affect productivity.⁷⁷

Risk Assessment Tools for detection of cancer: UK experience



Risk Assessment Tools (RATs) for the detection of cancer have been developed in the UK based on the predictive value of particular symptoms.⁷⁸ Developed for a range of different types of cancer, RATs are designed to be used as an aid to clinical judgement rather than replacing it when identifying patients who require further screening for cancer.⁷⁹

Used as a tool to help primary care practitioners select patients for cancer investigation, evidence from the UK suggests that RATs have a positive impact on diagnosis activity, with more patients being sent for screening. In one 2013 study, the use of RATS was found to lead to increased testing and additional diagnoses of both lung and colorectal cancer where patients did not present with symptoms required for rapid assessment under national guidelines.⁸⁰

An international review of a range of risk assessment tools found that there was no adverse effect of this intervention on levels of patient 'worry' about cancer⁸¹, with some evidence suggesting that the use of RATS reassured patients where no further investigation was deemed necessary.

Flu

39 billion USD a year is the estimated productivity loss associated with flu among employees aged 50-64 years in better off countries.



The productivity costs of flu are less well researched.⁸² This is in part because of its typically short duration and because those more affected by flu may be less likely to work due to pre-existing conditions or because they are no longer active in the labour market. However, in an ageing society we cannot afford to write off a condition that affects a population who make up an increasingly significant economic force in our societies and where broadly effective prevention is available.⁸³

Estimating absenteeism in better off countries is difficult due to data limitations; not everybody will visit a doctor, nor will all flu samples be tested. However, a range of 3.7 to 5.9 days working days lost as a result of flu has been estimated.⁸⁴

Using this estimate, alongside World Bank labour force participation and unemployment data, we can estimate the amount of time lost to flu is:

- around **159 million working days in 2018 in better off countries.**

This, alongside estimates for working days in a year⁸⁵ and World Bank data for Gross Domestic Product (GDP)⁸⁶ enables us to calculate productivity losses.

Table 2: Potential productivity loss each year due to flu in those aged 50 to 64 in better off countries (at 10% annual flu rate)*

Days lost	High SDI	High-mid SDI	Total
3 days	USD 9,157,755,370	USD 14,295,754,090	USD 23,453,509,460
5 days	USD 15,262,925,617	USD 23,826,256,816	USD 39,089,182,433

Furthermore, it is important to note that these estimates do not take into account that for those deemed to be at higher risk or who are more likely to have existing conditions that increase the burden of flu, productivity losses could be even greater.

* Due to the way data is collected we have reported High SDI and High-mid SDI countries separately.

HIV

4 billion USD a year is the estimated productivity loss associated with HIV among employees aged 50-64 years in better off countries.



Improvements in healthcare for those with HIV, including the availability of highly active antiretroviral therapy (HAART) for many in better off countries, has had a positive impact on the health of those living with HIV. Accordingly, to account for the limited literature and growing evidence that suggests the impact of HIV on productivity is likely to be limited in better off countries due to the availability of HAART, our estimates for lost productivity are conservative.

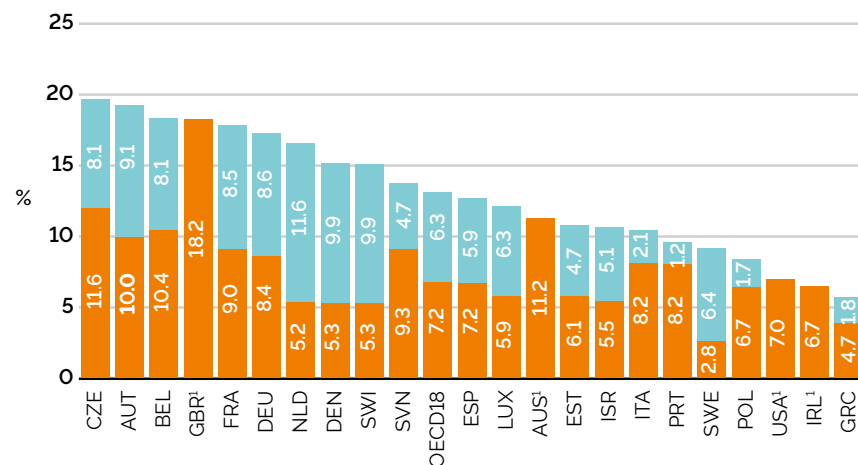
Impacts on productivity as a result of HIV include potentially higher unemployment rates, as well as not all people having access to effective treatment regimens.⁸⁷ Indeed, for some groups within better off countries, there have been no significant benefits from HAART.⁸⁸

