

# Health in Lanarkshire: An epidemiology report



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# Aims

**The overall aim of this epidemiological research was to provide contextual information for the other components of the 'CommonHealth Catalyst' project (and, conceivably, for further, future, development of the project) by providing a detailed picture (for Lanarkshire and its communities) of: population health (outcomes and inequalities); its key determinants; the relevant data sources that exist to explore these issues; and important gaps in the data and evidence base.**

Specifically the research questions this part of the project sought to answer were:

1. What do we already know about health and health inequalities in Lanarkshire?
2. What do long-term mortality trends show (including for specific areas of concern such as deaths from alcohol, drugs and suicide) for Lanarkshire and its different populations?
3. What other data sources are available to understand health, health inequalities, and their determinants in the Lanarkshire area?
4. What do those data sources tell us, and what information do they not provide (i.e. what are the key gaps)?

## Methods

**RQ 1: What do we already know about health and health inequalities in Lanarkshire?**

Existing evidence from the literature which focussed on national and (broadly defined) regional trends and patterns was supplemented with Lanarkshire-specific searches of appropriate research databases and the grey literature. For the former, the MEDLINE and EMBASE databases were searched from 1996 onwards for anything mentioning Lanarkshire and relevant health outcomes (mortality, morbidity, life expectancy and a broad range of synonyms); for the latter, eight sets of internet searches were carried out, limited to the first 50 hits of each. Searches were again based on mentions of Lanarkshire and a range of relevant outcomes<sup>i</sup>.

**RQ 2: What do long-term mortality trends show (including for specific areas of concern such as deaths from alcohol, drugs and suicide) for Lanarkshire and its different populations?**

Mortality and population data (split by five-year age group, sex and year) were obtained from the National Records of Scotland (NRS). Age-standardised mortality rates (ASMRs) for all causes of death combined, as well as eight individual causes (see appendix for list and precise definitions), were calculated for the NHS Lanarkshire region (defined by current (2019) boundaries) and – for comparison – Scotland for the period 1981-2021. Additional analyses (available for the years 2001-2021) were undertaken by national (Scotland) and regional (NHS Lanarkshire) socioeconomic

deprivation quintile, using the Scottish Index of Multiple Deprivation (SIMD)<sup>1</sup>. Different versions of the SIMD were used for different time periods, and analyses were undertaken for all ages, and age 0-64 years. These methods replicated those used (and detailed) elsewhere<sup>2</sup>.

**RQ 3: What other data sources are available to understand health, health inequalities, and their determinants in the Lanarkshire area?**

Data sources were identified from:

- Existing knowledge/previous analyses
- Local and national key informants who were contacted
- The results of the internet searches undertaken as part of RQ 1 (which identified a number of different sources of relevant information)
- Additional internet searches

*RQ 4: What do those data sources tell us (about health, health inequalities, and their determinants in the region), and what information do they not provide (i.e. what are the key gaps)?*

The data sources that were identified were assessed in terms of suitability, relevance, and potential duplication with other sources; where appropriate, data were extracted and analysed.

An additional assessment exercise was then undertaken to compare all the information that was identified with the key health-related topics included in established models of health and its determinants<sup>3-5</sup>; all key gaps were noted.

## Results

**RQ 1: What do we already know about health and health inequalities in Lanarkshire?**

In examining health and health inequalities in Lanarkshire, it is important to do so within the broader context of Scotland, and specifically in relation to how Scotland compares with other parts of the UK and the rest of Europe.

### Scotland

Health in Scotland (as measured by summary indicators such as life expectancy and mortality rates) is poorer than in any other Western European nation. This is the consequence of two closely-related factors: slower improvement over time relative to other countries (particularly since the start of the 1980s), and wider health inequalities (which increased markedly, alongside their socioeconomic determinants, in that same period from the 1980s onwards); the scale of inequalities is obviously important because it impacts to a considerable degree on the country-level average.<sup>6-9</sup> These detrimental trends of slower improvement linked to widening health inequalities have become much worse since the early 2010s as a direct consequence of the UK Government's 'austerity' measures (in essence, cuts to social security and important public

<sup>i</sup> Specifically: Lanarkshire + health; Lanarkshire + mortality; Lanarkshire + death\*; Lanarkshire + illness; Lanarkshire + morbidity; Lanarkshire + "life expectancy"; Lanarkshire + well-being/wellbeing.

services) which were introduced following the 2008 recession, and which have had a devastating effect on the poorest and most vulnerable populations — not just in Scotland, but across the UK<sup>10</sup>. As a consequence, mortality rates stopped improving around 2012, and death rates in more deprived areas actually started to increase (Figure 1), with particularly dramatic reversals of previously improving rates seen for deaths under the age of 65 years (premature mortality) (Figure 2). The consequent widening

of inequalities has been made worse by the COVID-19 pandemic, and there is evidence that the current ‘cost of living crisis’ will have a further, negative, impact on premature mortality rates<sup>11,12</sup>. All these factors — wide inequalities, slow rate of improvement, detrimental trends caused by austerity and made worse by COVID and the current economic crisis — all equally apply to Lanarkshire. However, on top of these, other issues need to be taken into account.

Figure 1. Age-standardised all-cause mortality rates (females, all ages), three-year rolling averages, for Scotland and its most and least deprived quintiles, 1981-2021.

Note: the black dotted line represents the start of the period of austerity policies introduced by the UK Government, and the purple dotted line (and shading) marks the period which includes deaths from COVID-19.

