BULLETIN ONE

The Director of Public Health's Annual Report 2018/19

Introduction

"Health inequalities and the social determinants of health are not a footnote to the determinants of health. They are the main issue." (Sir Michael Marmot)

Significant improvements have been made in life expectancy during the last 100 years or so. In England and Wales in 1901, the average life expectancy for men was 48.5 years and 52.4 years for women. By 2001 life expectancy had increased to 76.0 years for men and 80.6 years for women[1].

These improvements, whilst wonderful, are not the full story, with these increases in life expectancy not felt to the same extent by all. Throughout this period, those who are most vulnerable and have the least have the worst health and die youngest. These health inequalities are preventable and unfair and cannot continue to be accepted.

In this, the first of four bulletins, explores health inequalities, their impact both on our local population and on our health and care system and the things we can do to make a positive change.

Cate Edwynn, Director of Public Health

[1] Office for National Statistics (2015) How has life expectancy changed over time? 9 September 2015

The issue

Life expectancy

Life expectancy (LE) for males (78.2 years) and females (82.7 years) in Derby are significantly below the England average (79.5 and 83.1 years, respectively). There is a wide gap in LE at birth between the most and least deprived areas of the city, which means that men living in areas of greatest deprivation live, on average, almost 10 years less than men living in the least deprived areas.

Derby has the widest inequality in life expectancy at birth for both males and females in the East Midlands.

Compared to all of England, Derby is in the top 25% local authorities in the country for the widest inequalities in life expectancy at birth. In recent years, the inequalities gap in LE at birth for males has narrowed. However, exploration of the data highlights that this is not due to improvements in the health of the most deprived, but rather a fall in life expectancy of men living in some of Derby's more affluent neighbourhoods.

Healthy life expectancy

Healthy life expectancy (HLE) is a measure for the average number of years a person would expect to live in good health. Whilst people are generally living longer, healthy life expectancy (HLE) is decreasing with more people living for longer in poor health and increasingly with multiple health conditions.

In Derby, HLE is falling and at a greater rate than England as a whole. HLE for males is 60.2 years (three years below England average) and 58.4 years (5.5 years below England average) for females in the city.

Derby City Council

Whilst women live on average longer than men, men live healthier for longer when compared to women. For some women in the city this can mean living almost 25 years in poor health.

The level of inequality in healthy life expectancy between males living in the most and least deprived parts of Derby is 18.7 years, and 19.2 years for females. Due to this, Derby has the widest inequality in healthy life expectancy for both males and females in the East Midlands region. In all of England Derby is ranked 9th out of 152 local authorities for males, and 8th out of 152 for females, for inequalities in healthy life expectancy.

Derby is in the top 10 local authorities in England for the widest inequality in healthy life expectancy.

Long-term conditions

One of the main reasons for reducing healthy life expectancy is the increasing prevalence of long-term conditions. *"A long term condition (LTC) is a condition that cannot, at present, be cured but is controlled by medication and/or other treatment/therapies[2]."*

Many people are living with a LTC that is limiting their ability to carry out day-to-day activities. The 2011 Census revealed that 18.7% of the Derby population have a long-term health problem where activities are limited. That represents 2-in-5 of us aged 50 and over. LTCs are more common and more severe in people from more deprived groups.

Table 1 shows significant increases in the prevalence of depression and dementia. It is not clear, however, how much of these increases are due to rises in actual prevalence, improved identification and reporting or both. For instance, it is estimated that 1 in every 16 people have diabetes in the UK. However, 13.5% of these people living with diabetes have not been diagnosed yet. Therefore, our reported cases are different to our expected cases.

Most common LTCs

- Back pain
- Hypertension
- Obesity
- Depression
- Asthma
- Diabetes

Table 1 Prevalence of LTCs as reported on the primary care Quality and Outcomes Framework (QOF) disease registers:

Type of LTC	Number affected in Derby		% change
	2013/14	2016/17	
Hypertension	37,478	37,648	0.45
Depression	13,878	20,105	44.87
Diabetes	15,590	16,574	6.31
Coronary heart disease	8,981	8,947	-0.38
Stroke	4,484	4,790	6.82
Dementia	1,810	2,337	29.12

Living with multiple conditions

Many people have the challenge of not just living with one condition but living with two or more conditions. The number of people who are living with multiple conditions are increasing and this is a major public health, health and care challenge. There are a number of reasons for this escalating issue including:

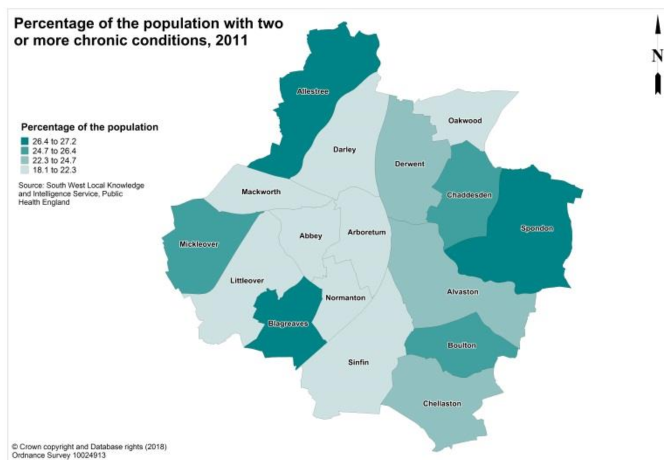
- Increasingly ageing population.;
- Our lifestyles, particularly diet, lack of physical activity etc.;

[2] Department of Health (2012) Long Term Conditions Compendium of Information: Third Edition.

- The environments we live in – for example poor housing, pollution, single person households etc.;
- The conditions we work in – sedentary work, display screen equipment, poor posture;
- How we socialise – rising isolation from reduced in-person interactions, negatives associated with social media;
- Our social norms – excess weight more common, chronic conditions normalised.

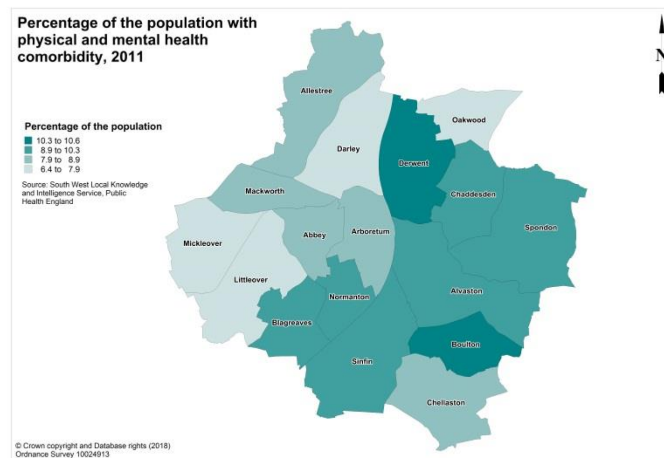
Multiple chronic conditions are a huge burden and cost not only to the individuals affected but also relatives, communities, health and social care systems, and the economy. When looking at the prevalence of a range of conditions and premature mortality, there is a strong correlation with deprivation – with the highest rates in the poorest areas. This link is less obvious when looking at rates of multiple conditions where other factors such as age also come in to play as shown in Figure 1 below:

Figure 1



Some areas with the lowest proportion of the population with two or more conditions are the most deprived, whilst those with the highest are amongst the most affluent, for example, in Allestree. The relationship between physical and mental health co-morbidities is complex and multi-factoral and are not necessarily the same as those with multiple physical conditions. The map shown in Figure 2 shows the percentage of the population with physical and mental health co-morbidities.

Figure 2



Different areas of the city and populations are impacted quite differently making tackling the issues very challenging.

It is estimated that 1-in-4 people in Derby live with two or more chronic conditions.

Disability Adjusted Life Years (DALYs)

Public health interventions aim to reduce the burden of disease and increase the quality of life of populations. DALYs are an aid for assessments that explore public health priorities, successful interventions, return on investments, etc. DALYs quantify the burden of disease through using the number of years lost to illness, disability, and premature death in a population – essentially finding those years in perfect health lost.

The DALY causes in Derby are predominately non-communicable diseases – cancers; cardiovascular disease; musculoskeletal disorders; etc. associated primarily with how people live. The DALY risks in Derby are behavioural – smoking; substance misuse; inadequate diet; metabolic - high blood pressure; excess weight; high cholestrol; high glucose; environmental/ occupational - air pollution; asbestos at work.

