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Iechyd Cyhoeddus
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Public Health
Wales

Name of Meeting

Board

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Agenda item:

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Changes in mortality and life expectancy

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Approval/Scrutiny route: Business Executive Team, 20 May 2019

Purpose

This paper highlights a shift in pattern in life expectancy and mortality to the Board. It describes how life expectancy, which had been rising since World War 2, plateaued from 2010/11. Life expectancy is an important indicator of population health; this is one of the most striking epidemiological challenges in recent times. Although part of an international phenomenon, Wales, together with Scotland, is particularly affected within the UK, and the UK together with the US is particularly affected internationally.

This paper introduces the topic for discussion at the Board and sets the scene for a more in-depth opportunity to consider the changes in Wales and its implications at a future Board development session.

Recommendation:

APPROVE

CONSIDER

RECOMMEND

ADOPT

ASSURANCE

The Board is asked to:

Consider the paper in advance of a future Board development session.

Link to Public Health Wales [Strategic Plan](#)

Public Health Wales has an agreed strategic plan, which has identified seven strategic priorities and well-being objectives.

This report contributes to the following:

Strategic Priority/Well-being Objective	7 - Building and mobilising knowledge and skills to improve health and well-being across Wales
Strategic Priority/Well-being Objective	1 - Influencing the wider determinants of health
Strategic Priority/Well-being Objective	6 - Supporting the development of a sustainable health and care system focused on prevention and early intervention

Summary impact analysis

Equality and Health Impact Assessment	No decision required to necessitate equality and health impact assessment
Risk and Assurance	Not currently identified on a risk register
Health and Care Standards	This report supports and/or takes into account the Health and Care Standards for NHS Wales Quality Themes Theme 1 - Staying Healthy Theme 2 - Safe Care Governance, Leadership and Accountability
Financial implications	No immediate finance implications.
People implications	No immediate people implications.

1. Purpose / situation

Wales, together with other UK nations, has seen a change in patterns of life expectancy and mortality since about 2011. This is a marked change on the steady increase in mortality seen in World War 2, and affects a number, but not all, high income countries internationally.

This paper alerts the Board to this stalling life expectancy in Wales, and sets the scene for a more in-depth opportunity to consider the changes in Wales and its implications at a future Board development session.

2. Background

A rise in mortality rates in 2015 led to increasing interest in changing patterns of mortality and life expectancy in the UK. The changes in mortality and life expectancy have been described by the Institute and Faculty of Actuaries, academics and others.

In May 2018, the Public Health Observatory published [Mortality in Wales 2012-2016](#). Public Health Wales is working with other agencies to understand the causes and drivers better.

The [most recent life expectancy analyses](#) shows a decline in Wales between 2014-16 and 2015-17, of approximately 4 weeks in females, and six weeks in males. A decline was also seen in Scotland for males and females, and Northern Ireland for males for this period.

There is important variation in life expectancy and mortality across the UK and internationally. A major driver of this variation are differences in material deprivation; within Wales there is a life expectancy gap between those in the least and most deprived areas of 6.1 years for females and 7.4 years for males.

3. Description/Assessment

Findings of *Mortality in Wales 2012-16*

This report provided an overview of the patterns in Wales, with in an international context. It concluded:

- The mortality rate in Wales has been declining since the Second World War; however since around 2011, this decline has faltered and rates have shown little change.
- A plateau in life expectancy in Wales is also visible since around 2011.
- This phenomenon has been repeated across much of Western Europe, but in Wales the effect occurred earlier and only Scotland now has lower life expectancy.

- The faltering of the decline in the overall mortality rate has been driven by increased deaths in the 85-89 and 90+ age groups. However, mortality rates among 55-84 year olds are also no longer in decline.
- Mortality rates rose significantly in 2015, attributed at least in part to increases in deaths from flu and pneumonia, and dementia and Alzheimer's disease among those aged 75+.
- The slowing of the improvement in mortality in Wales is a cause for concern. Public Health Wales will remain in close communication with the Office for National Statistics (ONS) and Public Health England (PHE) and other organisations studying the changes to mortality trends both to monitor the ongoing pattern of mortality and to explore the underlying factors.

What has been shown since

Analysis by other agencies includes:

- Segmented [time series analysis](#) (experimental statistics) undertaken by ONS described confirm a change:
 - A statistically significant slowdown in the long-term improvement in age-standardised mortality rates for England and Wales took place around the early 2010s.
 - This was true for England and Wales, for both sexes, and for older and younger people, with some variations in the timing and extent of the change in trend.
- In an [international analysis of life expectancy changes](#) from ONS, the UK and USA saw the greatest reductions in life expectancy gains for both males and females. Some countries, including Japan have seen the reverse, with greater gains in the most recent six-year period, and lower gains in the preceding six years. [OECD](#) published similar findings, also noting the slow-down in gains in France, Germany Sweden Netherlands, Australia and Canada.
- England, Scotland, Northern Ireland and Wales have all examined the contribution of different ages and conditions to the changes. In common is that changes are seen across a variety of ages. A slowdown in the significant gains that had been made in cardiovascular disease, together with increases in other areas, especially dementia and respiratory disease have an important role to play in the changes seen. The significance of increased recording of dementia as a cause of death remains a matter of some debate.
- The winter of 2017-18 saw the highest level of seasonal excess mortality in England and Wales in more than 40 years, with respiratory disease causing the most excess deaths. Although changes in mortality trends and life expectancy are not limited to winter periods or respiratory deaths, changes in circulating influenza viruses since 2014 may exacerbate underlying annual trends.

Working with other agencies

We are working with agencies across the UK nations to gain a greater understanding of the drivers of these changes.

A workshop across was held in Edinburgh in November 2018, involving UK agencies, which described eight potential hypotheses relating to the underlying cause. These were artefact (not a real change), attainment of natural lifespan limit, austerity and economic downturn, influenza, loneliness and mental health, migration, obesity and weather. Given evidence to date, artefact, attainment of natural life span limit and migration were not considered suitable to explain the changes.

Public Health Wales hosted a subsequent workshop in March with agencies from across the UK. This is the second in this series to understand the causes for the changes. This workshop explored how hypotheses relating to austerity/economic down turn, health and care services and influenza could be tested in collaboration. Public Health England will host the next workshop in June.

Rapid surveillance of weekly all-cause mortality is currently being set up within Wales by the influenza surveillance team of Health Protection division, in collaboration with colleagues from other UK nations, using the WHO recommended EuroMoMo algorithm. Work is also underway to understand the contributions of influenza, adverse temperature and air pollution to mortality in recent years in Wales.

4. Recommendation

These changes in mortality and life expectancy seen in Wales, the UK and further afield represent an important and significant change in one of our most reliable measures of health.

Within the UK Wales, along with Scotland, is particularly affected, and internationally the UK is particularly affected.

Drivers of life expectancy and mortality are complex; however, this is a real change, which is likely to relate to a number of causes, including economic downturn and austerity.

The Board is asked to:

- **consider** these findings with a view to reviewing them in more detail during a Board development session.