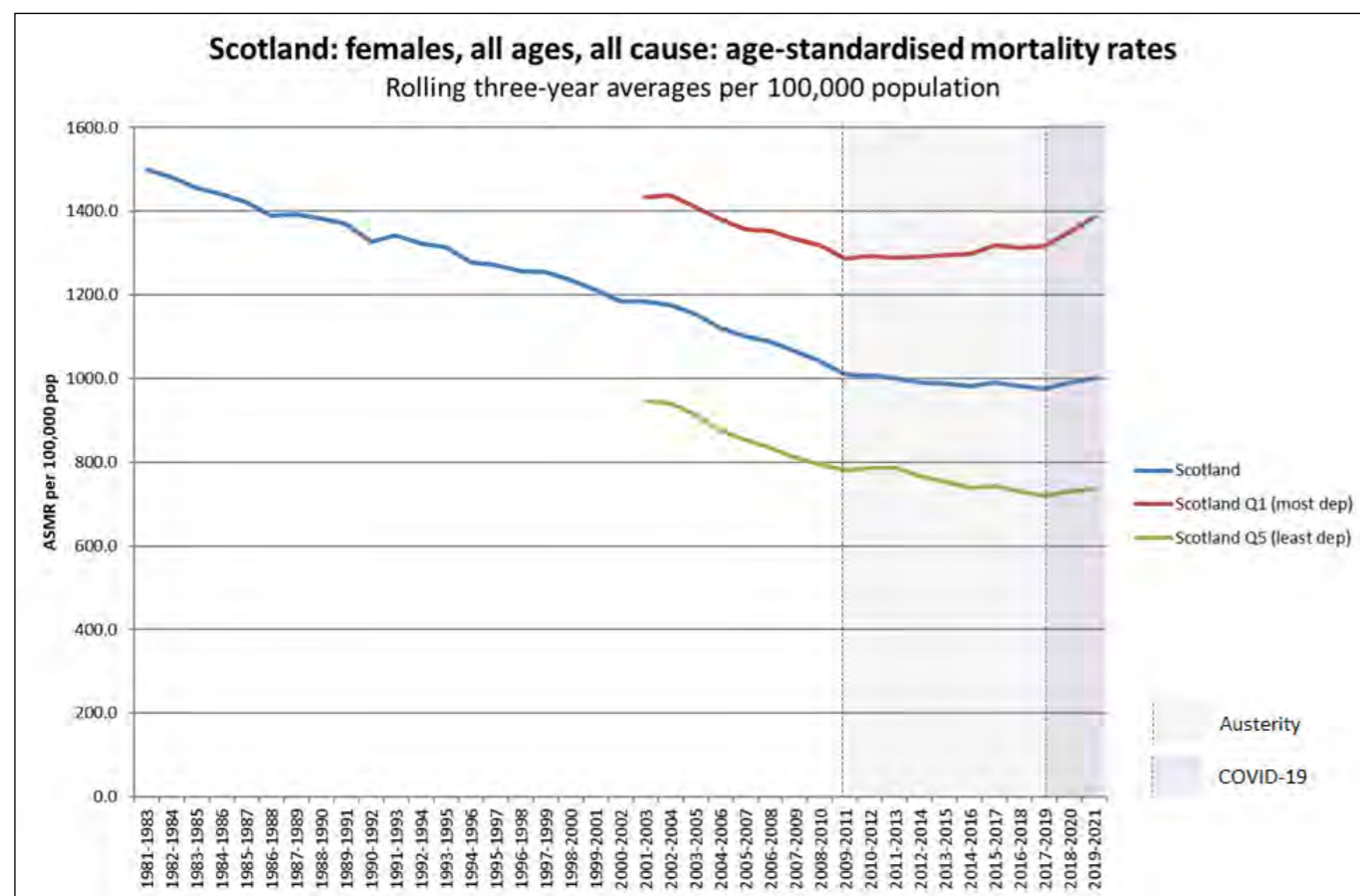
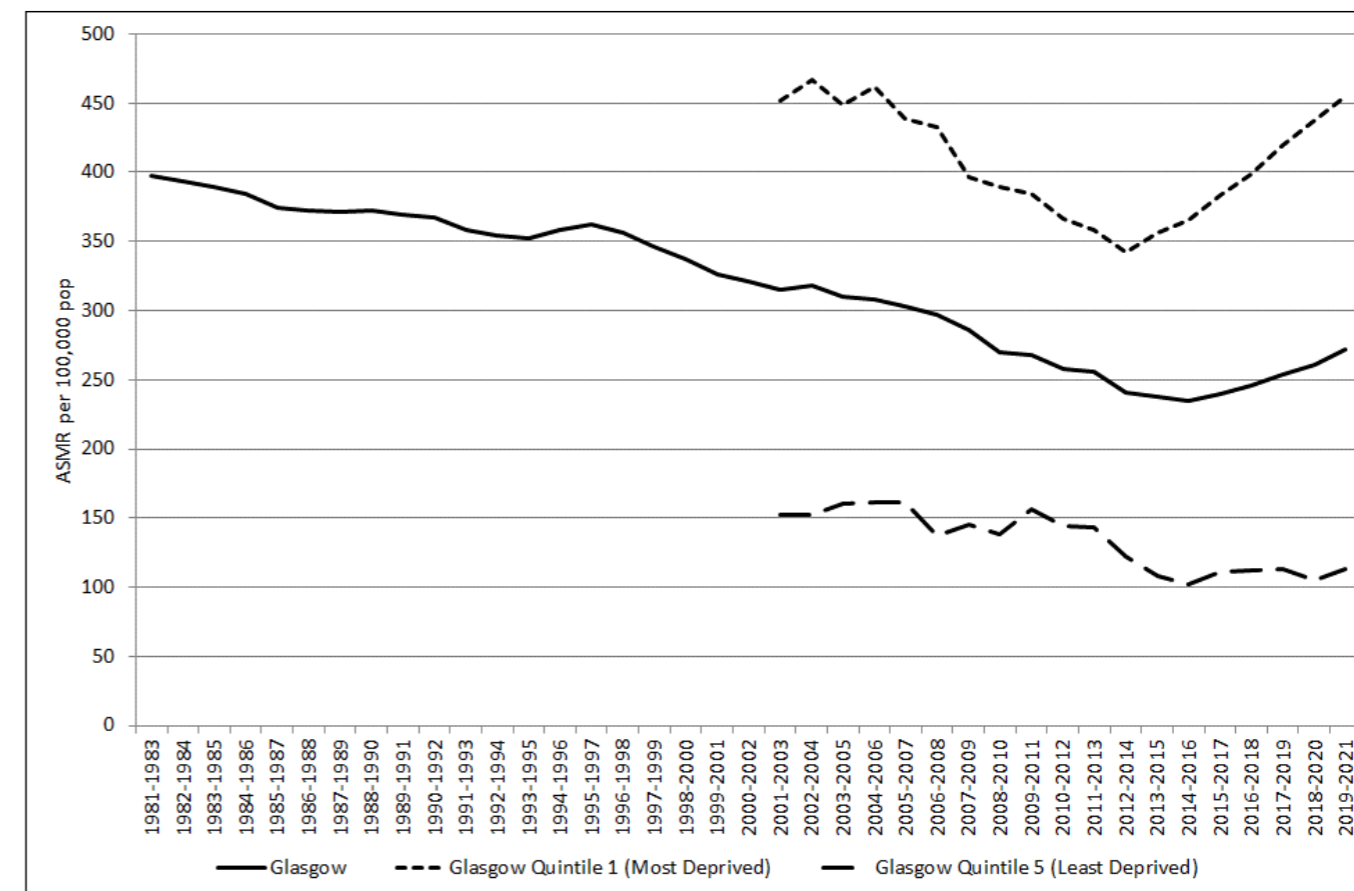


Figure 2. Age-standardised all-cause mortality rates (females, 0-64 years), three-year rolling averages, for Glasgow and its most and least deprived quintiles, 1981-2021.



### Lanarkshire

As in many other countries<sup>9,13</sup>, the regions with the worst levels of health in Scotland are those which were formally industrial, but which have since suffered the profound effects of deindustrialisation – a process which was accelerated from the 1980s onwards. Lanarkshire is one such region. Deindustrialised regions suffer from poorer population health for different, complex, reasons including the historical impact of harmful industrial working conditions, and the later effects of loss of employment, high levels of poverty, de-skilling and role redefinition.<sup>14-20</sup>

A large body of epidemiological work was undertaken between 2008 and 2011 which compared health outcomes and their determinants in West Central Scotland (a region incorporating eleven local authority areas including Lanarkshire) with those in other UK and western and eastern mainland European regions which had experienced similar levels of deindustrialisation (as defined by industrial job loss) in the latter half of the twentieth century.<sup>9,13,14,21</sup>

The results:

- confirmed that all post-industrial regions tended to have the poorest health within their own countries;
- showed that health outcomes in the Scottish region were worse than the other, comparably deindustrialised, European areas;
- demonstrated that West Central Scotland had wider socioeconomic and, as a consequence, health inequalities;
- highlighted better policymaking in the other non-UK regions which protected the health of the populations to a much greater degree.