The causes

Figure 3 The causal factors of DALYs (both sexes, all ages, per 100,000) in Derby

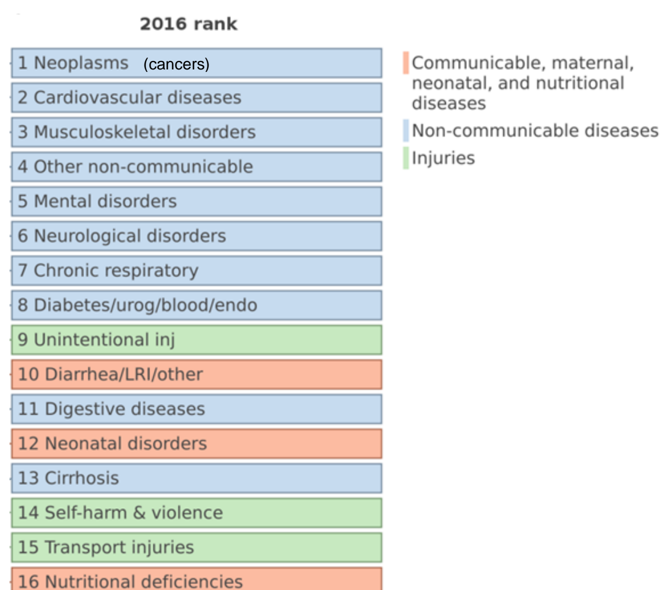
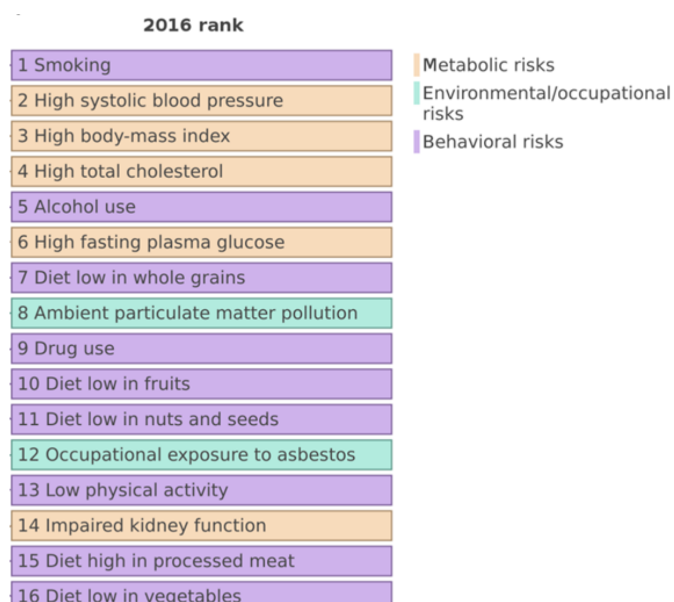


Figure 4 The risks factors of DALYs (both sexes, all ages, per 100,000) in Derby



"Health inequalities are underpinned by social determinants of health, which are determined by the broad social and economic circumstances into which people are born, live, work and grow old. There is a social gradient across many of these determinants that contribute to health with poorer individuals experiencing worse health outcomes than people who are better off." (Public Health Matters[3])

The causes of health inequalities are an unequal distribution of income, power and wealth. These causes need to be addressed by:

- ***Undoing*** fundamental causes,
- ***Preventing*** harmful wider environmental influences,
- ***Mitigating*** negative individual experiences.

Fundamental causes influence the distribution of wider environmental influences (e.g. availability of work) and this in turn shapes individual experiences (e.g. low income). This effect leads to inequalities in health outcomes[4].

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[3] Public Health Matters (2017) Closing the health gap and reducing inequalities.

[4] NHS Health Scotland (2018) What are health inequalities?