According to the World Bank, antiretroviral coverage varies significantly between countries. For example, in 2018 the EU average of antiretroviral coverage of people living with HIV was 83 per cent (ranging from 91 per cent in Italy to 41 per cent in Bulgaria).⁸⁹ Nor do individuals respond to treatment regimens in the same way, with side effects having an impact on work productivity loss.⁹⁰

Unpaid care

The productivity impact of unpaid care (sometimes called informal care) – i.e. the provision of any unpaid support to people who need help with day-to-day activities, whether it be help, such as shopping, cooking or being accompanied to medical appointments, or more intensive care giving – is also important to consider. Typically, care is provided by someone with whom there is a relationship, such as a child or spouse⁹¹, although care from friends and ad hoc support, such as from neighbours, is also important.

Figure 8: Percentage of people aged 50 or over who provide informal care 2017 (or nearest year)



1 Total (no breakdown available).

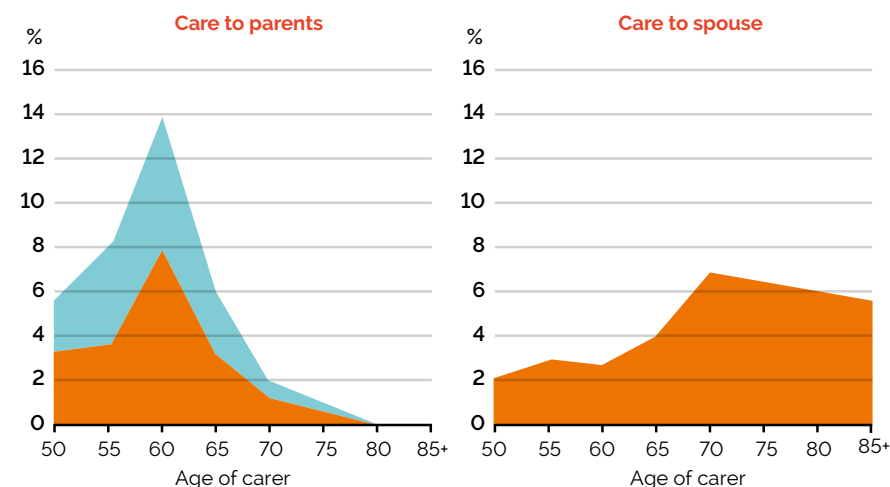
Source: OECD (2019) *Health at a Glance 2019*, OECD Publishing, Paris, doi.org/10.1787/4dd50c09-en (accessed 1 December 2019)

Note: GBR refers to England only.

■ Daily
■ Weekly

Data limitations mean that it is not possible to analyse the productivity losses for the diseases considered in this report. However, from the data that is available it can be inferred that there will be productivity losses among carers. Across those OECD member countries with data, 13 per cent of the population aged 50 and over had weekly or daily caring responsibilities.

Figure 9: Percentage of European population aged 50 and over who provide informal care (by recipients of care and age) 2017



Source: OECD (2019) *Health at a Glance 2019*, OECD Publishing, Paris, doi.10.1787/health_glance-2017-78-en (accessed 1 December 2019)

■ Daily care
■ Weekly care

Providing unpaid care is not only associated with an economic burden for carers, as their capacity to participate in paid employment is limited, but also with reduced health.⁹² The need for unpaid care is likely to be correlated to the number of years lived with disability. Therefore, it can be assumed that productivity losses associated with unpaid care are likely to rise as the number of years lived with disability increase.

Improving prevention across the life course

We know that prevention works.