The above research examined a broad range of data sets up to the late 2000s. Since then Lanarkshire (alongside other deindustrialised regions in Scotland) has experienced the same series of further adverse events as Scotland and the rest of the UK: recession; austerity (which still continues – and which, importantly, we know has disproportionately affected poorer, post-industrial, parts of the UK<sup>22,23</sup>); COVID-19; and the current cost-of-living crisis. Thus, in Lanarkshire an existing historical vulnerability has been made much worse by recent events.

New analyses of long-term trends in mortality in Lanarkshire (including comparison of its most and least deprived communities) are presented below, under RQ 2. However, the Lanarkshire-specific searches of research databases and broader online material, while helping identify data sources relevant to RQs 3 and 4, did not uncover any particularly insightful studies relevant to broad population health issues in the region. Studies identified from the *literature* databases tended to focus on:

- healthcare-specific issues (e.g. hospital treatment; cancer treatment; waiting times; appointment attendance; palliative care; HIV testing in hospital; dental services; pain management audits; the psychiatric State Hospital at Carstairs; clinical networks; infectious disease outbreaks; and, especially, the issue of drugs and addiction services)
- broader health improvement services and activities (e.g. breastfeeding; prescribing; smoking cessation; sexual health; breast-screening; healthy food initiatives)

While some more broad epidemiological analyses were identified, they did not greatly add to existing knowledge (e.g. analyses of the relationship between material deprivation and risk of specific diseases such as heart failure in the region)<sup>ii</sup>.

Aside from the various data sources discussed under RQ 3 on page 15, the broader internet searches tended to identify particular news stories that were less relevant to the project, as well as similarly less pertinent organisational strategy documents and issues relating to specific health and social services in the region.

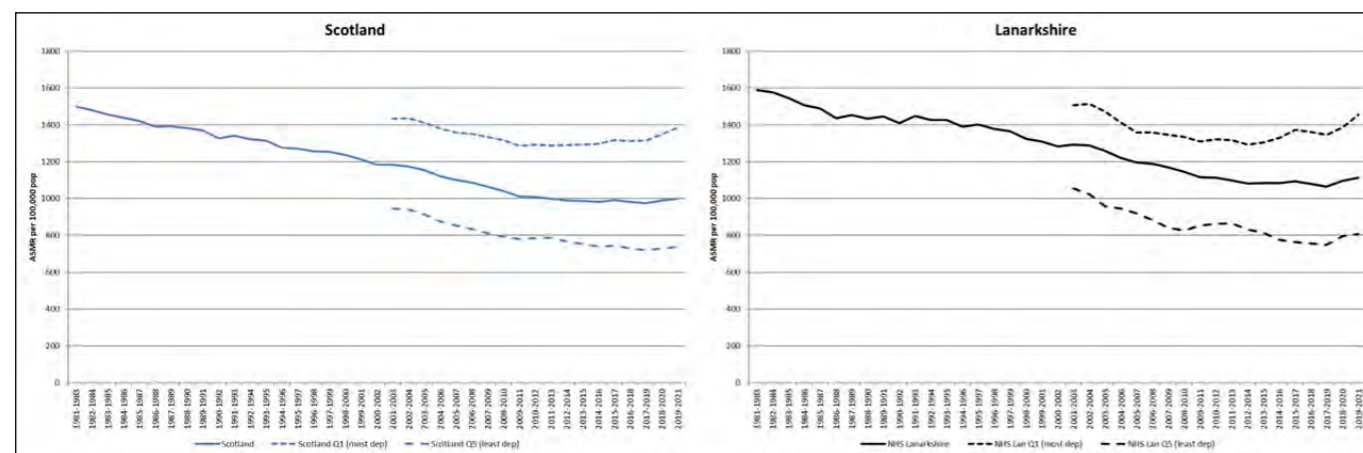
**RQ 2: What do long-term Lanarkshire-specific mortality trends show (including for specific areas of concern such as deaths from alcohol, drugs and suicide)?**

**All-cause deaths**

The recent, deeply concerning, mortality trends highlighted for Scotland above in relation to RQ 1 — ‘a stalling’ of previous improvement at the country level since the early 2010s, increasing death rates among those living in more socioeconomically deprived areas, widening inequalities, and particularly concerning changes in premature mortality rates — have also been observed within the Lanarkshire area. Mortality rates also tend to be slightly higher in Lanarkshire, reflecting the area’s worse socioeconomic profile (and, potentially, its industrial legacy). However, with fewer deaths in absolute terms, and a smaller population size<sup>iii</sup>, mortality rates in the region can fluctuate over time, making overall patterns and trends less easy to discern; this is particularly the case with less common causes of death.

As a first example, Figure 3 compares the mortality trends for all females in Scotland (already shown above in Figure 1) with those of females residing in the Lanarkshire area. Although rates in Lanarkshire are slightly higher, and fluctuate over time to a much greater degree, trends in the region are broadly similar to those seen in Scotland as a whole; this includes a clear increase in death rates among those living in the most deprived 20% of neighbourhoods of Lanarkshire since around 2012.

Figure 3. Age-standardised all-cause mortality rates (females, all ages), three-year rolling averages, Scotland and Lanarkshire (and their respective most and least deprived quintiles), 1981-2021.



The dramatic changes to *premature* mortality rates that have been observed in the last decade (already shown for Glasgow in Figure 2) are shown for Lanarkshire (black lines) compared to Scotland (blue lines) in Figures 4 (females) and 5 (males) respectively. These astonishing changes mean that for both sexes, death rates in Lanarkshire are higher now (2019/21) than they were 20 years ago.

<sup>ii</sup>A lot of literature focussed on a 2015 legal case (Montgomery v NHS Lanarkshire Health Board) regarding medical treatment consent practices.

<sup>iii</sup>In 2021, the population size of the NHS Lanarkshire area was c. 664,000, approximately 12% the size of Scotland.

Figure 4. Age-standardised all-cause mortality rates (females, 0-64 years), three-year rolling averages, Scotland and Lanarkshire and their most and least deprived quintiles, 1981-2021.