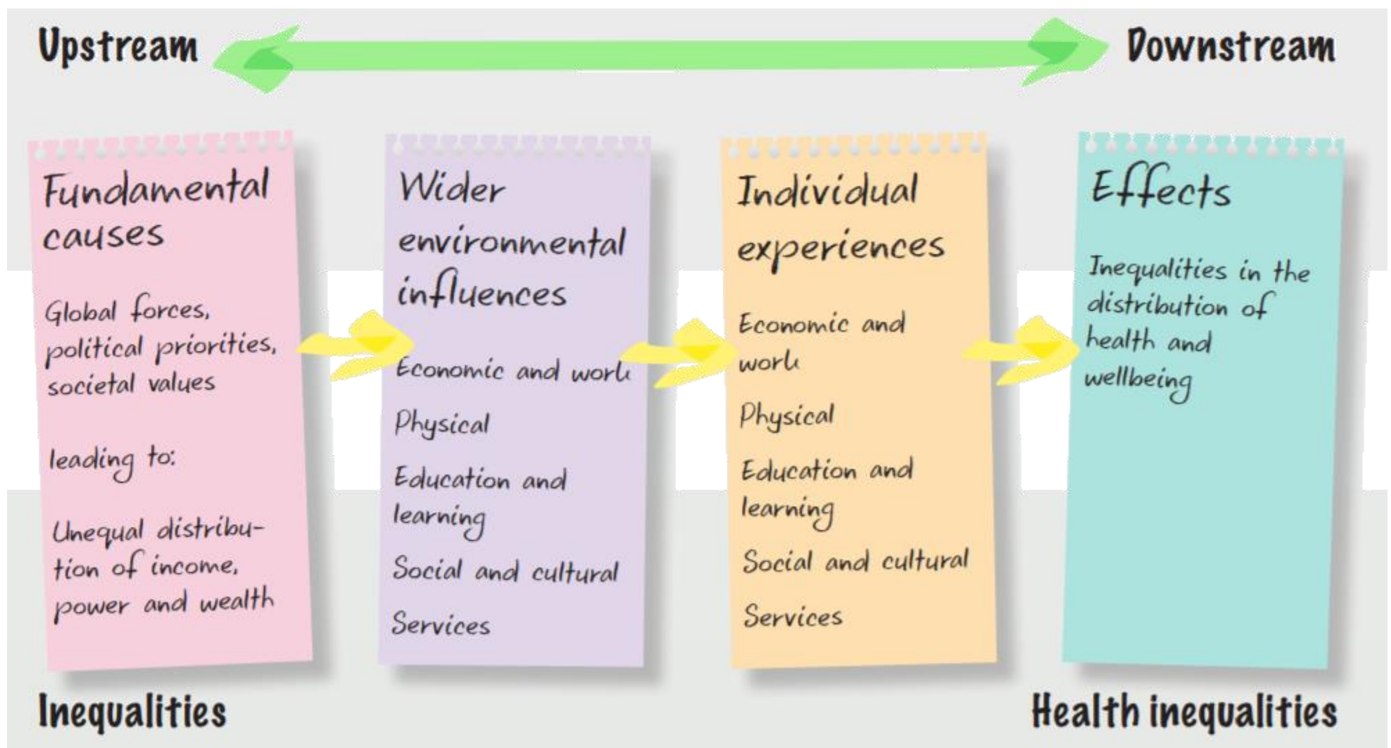
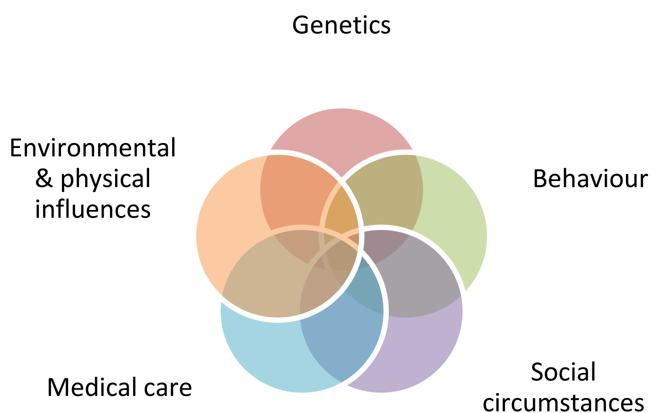


Figure 5 Robert Wood Johnson Foundation the relative contribution of multiple determinants to health outcomes



How long we live, how long we live in good health and if, when and how many long-term conditions we have is linked to a range of factors. These include our genetics, our circumstances – whether we live in poverty, have good housing, are educated, in good employment, have good social networks, whether we smoke, whether we eat well and are active, whether we get good health care.

Variations in these factors lead to variations in the prevalence of different diseases and in turn how these diseases impact on life expectancy and healthy life expectancy. In Derby, the main causes for lower than national life expectancy in males are: circulatory ill-health (23%), digestive conditions (20%) and respiratory (19%). Early deaths in women are predominately the result of cancer (36%), respiratory diseases (29%) and digestive (25%) (PHE Segment Tool, 2018).

Determinants of health outcomes are not equally distributed in society.

These factors are not equally distributed, for example, Table 2 highlights how smoking behaviour is experienced differently between groups.