We know that in the long term prevention is often cost-effective.

We know that failing to spend money on prevention will often leave healthcare systems paying more to treat people once they are actually sick.

However, commitments to prevention across the life course too often ebb and flow.

Policies and strategy documents on prevention are laudable, and yet among OECD member countries the amount spent on prevention has remained stable at between two and four per cent for some time.

As this report has demonstrated, the health and economic costs of failing to act are substantial, so why do we still do so?

This is the question we took to policymakers, practitioners, and other experts in a series of discussions organised by ILC-UK throughout 2019.

In side events at the World Health Assembly in Switzerland, and the G20 Health Ministers' Meeting in Japan, and seminars and workshops in the United Arab Emirates, Australia, Taiwan, and the USA, we have examined how we can galvanise action to embed preventative approaches across the life course.

Barriers to prevention

We have identified a wide range of barriers to progress on prevention from the short-term political cycles, through to institutional and organisational factors and even financial accounting systems that fail to take account of the wider, positive impacts of prevention.

Central to all of these is a lack of political and institutional will to prioritise prevention across the life course.

Choices are made as to the allocation of resources, and public health and prevention budgets are too often neglected, or even seen as soft targets for cuts. Whereas cutting acute services can be politically problematic, cuts to public health and preventative interventions create less political backlash.

Short-term political cycles can also work against prevention. Investment may not show immediate returns, and the longer-term benefits of some preventative interventions are easily traded off for political wins that align with electoral cycles.

Furthermore, the way in which institutions and organisations function does not always lend itself to embedding prevention across the life course. A number of key factors have been identified including:

- **Institutional silos and barriers that hinder partnership working, including conflicting targets and budgets, and funding mechanisms.**
- **A lack of organisational leadership.**
- **A failure to create simple, sustained messaging for non-health policymakers and stakeholders that is clear on the benefits of prevention.**
- **A tendency to underestimate the importance of prevention, both in relation to health and more widely, such as by failing to capture the social and economic benefits of prevention.**
- **A focus on the 'cost-saving' rather than 'cost-effectiveness' of preventative interventions.⁹³**

Such challenges are not insurmountable but they will not be overcome without a clear commitment from politicians, policymakers and healthcare systems to prioritise prevention across the life course.

Making prevention across the life course a reality: three key themes

From the discussions we held around the world, three key themes have emerged to help make prevention across the life course a reality and to orient healthcare systems towards prevention.

We need to:

- 1 Democratise access to preventative interventions.**
- 2 Inspire and engage people, communities, professionals and policymakers with the prevention agenda.**
- 3 Effectively utilise technology.**

1

Democratising access

During our discussions with policymakers and stakeholders, the critical role healthcare systems had in ensuring equal access to preventative interventions, and avoiding exacerbating health inequalities, was identified. Preventative interventions will be vital in reducing the health inequalities that currently blight people's later lives. However, if prevention efforts are to be effective, then healthcare systems will need to put in place measures to overcome the cultural, economic and geographical barriers that can stop people accessing and benefitting from preventative interventions.

Making prevention convenient

For some people, distance is a barrier to access. For people living in rural communities, accessing services can be particularly difficult. Medical services may be too far away, and there may be a lack of transport and/or the cost of traveling may be too high.

However, a lack of transport can put up barriers even in urban areas for those with mobility issues. Provision of healthcare services through home visits, community-based services, the offer of paid-for transport services and schemes such as volunteer driver services, as well as allowing remote access via digital technology, can all contribute to enabling people to access preventative services.

Bringing prevention to where people are is also important. From blood pressure/blood sugar screenings in community centres or supermarkets to lung cancer screening in car parks, making access convenient can help encourage the take-up of preventative services.⁹⁴

In some countries, pharmacists are contributing to making prevention convenient, playing an important role as the first point of call for vaccinations and other basic screening services, as well as reviewing medications and providing medication adherence support. With high levels of trust and greater accessibility at a time when staff shortages are having a negative impact on access to general practitioners and family physicians, pharmacists could play a particularly important role in rural areas where they are often the main healthcare professionals working in a community.