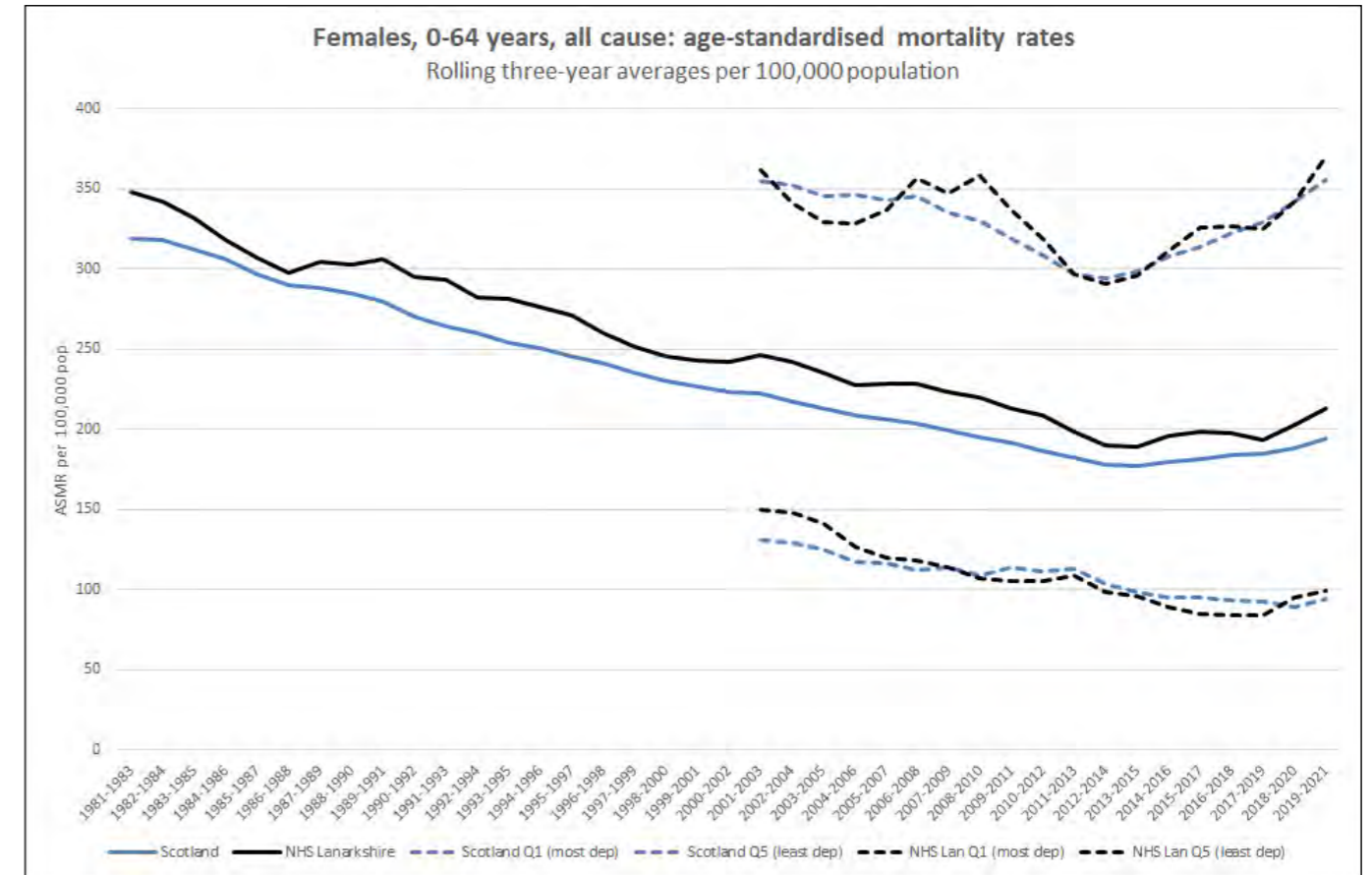
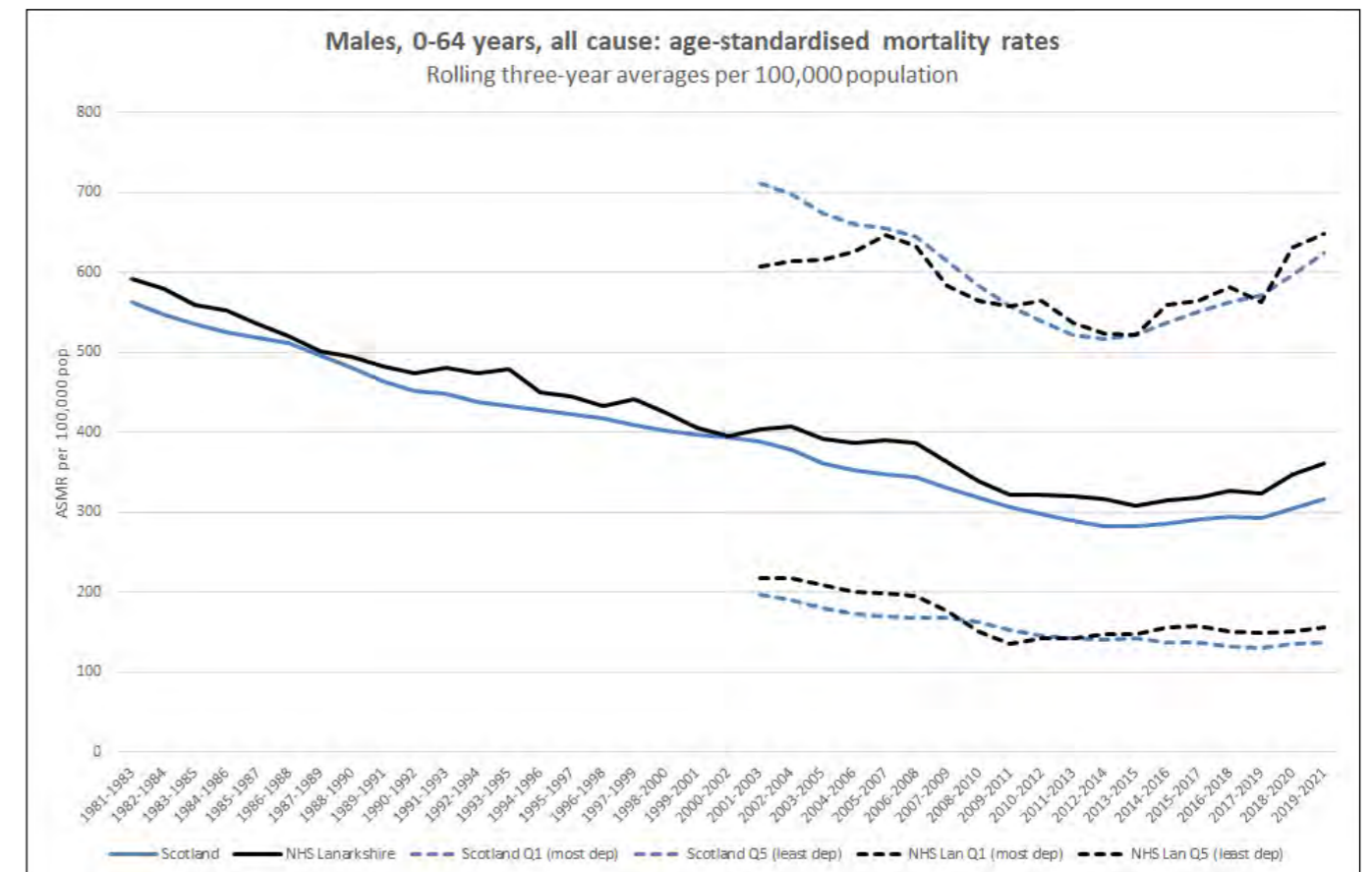


Figure 5. Age-standardised all-cause mortality rates (males, 0-64 years), three-year rolling averages, Scotland and Lanarkshire and their most and least deprived quintiles, 1981-2021.