Table 2 The unequal distribution of smoking

Factor	High prevalence	Low prevalence
Age	Young adults	Older adults
Sex	Males	Females
Deprivation deciles	Most deprived	Least deprived
Socioeconomic group	Routine Manual	Managerial Professional
Country of birth	Eastern European	South Asian
Ethnic group	Mixed	Chinese
Religion	None	Sikh
Health status	Very bad	Very good

To improve health outcomes we need to focus on both the 'causes' and the 'root causes' (causes of the causes) that drive population health and wellbeing. These interacting factors underpin the determinants of health.

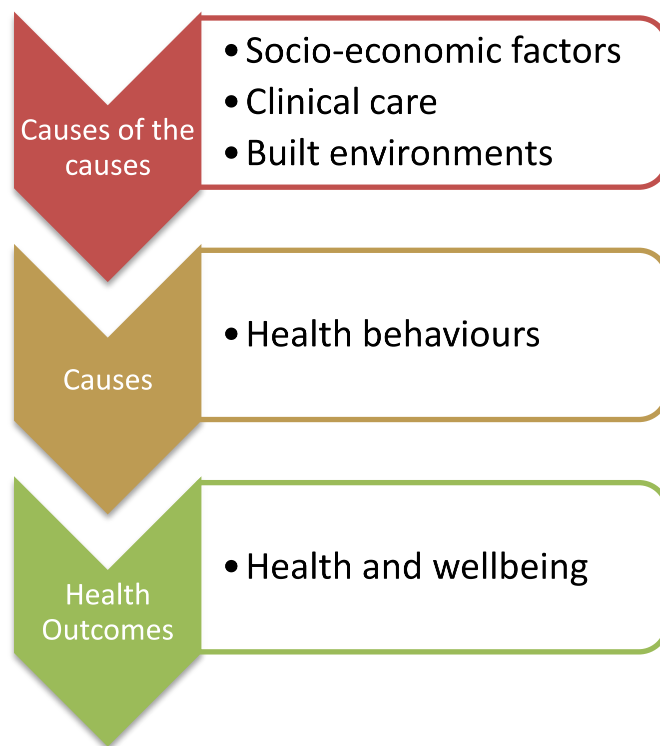


Figure 6 provides board estimates of the contribution of different factors to people's health.

Figure 6 Robert Wood Johnson Foundation and University of Wisconsin Population Health Institute relative contribution of the determinants to health

Health Behaviours 30%	Socio-economic Factors 40%	Clinical Care 20%	Built environment 10%
Smoking 10%	Education 10%	Access to Care 10%	Environmental Quality 5%
Diet/Exercise 10%	Employment 10%	Quality of care 10%	Built Environment 5%
Alcohol use 5%	Income 10%		
Poor sexual health 5%	Family/Social Support 5%		
	Community Safety 5%		

The impact

"Health inequalities are currently estimated to cost the NHS in England a total of at least £5 billion each year." (Local Government Association)

As we have seen, the changes in our lifestyles, circumstances and environments are leading to more of us living with one or more long-term condition. The impact on local people and our health and social care system is significant.

The impact on local people

The impact on local people is significant and wide ranging, and includes:

- Living in pain and discomfort;
- Difficulty in doing everyday activities;
- Decreasing independency;
- Increased isolation and loneliness;
- Reduced confidence and increased levels of anxiety;
- Greatest impact on the poorest and most vulnerable.

The impact on the health and care system

People ageing in poorer health not only impacts on their health and wellbeing, but has a knock-on effect to the economy and need for support.

Long-term conditions are resource intensive:

- LTCs cost £7 in every £10 of total health and social care expenditure.
- LTCs account for:
  - half of all GP appointments,
  - two-thirds of outpatient appointments,
  - 70% of inpatient bed days,
  - 30% of the population account for 70% of the total health and care spend.

Example: the impact of diabetes

The NHS spends approximately £10 billion each year on diabetes and associated complications - 10% of the NHS budget. Diabetes expenditure is set to rise to £17 billion by 2035; requiring 17% of the NHS budget[5]. This escalation is largely due to changing demographics (an ageing population, ethnic structure) and the projection of increasing excess weight in the population.

Much of this spend is not on treatment but on complications relating to the condition e.g. amputations. Diabetes costs reach beyond the NHS. Someone with an amputation as a result of their condition will have a reduced ability to live independently and may require social care. Social care costs relating to diabetes are also set to increase.

Diabetes Type 2 incidence and the development of diabetes complications, and therefore associated costs are largely preventable through long-term behaviours that support eating well, being physically active and maintaining a healthy weight.