We have data indicating that pharmacists, for example, are taking an active role in administering vaccines and improving vaccination coverage in more than 27 countries.

Gonçalo Sousa Pinto, International Pharmaceutical Federation⁹⁵

In Canada, pharmacists can go into the homes of existing customers and provide vaccination services. In France, a three-year pilot in four regions enabled pharmacists to provide the flu vaccine to target groups free of charge. Nearly 750,000 people were vaccinated, of whom 23.5 per cent were vaccinated for the first time.⁹⁶

However, not all countries enable pharmacists to play a role in prevention, and the public do not always recognise the role that pharmacists could potentially play.

In some countries, regulatory change would be required to strengthen the role healthcare and allied professionals can play in promoting prevention. In others, the primary barriers to change are a lack of collaborative working cultures and inadequate compensation schemes.⁹⁷ And in others, cultural perceptions around the role of different healthcare professionals are the greatest constraint. However, the evidence from those countries that have looked to bring a wider range of professionals into delivering prevention and to enhance collaborative between them, suggests that these changes are worth exploring.

Regulations need to be looked at. There are costs and barriers and artificial walls being placed on the ability of these teams [of healthcare professionals] to serve the needs of the patients [...] We need to incentivise providers to want to provide the service and to be able to provide the service. As we are asking them to provide more, if we are not also compensating them for those services, it will be harder for them to add services to their practices.

Mitch Rothholz, American Pharmacists' Association⁹⁸

Making prevention convenient has also yielded benefits in relation to lung cancer. Targeting those at risk and providing easily accessible screening opportunities has been shown to be effective at identifying people with lung cancer at an early stage, when the condition is more likely to be curable.

Lung health checks: England (UK)



In 2019, the National Health Service in England rolled out a programme of 'lung health checks' focused on the early detection of lung cancer in mobile screening units based in car parks. The mobile screening units have been targeted on areas with high death rates from lung cancer.

This roll-out came after a successful trial in Manchester where more than 2,500 people aged 55-74 from 14 GP practices in deprived areas responded to invitations to attend a short screening session in local supermarket car parks. The screening led to the identification of 42 patients with lung cancer, of which 80 per cent were at stage 1, and only 10 per cent were at stage 4. This compared to nearly 20 per cent of lung cancer diagnoses at stage 1 and nearly 50 per cent at stage 4 in Greater Manchester as a whole. Early identification meant that in 90 per cent of cases curative treatment was offered.⁹⁹

Ensuring that cost is no barrier

Clearly where individuals are charged for preventative interventions, this can be a barrier to uptake. Out-of-pocket charges can limit the uptake of preventative interventions, and impact adherence to preventative medication regimens.¹⁰⁰ This is particularly evident among vulnerable individuals and communities, including those with multiple health problems, those living in poverty, and older people.¹⁰¹

Wider economic factors can also impact access to health interventions – for example, the reluctance or inability to take time off to access healthcare services can act as a barrier, particularly among those in insecure work.

Step on It!: Broadening access in New York (USA)



Step on It! was a workplace based initiative for taxi drivers at John F. Kennedy International Airport in New York City in 2011. It focused on healthcare outreach to taxi drivers, particularly South Asians, to help them to access healthcare and health insurance. Taxi drivers were identified as being at higher risk of cardiovascular disease, and faced challenges in accessing healthcare as a result of their work, including poor working conditions and unstable income, as well as other barriers, including linguistic and cultural ones.

For five consecutive days, an empty parking area at the airport was used to enable taxi drivers to access basic health assessments (height, weight, blood pressure, glucose levels, etc.) and to receive medical advice and counselling from a healthcare professional. Free workshops were also available.

A total of 466 drivers participated, with 63 per cent (242 drivers) requiring urgent or regular follow-up for high blood pressure or glucose levels.

Step on It! highlights the need for healthcare systems to recognise the challenges some people will find in accessing preventative health services and the potential benefits of making prevention accessible and convenient.¹⁰²

While the need for, and value of, providing financial incentives for people to participate in prevention is often discussed¹⁰³, the immediate priority will be ensuring that cost is not a barrier to prevention. In most cases, the best way to ensure people can access preventative interventions is to provide them free at the point of use, or on a fully reimbursed basis.