**Deaths from drugs, alcohol and suicide**

Some (but not all) of the increases in premature mortality that have been observed in Scotland since 2012 are likely due to increases in **drug-related deaths**<sup>10</sup>. Although, as is well known, death rates for this cause have increased consistently since the 1980s, there is clear evidence that the particularly sharp increases seen in the last decade have been associated with the same austerity policies discussed earlier<sup>10, 24-8</sup>. These trends in both Lanarkshire and Scotland (and their respective least and most deprived populations) are shown in Figure 6. These data are for males; however, similar trends have been observed for females (data not shown).

Trends in **alcohol-related mortality** in Scotland present a complicated picture. For males (Figure 7), mortality rates increased sharply in the early 1990s, peaking in the early (Scotland) or mid (Lanarkshire) 2000s. Rates then declined until c.2012 (the year most austerity-related changes commenced<sup>10, 29</sup>) when they started to increase once more. The changes since c.2012 have been more acute among more deprived populations (albeit that greater fluctuation in the rates for Lanarkshire obscures the overall picture to a degree). Trends for females are similar, but with considerably more fluctuation in rates (data not shown).

Figure 6. Age-standardised mortality rates for drug-related poisonings<sup>iv</sup> (males, all ages), three-year rolling averages, Scotland and Lanarkshire and their most and least deprived quintiles, 1981-2021.

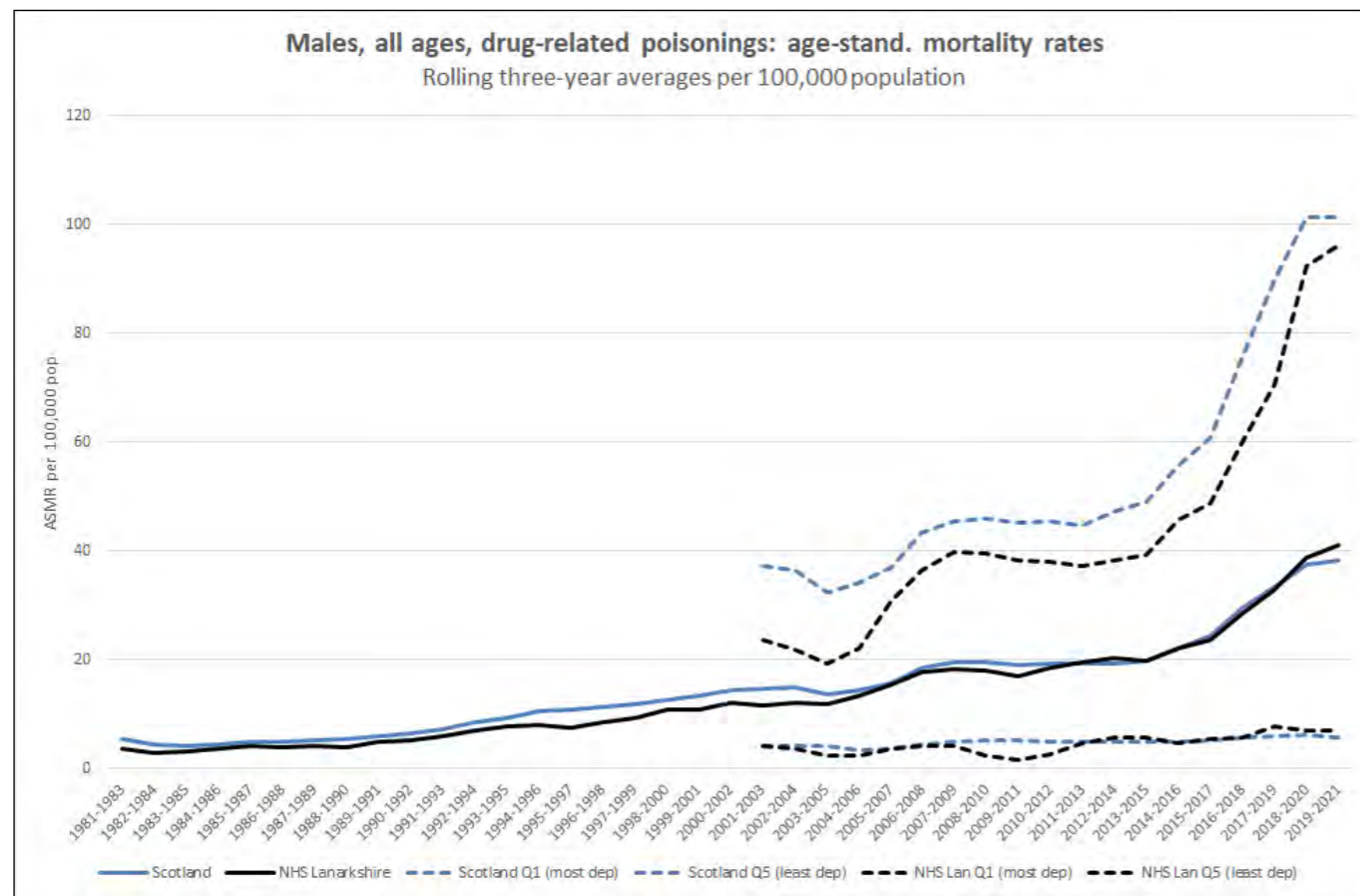
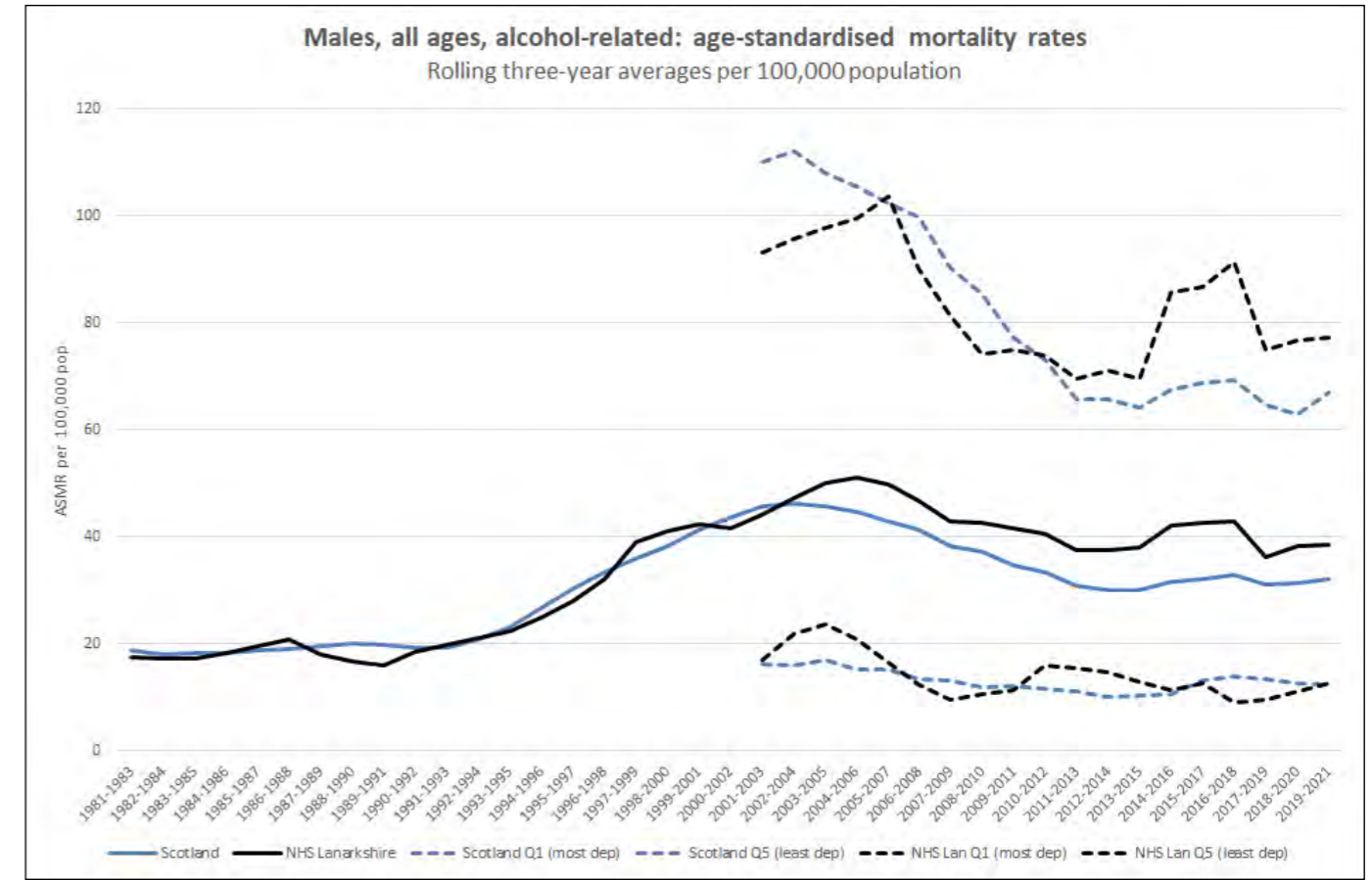