[5] Diabetes UK (2014) The cost of diabetes

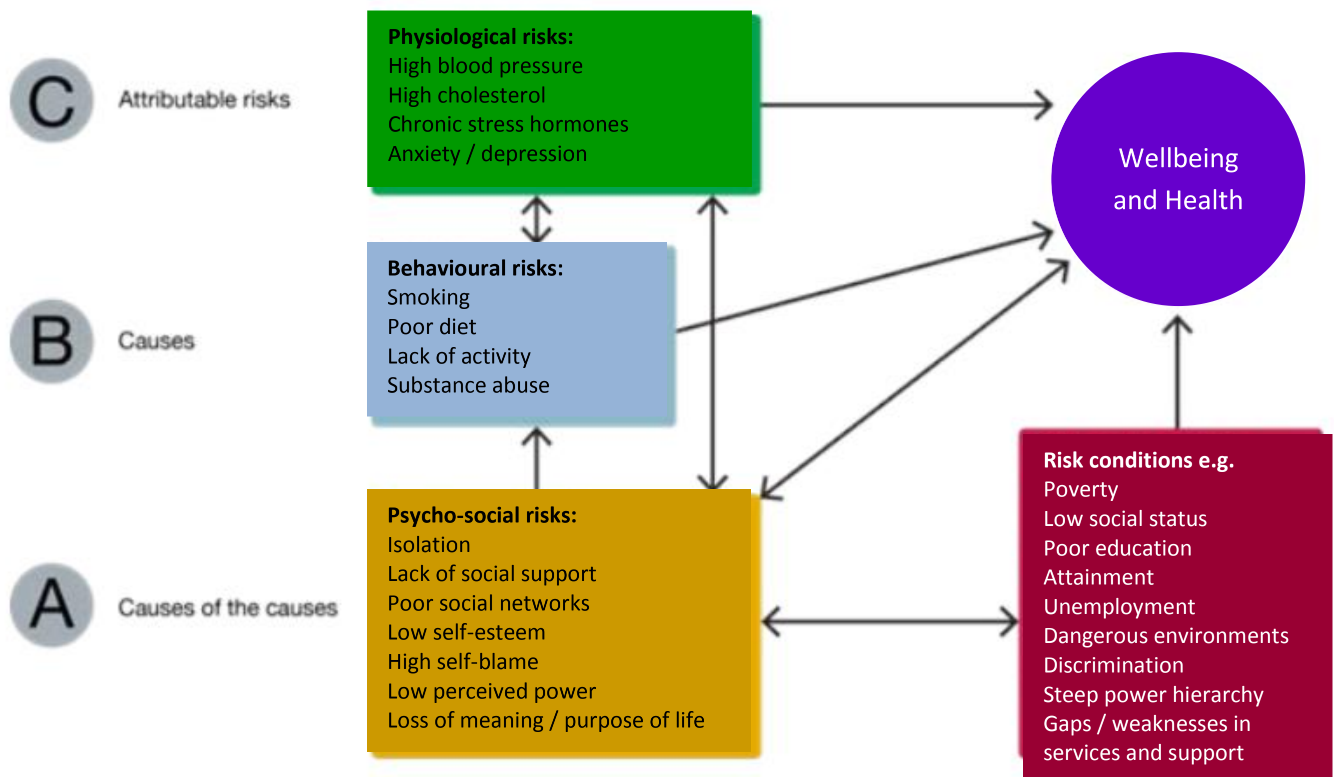


Figure 7 Pattern of risks affecting health and wellbeing (PHE, 2017)

Tackling the issue

"It is entirely appropriate that public health professionals should be working with the sectors that are responsible for influencing those conditions of daily life that have an impact on health inequalities."

(Sir Michael Marmot)

We must commit to addressing the causes of causes, and accept that this can take time.

The Public Health England resource *'Reducing health inequalities: system, scale and sustainability'* is intended to support local action to tackle health inequalities[6].

Health inequalities are reduced by intervening in several ways. For instance:

- Intervening at different levels of risk,
- Intervening for impact over time,
- Intervening across the life course.

[6] Public Health England (2017) Reducing health inequalities: system, scale and sustainability

Improving health and wellbeing and reducing health inequalities

Marmot discusses how the wider determinants of health impact on people's lives and exacerbate inequalities. Four of the six policy areas are specifically for action across the life course:

a) Give every child the best start in life.

b) Enable all children, young people and adults to maximise their capabilities and have control over their lives.

c) Create fair employment and good work for all.

d) Ensure healthy standard of living for all.

e) Create and develop healthy and sustainable places and communities.

f) Strengthen the role and impact of ill health prevention.