However, it is not only for individuals that financial considerations are important. It is essential that healthcare professionals are adequately reimbursed when delivering preventative interventions.

Tailoring prevention

Being mindful of the growing diversity of society, including among older populations, will be central to addressing inequalities in access to preventative interventions. This means preventative interventions need to be designed responsively, taking into account different needs and ways of communicating, and recognising that past negative experiences of healthcare systems can have an impact on a willingness to use services in later life.

It also means acknowledging that there can be a wide range of medical and non-medical factors that can hinder the use of services. For example, one discussant during a *Prevention in an ageing world* event highlighted that the low use of a healthcare facility in an area of Texas, where the majority of the population were from minority ethnic communities, was due to the food being served: failing to cater for the local community had created a sense of exclusion. Another noted that the predominantly white, male family physicians and general practitioners in the USA (a 2018 study found that 75.9 per cent were white¹⁰⁴) could contribute to a lack of cultural sensitivity and therefore result in challenges in promoting a prevention agenda.

Patient navigator programmes

Focused on meeting the needs of marginalised, vulnerable and underserved communities, patient navigator programmes have been used in countries including the USA, Canada and Belgium, as a way of working with groups and individuals who may find navigating healthcare systems challenging.¹⁰⁵ Patient navigators can be healthcare workers, social workers or lay individuals who focus on supporting an individual to overcome access and treatment barriers and to empower the patient. They have been found to be beneficial to overcoming barriers in accessing primary care.¹⁰⁶

Patient navigators provide wide-ranging support, including helping patients to make appointments for medical visits and tests, to liaise with relevant healthcare and non-healthcare organisations and individuals, including employers and insurance companies. The role may also include addressing cultural, ethnic and/or linguistic barriers, building trust between communities and healthcare systems and healthcare professionals, and providing psycho-social support.



Targeted and personalised services can also be effective at promoting prevention. A 2017 review of the literature found that developing tailored strategies based on facilitation, language, location and messaging was effective in diabetes prevention among minority populations at higher risk of developing diabetes.¹⁰⁷

'Cultural tailoring' – which included facilitators who shared cultural, linguistic or socio-economic characteristics; material provided in the community language; a location that was relevant (such as a religious or community centre); and messaging that took into account specific cultural and faith-based beliefs and attitudes – was shown to be vital in ensuring that preventative interventions were accessible to all communities.¹⁰⁸

Data can also contribute to identifying those areas where outreach work can be effective in promoting prevention and implementing preventative interventions. Examples such as the development of a Neighbourhood Atlas in the USA in 2018 showing levels of deprivation¹⁰⁹ and work using health records in Durham, North Carolina (USA) that mapped rates of hypertension with levels of racial segregation¹¹⁰ were both highlighted during discussions. Smarter use of data can help in targeting community outreach and other initiatives, minimising costs and maximising benefits.

Supporting carers

Unpaid and paid carers play an important role in supporting people in later life. Carers can play a vital role in supporting the delivery of preventative interventions, if they are given timely information and guidance to enable them to do so.

At the same time, the health and wellbeing of carers themselves needs to be supported through effective preventative measures that take account of their wider needs and responsibilities. Unpaid carers have a wide range of social and emotional, as well as healthcare, needs that should be addressed if their wellbeing is to be maintained.¹¹¹

Improving health literacy through co-production with communities

Involving individuals with experience of living with long-term conditions in co-producing health messaging can be an effective way of improving individuals' 'health literacy' and supporting self-management.

The most effective co-production involves all those in the community who might use the service or intervention, including those who may face barriers to involvement, such as the oldest older people (those aged over 85), people from minority ethnic communities and those living in deprived areas.¹¹² However, proactively engaging with these groups requires specific effort and resourcing.

While in some countries co-production is now widely accepted and seen as good practice, in others there remain institutional and organisational barriers to co-production with people and communities, that need to be overcome.