Figure 7. Age-standardised mortality rates for alcohol-related causes (males, all ages), three-year rolling averages, Scotland and Lanarkshire and their most and least deprived quintiles, 1981-2021.



**Suicide** rates fluctuate considerably over time, even at the national level. Figure 8 shows generally increasing trends in male suicide deaths between the start of the 1980s and the early 2000s; these either then declined (Scotland) or fluctuated (Lanarkshire) between that point and the early 2010s. Mortality rates increased sharply in the last period: however, whether this is the start of a new, upward, trend, or just further fluctuation in rates is presently unclear. However, this increase was particularly notable among those living in the 20% most deprived areas.

A fairly mixed picture emerges from all these analyses, not least due to the fluctuations in rates that have been already highlighted. Figures 6-8 have already shown a widening of inequalities in alcohol- and drug-related mortality and, to a less clear degree, suicide; similar adverse trends can also be seen for ischaemic heart disease (IHD) for both males and females, and for deaths from cerebrovascular disease (stroke) for males only. Contrasting trends for males and females are evident for all cancers and lung cancer: widening inequalities for females<sup>31</sup>, narrowing inequalities for males. For lung cancer, this reflects well known historical cohort differences, with later uptake of tobacco among females. Improvements (declining rates overall, narrowing inequalities) are evident for deaths from respiratory disease for both sexes, albeit that the reduction in in the last two to three years is likely to be attributable — at least in part — to older people dying from COVID-19 who might otherwise have died from a different respiratory condition. All these trends are shown for females in Figure 9 and males in Figure 10.

Death rates from this cause among females are lower, and fluctuate to an even greater extent over time than for males, and are not shown here.

**Common causes of death**

Mortality trends for eight common causes of death (including those presented above) are presented in Figures 9 and 10. These are for Lanarkshire only; identical trends for Scotland are available elsewhere<sup>30</sup>.

<sup>iv</sup>As explained elsewhere<sup>10, 22</sup>, the definition of drug-related poisonings used in these analyses is broader and less precise to that used by the National Records of Scotland in their analyses of drug-related deaths. The absolute number of drug related poisonings tends to be slightly higher than the number of officially-recorded drugs-related deaths; however, the broad trends are very similar.

Figure 8. Age-standardised mortality rates for suicide (males, all ages), three-year rolling averages, Scotland and Lanarkshire and their most and least deprived quintiles, 1981-2021.