The CSDH & WHO 2008 report *'Closing the gap in a generation: health equity through action on the social determinants of health'* makes three overarching recommendations[7]:

1. Improve daily living conditions.
2. Tackle the inequitable distribution of power, money and resources.
3. Measure and understand the problem and access the impact of action.

Healthy life expectancy in men and women needs to rise. This will be achieved through preventing people developing long-term conditions. We need to develop a strategy that impacts on the risks, causes and causes of causes.

Different types of input impact differently over different time periods. For instance, reducing poverty may take decades to make a substantial impact from interventions but managing hypertension may be realised in 3-5 years. A strategy needs to therefore consider the short, medium and long term.

[7] CSDH (2008) Closing the gap in a generation: health equity through action on the social determinants of health

Equality and equity in practice

Locally, public health interventions often incorporate ***proportionate universalism*** (universal services with intensive support for vulnerable groups). This is a strategy which aims to address health inequalities by ensuring there are fewer to no barriers in terms of price, stigma, accessibility and discrimination.

"Those living in the most deprived areas are 10 times less likely to live in the greenest areas."

"Children in the most deprived areas are twice as likely to be obese as children in the least deprived areas." (Local Government Association[8])

Return on investment

We can deliver evidence-based initiatives that deliver improved health and return on investment.

Making the case for public health interventions[9] (directly quoted ROIs):

School children - The costs to society of transport-induced poor air quality, ill-health and road accidents exceed £40 billion per year. Getting one more child to walk or cycle to school could pay back as much as £768 or £539 respectively in health benefits, NHS costs, productivity gains and reductions in air pollution and congestion.

School-based public health interventions can be good investments. For example, smoking prevention

[8] Local Government Association (2017) A matter of justice: local government's role in tackling health inequalities

[9] The King's Fund & LGA - Making the case for public health interventions

programmes in schools can return as much as £15 for every £1 spent.

Teenage parents - Every £1 spent preventing teenage pregnancy saves £11 in health care costs.

Parents - Parenting programmes to prevent conduct disorder pay back £8 over six years for every £1 invested.

Adults - Birmingham's Be Active programme of free use of leisure centres and other initiatives returned an estimated £23 in quality of life, reduced NHS use and other gains for every £1 spent.

Local intervention examples

The Healthy Housing Hub (HHH) works to improve the lives of vulnerable people by reducing the risk of poor health and accidents within the home. Local evaluation has shown that post HHH interventions, 20% fewer HHH clients were admitted to hospital, 91% were still in their own homes at 12 months, and services such as 111 were used with more frequency replacing ambulance service callouts. Evidence indicates that for every £1 spent on improving homes, the NHS saves £70 over 10 years.

The Local Area Coordination (LAC) service supports residents in Derby to 'get a life, not a service' through empowering individuals to find community based solutions rather than rely on services. LAC staff work in more deprived communities of Derby and since 2012 when the service commenced, have supported more than 1,400 people including more than 750 people with more complex needs. A Social Return on Investment (SROI) analysis of LAC in Derby found that for every £1 invested in the service, £4 of social value is created.

A call to action!

National policies

Prevention and early intervention are key for reducing the onset and impact of LTCs and improving LE and HLE. This in turn will reduce the cost of health and care services.

In May 2018, the Prime Minister Theresa May outlined four missions of the Government's Industrial Strategy. The second mission was healthy ageing[10]:

"Second, through our healthy ageing grand challenge, we will ensure that people can enjoy five extra healthy, independent years of life by 2035, whilst narrowing the gap between the experience of the richest and poorest.

We are living longer lives because of medical advances, better drugs, healthier lifestyles, and safer workplaces.

It is a sign of our success, of our progress as a society, and is to be celebrated.

But as we extend the years of our life, we should also work harder to increase quality of life in our later years.

That should not just be the preserve of the wealthy – everyone, of every background and income level, has the right to enjoy a happy and active retirement.

We can do that by supporting more people to stay happy, healthy and independent in their own homes for longer, instead of going into hospital.

It will take a collective effort to achieve this."