Addressing ageism

Creating a culture of prevention across the lifecourse will require action to break down the tendency for healthcare systems to focus on younger age groups and to write off those in later life. To do this, we need to tackle the pervasive ageism that exists within societies, so that we design and deliver preventative interventions that are responsive to the risks people confront across their lives.

We also need to confront individuals' own ageist perceptions and attitudes so that they themselves see healthy ageing as the norm, and recognise the value of preventative interventions in enabling them to live well for longer, and to maintain their capacities and capabilities.

Embedding prevention across the life course demands that action is taken to improve the engagement of:

- Policymakers with the prevention agenda;
- Healthcare professionals with promoting preventative services and activities; and
- Individuals with taking up preventative activities and services.

Without commitment at these three levels we are unlikely to see real progress on the prevention agenda. It is vital that these groups are inspired by, and engaged with, the importance of prevention.

Furthermore, we should not overlook the importance of innovation in prevention – whether it be innovation in ways of working or new forms of preventative intervention. Supporting innovation, and its effective evaluation, will be an important dimension of improving preventative interventions.

Communicating the importance of prevention

Policymakers need to understand the wider social and economic benefits of taking action on prevention. We need to use a wide range of evidence to demonstrate the benefits of prevention, and we need to communicate this in language that resonates with political and policy making audiences, not just in healthcare, but also more broadly, including within finance ministries.

It will also be helpful if we can find a common language for communicating the prevention message across countries and debates.

Singapore is making a concerted effort to shift beyond healthcare to health, by adopting a cross-Ministry, multi-sectoral approach with participation and support from corporates and individuals. We need a whole-of-society approach so that we can turn silver into gold.

Gan Kim Yong, Minister for Health, Singapore¹¹³

Changing the message

Effective messaging that resonates with, and engages, older people as to the importance of prevention is also needed.

Simply telling people to 'do better' was widely acknowledged to be unhelpful. Instead, we need more positive messaging that can inspire and engage people in taking action to improve their health.

Instead of telling people to go and see their primary care physician 'to avoid getting a disease', it is better to frame it in a positive way, such as 'to allow you to continue to do the things you like to do and have reason to value'.

Professor Julie Byles, University of Newcastle (Australia)

In our discussions we heard about the need to shift the conversation on prevention to emphasise supporting people's capabilities, rather than focussing on stopping people becoming unwell. As older people work for longer, take on new roles in caring, including for grandchildren, and have more active lives for longer, there are opportunities to frame prevention messaging around prevention helping people to keep up the lives they want to lead. In recent research into attitudes to flu vaccination, ILC-UK found that presenting flu vaccination as a healthy lifestyle choice could be more effective in encouraging take-up than emphasising risk and vulnerability.¹¹⁴

We also heard that talking to people about biological vs. chronological ageing could be an effective way of encouraging people to adopt healthier lifestyles.

The message around smoking cessation may be more effective when it isn't framed as 'stop smoking' but rather as 'at age 50, you have the lungs of an 80-year-old'.

Professor Donald Jurivich, University of North Dakota

Training and equipping professionals

As demand for access to healthcare services increases, ensuring that healthcare systems are appropriately staffed is of great importance. Staff shortages have a negative impact on all forms of healthcare, including on prevention, and where staff time is under pressure, it can make preventative efforts less effective. For example, in some areas, primary care professionals can struggle to deliver preventative interventions and to support individuals to adopt preventative behaviours if appointment times are too short.

Making sure healthcare and allied professionals are appropriately trained is also vital. Effective prevention is about more than screening, medication and treatment. Promoting behavioural change and coaching people to achieve and sustain that change requires training. Delivering prevention to people of all ages requires a specific understanding of how health needs change across the life course, so that appropriate support can be offered.

We also heard that healthcare and allied professionals need to be supported to work together more collaboratively in order to deliver effective preventative interventions. Empowering different healthcare professionals to contribute to the prevention agenda and creating a sense of trust, mutual reliance and collaboration is important. New approaches and new ways of working that reconfigure institutional and cultural barriers to collaboration will therefore be required.