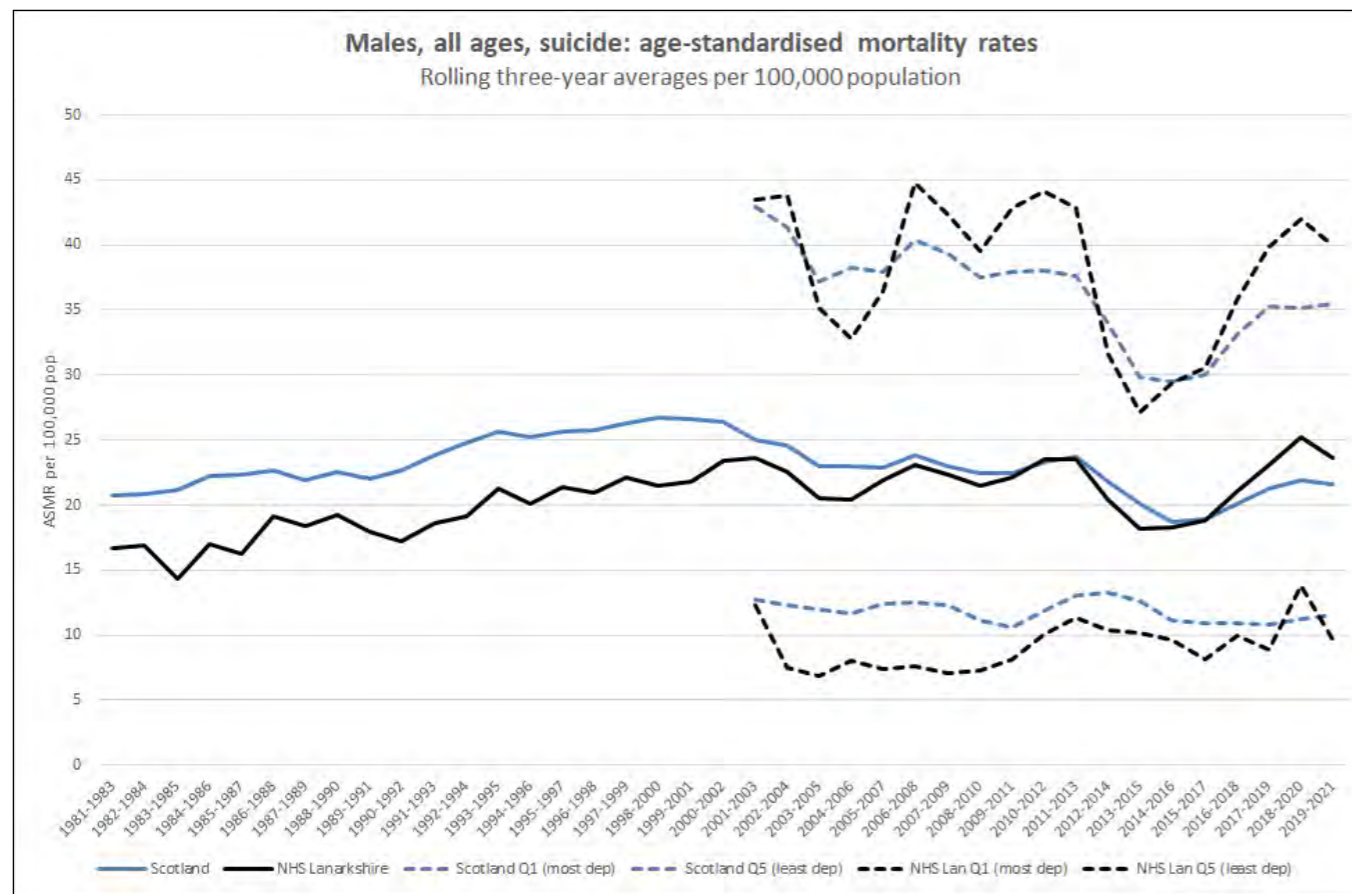


Figure 9. Age-standardised mortality rates for eight causes of death (females, all ages), three-year rolling averages, Lanarkshire and its most and least deprived quintiles, 1981-2021.

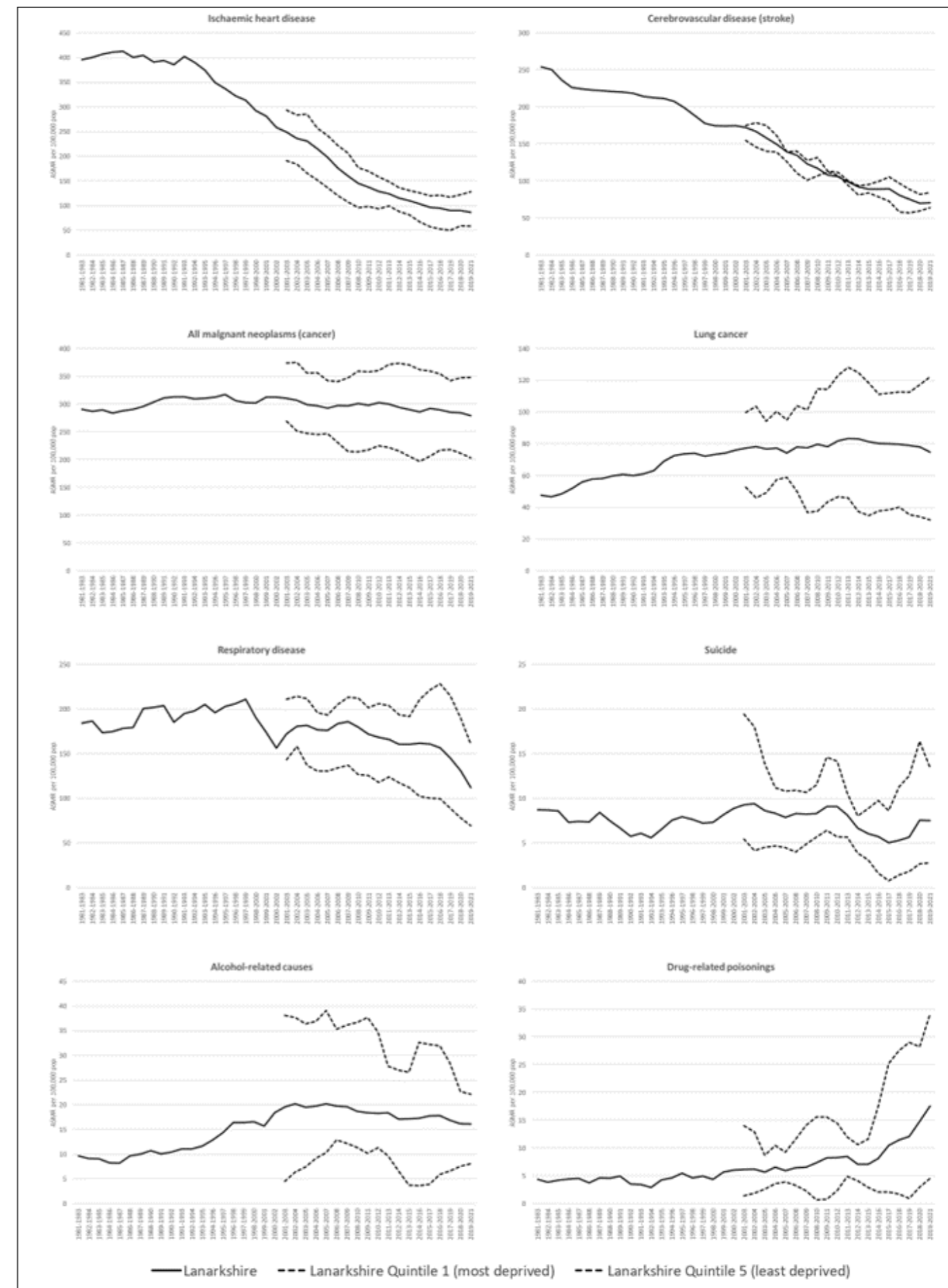
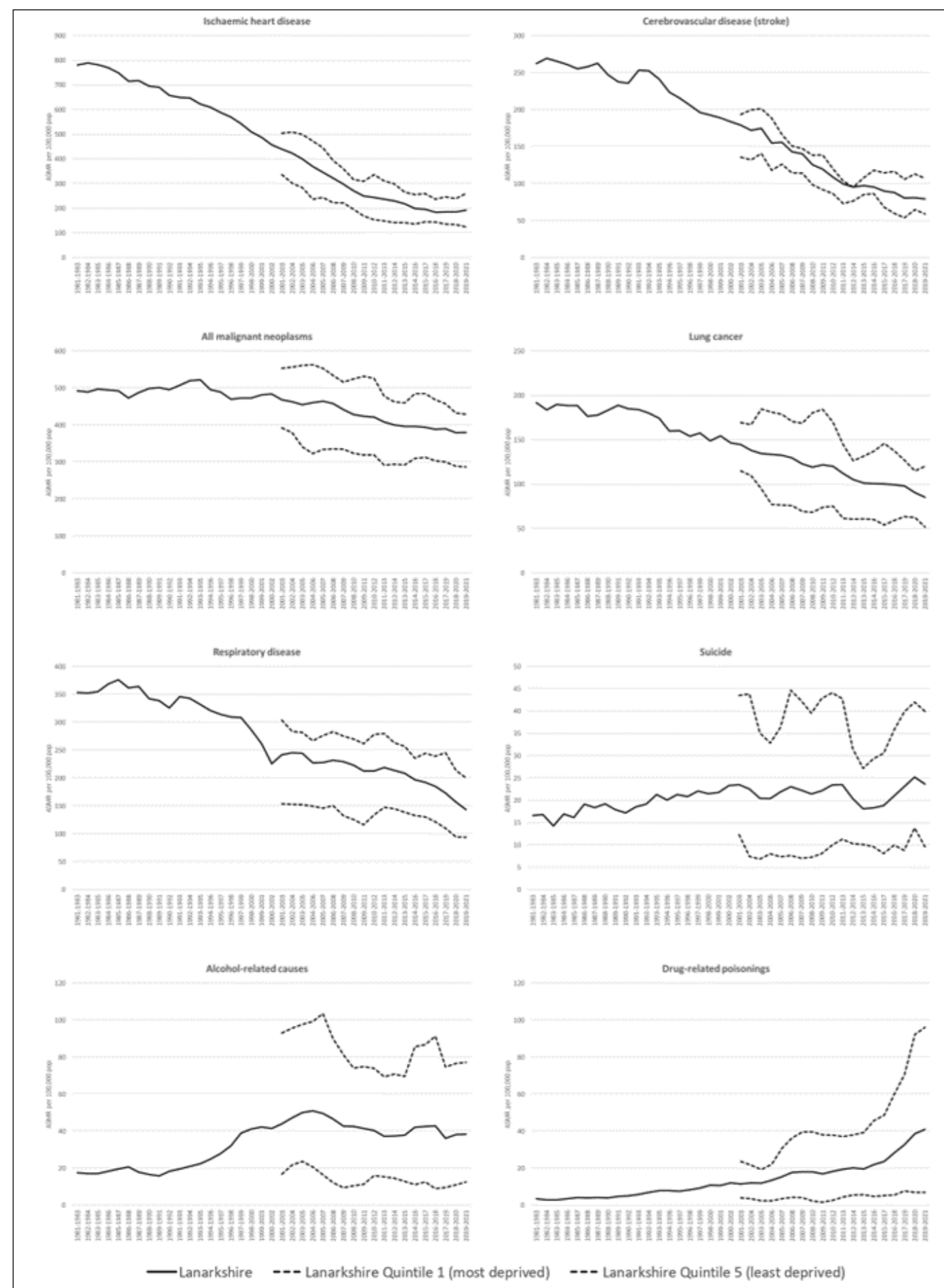