[10] Prime Minister Theresa May (2018) PM speech on science and modern Industrial Strategy: 21 May 2018

In November 2018, the Health Secretary Matt Hancock, outlined plans for how to transform the government's approach to prevention[11]:

"In the UK, we are spending £97 billion of public money on treating disease and only £8 billion preventing it across the UK."

"A focus on prevention and predictive medicine isn't just the difference between life and death, it's the difference between spending the last 20 years of your life fit and active, or in constant pain from a chronic condition. So our focus must shift from treating single acute illnesses to promoting the health of the whole individual. That requires more resources for prevention."

"These plans include:

- *Consulting next year on measures to encourage employers to support more disabled people into work, and to improve access to occupational health.*
- *Increasing specialist mental health services to a further 30,000 women during pregnancy and during the first year after they have given birth by 2020 to 2021.*
- *Halving childhood obesity by 2030.*
- *Reducing loneliness and social isolation, and making social prescribing available in every local area by 2023.*
- *Diagnosing 75% of cancers at stages 1 and 2 by 2028.*
- *Sequencing 5 million genomes in 5 years, and offering whole-genome sequencing to all seriously ill children and those with cancer by 2019, as well as adults with rare diseases or cancers."*

Duncan Selbie, Chief Executive at Public Health England:

"Investing in prevention is the smartest thing we can do. We need to move from a system that detects and treats illnesses to one that also predicts and prevents poor health through promoting health in all policies and puts people back in charge of their own health."

Expert opinion

In the report *"If you could do one thing…"* ten professors made suggestions of local interventions to reduce health inequalities[12]:

1. Kate Pickett – implement a living wage policy.
2. Edward Melhuish – focus resources on improving life chances in early childhood.
3. Danny Dorling – implement 20mph speed limits where 30mph ones have usually been in place.
4. Clare Bambra – take a 'health first' approach to tackling health-related worklessness.
5. Kwame McKenzie – use a form of participatory budgeting to make decisions on public health priorities and interventions.
6. Tarani Chandola & Andrew Jenkins – utilise the substantive role of further and adult education in reducing social inequalities in health.
7. James Nazroo – adopt local policies to improve the employment conditions of public sector workers.
8. Hal Kendig & Chris Phillipson – implement locally based 'age-friendly environments' that facilitate improvements in the independence, participation, health and wellbeing of older people.
9. Alan Maynard – make good use of evidence of cost-effectiveness before choosing between competing interventions to reduce health inequalities.

[11] Gov (2018) News story: Health Secretary launches 'Prevention is better than cure' vision

[12] British Academy (2014) "If you could do one thing…" Nine local actions to reduce health inequalities

Focusing our local efforts

In short, we need to be focussing on the factors that promote health and wellbeing including:

- Healthy housing.
- Good employment and living wage.
- Healthy environments.
- Healthy behaviours – diet, physical activity, not smoking, not drinking to harmful levels.
- Strong networks and social relationships.
- Sense of purpose.
- Good vaccination and screening uptake.
- Accessible and good quality health and care.

We need to place more importance on prevention in the first instance, and provide management where needed, of chronic and degenerative diseases. Death and disability from non-communicable diseases (heart disease, cancer, diabetes) are a great long-term burden. Further evidence-based interventions and successfully implemented prevention strategies will save long term expenditure in the local health and social care system.

Promoting the health of the whole individual (encompassing both physical and mental health and wellbeing) is fundamental. Important factors in supporting people to have a healthy life expectancy into older age include: quality health and social care systems; adequate income; employment prospects for all adult ages; affordable quality housing; and an active social scene (requiring affordable transport, restaurants, activities, etc.).

Closing words from Cate

Healthy life expectancy needs to rise.

It is not inevitable that an ageing population is one that is sick, dependent, frail, population with chronic conditions and poor quality of life. Other countries, such as Norway, the Netherlands and Germany, have similarly ageing populations but have better health and wellbeing.

Locally, I want to see us share in the national ambitions of prevention strategies for ill-health and raising healthy life expectancy in men and women. I want all people of all backgrounds in Derby, to reach retirement age happy, fit and in good health. In retirement I want to see more people fulfilling happy lives that are active, independent and without long-term and multi-conditions.

Figure 8 Derby specific risks, causes, and the causes of the causes

To visualise our challenge, the 'tip of the health iceberg' image lends itself to us – we need to focus less on the iceberg tip, and more beneath the surface by taking a deep dive and tackling the underlying causes that lead to poor health. By addressing these, we will be able to prevent years of ill health for the people of Derby.