We are now adopting a life course approach through our programmes. That's required a lot of collaboration between all of the different teams and all the different programmes and required us to essentially not be territorial and not be protective of our programmes but to be willing to collaborate at every step of the way.^x

Vicky Li, Office of Preventative Health, New South Wales (Australia)¹¹⁵

3

Effectively utilising technology

Technology and technological innovations offer great potential to support the prevention agenda and enable people to live well for longer. Whether it be 'backroom' technology utilised to improve the way in which healthcare systems implement and record preventative interventions, or technology focused on supporting individuals' health and wellbeing, technology could and should be a useful tool.

However, technology is not a panacea to the challenges associated with prevention. While we must capitalise on its potential, we must avoid an approach that focusses on technology to the exclusion of other, low-tech, approaches to improving preventative healthcare. Something as simple as a telephone call to a patient has been shown to reduce hospital readmission rates.¹¹⁶

Rather than waiting for 'big bang' solutions, the focus needs to be on maximising prevention generally. The opportunities technology and technological advances offer to improve prevention outcomes should be part of a wider strategy. What democratises access, what engages and inspires people, and what works (and does not work) is more important than whether it is technologically driven.

Using data to improve take-up

Technology can play a role in supporting the take-up of preventative interventions. For example, using data to monitor flu vaccination uptake in 'real time' can support primary healthcare providers to increase vaccination rates. Previous ILC-UK research has suggested that one useful tool could be an electronic health card that records vaccination data or online information with vaccination history.¹¹⁷ This could help individuals to check their vaccination status and eligibility, and help to promote a culture of prevention across the life course.

Improving access to health information

Electronic access to patient information can also be important in helping patients and carers to be health literate and understand prevention and preventative interventions. In Singapore, both patients and carers (with a patient's permission) can access health records through the Health Hub.¹¹⁸ The Health Hub also includes 'health challenges' for people of all ages which seek to gamify prevention (such as a national steps challenge) and information on vaccination, healthy eating and exercise.

Empowering patients

So-called 'Patient Empowering Technologies' (PETs) have significant potential to improve people's health and wellbeing and aid prevention. Many PETs work by supporting individual health literacy, enabling people to understand what they can do to take care of their own health, and empowering them with information about the potential impact of taking action. Most PETs relate to individual diseases or wider behavioural change.

One form of PET is wearable health technology. For example, in 2019, the National Health Service in England rolled out the provision of fitness trackers to individuals at risk of type 2 diabetes as part of the Diabetes Prevention Programme to people who could not attend face-to-face sessions. Alongside the fitness tracker, individuals also receive access to health coaching and educational content via apps, as well as online peer support.¹¹⁹ Other types of PETs, such as 'smart pill boxes' that remind people to take medication, along with motion and proximity sensors that track actions likely to represent an individual taking medication, have the potential to improve medication adherence.¹²⁰

While PETs have the potential to engage people and to improve health and care, there is a risk that without action to address underlying issues around digital exclusion and digital literacy, over-reliance on these technologies could exacerbate health inequalities.

Overcoming distance

Telehealth services have the potential to help improve access to healthcare, particularly in geographically isolated communities. However, uptake of telehealth in some countries, such as Australia and the USA, has been affected by barriers including reluctance among individuals and organisational resistance, as well as legal and regulatory issues.¹²¹ For example, a 2019 survey reported by the American College of Physicians highlighted issues including the appropriate use of telehealth, concerns over further compounding care disparities, and a lack of access to technology among some patients, as potential barriers to the use of telehealth.¹²²

Addressing the barriers to telehealth may be one way of democratising access to preventative interventions for those limited by geographical barriers and/or mobility issues.

We are driving an R&D agenda that we believe will helpfully provide assistance for seniors later on [...] involving remote communication technology, developing sensors, wearables, implantable devices and of course app technology [...] We want seniors to be able to live healthily and also independently. And a lot of this is going to be enabled by the fact that we bring the healthcare to the senior and enable them to communicate with their providers and their carers while they remain at home.^x

Hon. Eric D. Hargan, Deputy Secretary for Health and Human Services, USA¹²³

Addressing barriers to use

Technology has a potentially significant role to play in improving health outcomes, including by supporting collaboration between healthcare and allied professionals, and enabling individuals to adopt health-promoting behaviours.

However, there are practical and cultural barriers within organisations to large-scale technological changes, including resource limitations and the disruption caused by changes to ways of working.¹²⁴ Such barriers can be overcome but adequate resourcing, committed leadership and engagement with the workforce are central to achieving such change.

Another key barrier to overcome, at both the institutional and the individual level, is concern around data privacy.¹²⁵ Even the use of aggregated data, such as the use of internet search requests to identify disease trends, has raised concerns.¹²⁶ While research in the European Union suggested that some 80 per cent of people recognise that sharing health data can be beneficial, including across borders, concerns remain around how this can be done securely and with respect for individual privacy.¹²⁷ For the potential of technology to be fully exploited, it will be essential that such concerns are addressed.

Technological advances in areas including artificial intelligence, automation and personalised care, alongside those in the fields of biosciences and pharmaceuticals, are forecast to have a significant impact on prevention. For example, major innovations in screening techniques, including personalised screening, have the potential to identify cancers early and to improve long-term treatment outcomes.¹²⁸ However, in order to maximise such opportunities there will need to be appropriate regulatory frameworks to ensure not only that these developments occur, but also that they are taken up.

Conclusion

In an ageing society, we face a growing burden of ill health and significant associated social and economic costs unless we take action now.

Healthcare systems must no longer neglect the vital role they have to play in preventing ill health right across the life course.

We already know the interventions that work – but we now need to see these adopted at scale across the globe. As we do this, we must also take action to:

- **Democratise access to preventative interventions;**
- **Inspire and engage people, communities, professionals and policymakers with the need to take action to promote good health and prevent illness; and**
- **Effectively utilise technology to deliver preventative interventions.**

Prevention is on the political agenda. Governments have increasingly recognised the costs of failing to invest. Many governments in better off countries have published prevention strategies and publicly committed to making prevention a key part of their healthcare agenda.

Such commitments are laudable. As our analysis has demonstrated, investing in prevention will yield social and economic benefits. However, oft-stated affirmations of the importance of prevention need to be matched by long-term commitments to invest in preventative interventions across the life course.

If governments are to commit to prevention, they need to ensure prevention spend is no longer an 'easy' cut during times of constrained government funding.

Governments need to be ambitious in supporting people to age well.

It is never too late to prevent.

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Appendix: Estimating productivity

The analysis of the estimated costs associated with productivity losses is explorative and aims only to give an estimate of the potential impact of largely preventable diseases on productivity. Differences in study design (e.g. definitions of patient groups), methods (e.g. human capital or friction costs), reporting (e.g. by time losses or cost) and the complexities of estimating each aspect of productivity loss make synthesising the available evidence very difficult.

Limitations include the simplification of assumptions made by linking disability weights to the cost of productivity losses.¹²⁹ Additionally, the research assumed the labour force participation rate and unemployment rate available for each country was applicable to the population aged 50–64, which may overestimate the proportion of people working.

However, in many ways these estimates are likely to be conservative, as they focus specifically on losses in the working population aged 50–64. This is likely to be a significant underestimate for three key reasons. Firstly, the diseases are linked to 1.9 million deaths in the population of focus each year, which will have a large impact on labour supply. Secondly, calculations assume a retirement age of 65 and no impact of the diseases on retirement. In reality, early retirement is likely to be more common for people with these diseases. Additionally, more people are working beyond retirement age and they are likely to have a lower productivity rate if they experience these health problems. Finally, the data was not available to estimate productivity losses in carers. Where carer productivity losses were included in published papers, they were sizable.¹³⁰

A further complication is the likelihood of interactions between the diseases, in particular cardiovascular disease and type 2 diabetes, which share a number of risk factors. People with chronic conditions, such as diabetes, may also have complications and comorbidities. This complexity has not been factored into the analysis and was rarely considered by the published papers.



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