Figure 10. Age-standardised mortality rates for eight causes of death (males, all ages), three-year rolling averages, Lanarkshire and its most and least deprived quintiles, 1981-2021.



**RQ 3: What other data sources are available to describe health, inequalities in health, and inequalities in health determinants in the Lanarkshire area?**

The search and assessment process identified the following data sources (with each briefly described further below).

- ScotPHO (Scottish Public Health Observatory) profiles:
- Locality profiles
- National Records of Scotland (NRS) council profiles, and other routine 'vital events' data
- Alcohol Focus Scotland reports
- Scottish Burden of Disease reports
- Public Health Scotland (PHS) routine data
- The State of South Lanarkshire's Environment
- South Lanarkshire HSCP Strategic Needs Analysis
- Other sources of information

**ScotPHO profiles<sup>32</sup>**

This is an online profiling tool which enables access to, and presentation of, data at different geographical levels including NHS Board area (e.g. NHS Lanarkshire), council areas/HSCPs and 'neighbourhoods': the latter are so-called 'intermediate zones' (IZs) with an average population size in Lanarkshire of 4,150<sup>33</sup>. At NHS Board level, approximately 60 different indicators are available; at IZ level, a subset of 27 indicators can be accessed. These can be grouped under headings such as:

- behaviour (e.g. smoking prevalence, alcohol-related admissions)
- child (& maternal) health (e.g. breastfeeding, child dental health)
- morbidity & mortality (e.g. hospitalisations, deaths, life expectancy)
- physical environment (e.g. proximity to derelict land)
- social environment (e.g. crime, education)
- socioeconomic conditions (e.g. income deprivation).

**Locality profiles**

Two sets of locality profiles were accessed and assessed: the HSCP Locality Profiles 2022 for North Lanarkshire<sup>34</sup>, and the South Lanarkshire area profiles<sup>35</sup>.

The North Lanarkshire profiles provide data for N. Lanarkshire HSCP 'localities' (e.g. Airdrie, Bellshill) as well as the IZs within those localities. The indicators are very similar to those included within the ScotPHO profiles, and are grouped under these headings:

- population
- life expectancy
- poverty and deprivation
- mother and baby indicators
- early deaths
- hospital admissions
- (social security) benefits.

The South Lanarkshire area profiles in an online resource which includes a detailed set of indicators made available for a wide range of diverse geographical units, from all of S. Lanarkshire down to individual datazones (datazones are an administrative unit with an average population size of only c.750<sup>1</sup>). The system allows the generation of reports for these different geographically defined areas, containing information on:

- communities and environment (e.g. population, deprivation, crime, access to services, and much more)
- education and learning (e.g. educational attainment)
- health and wellbeing (e.g. maternal and mortality data, social work referrals)
- children and young people (e.g. free school meals, early years places, child poverty)
- housing & land (e.g. council housing stock)
- economy (e.g. social security claimants, household income estimates).

**National Records of Scotland (NRS) profiles/data**

NRS provide profiles of all council areas in Scotland (including, therefore, North<sup>36</sup> and South<sup>37</sup> Lanarkshire) which include detailed figures and (usually 20 year) trends in different topics i.e.:

- population estimates
- population projections
- births
- deaths
- life expectancy
- migration
- marriages and civil partnerships
- household estimates
- household projections
- dwellings.

**Alcohol Focus Scotland reports<sup>38,39</sup>**

This research was undertaken by Alcohol Focus Scotland (AFS) and the Centre for Research on Environment, Society and Health (CRESH) to examine the links between alcohol-related health harm, crime, poverty and the availability of alcohol outlets. The research was published in 2018 as reports which provide maps of alcohol harm, outlet availability and crime within both Lanarkshire council areas. Updated data will be made available through a CRESH 'web mapper' in due course<sup>40</sup>.

**Scottish Burden of Disease reports<sup>41,42</sup>**

These brief reports include data on the prevalence of specific diseases in the two council areas of Lanarkshire. They include fairly limited information on the leading causes of ill health and early death in the areas, how these compare both with Scotland, and between less and more deprived areas in the council areas.



### The State of South Lanarkshire's Environment<sup>43</sup>

South Lanarkshire council publishes a report on the 'State of the Environment' biennially; the most recent is from 2021. The reports provide detailed environmental information for the South Lanarkshire area (all compared to the national (Scottish) picture). It contains a large number of environmental indicators under the following headings:

- Population and human health (e.g. population size, life expectancy, death rates, survey measures of mental health and health behaviours)
- Biodiversity, flora & fauna
- Historic and cultural heritage (e.g. 'built heritage' sites, gardens & designed landscapes, archaeological sites)
- Material assets and landscape (e.g. vacant/derelict land, recreational land, minerals)
- Waste (e.g. waste generation, treatment, and management)
- Soils (e.g. soil quality, land use, contaminated land)
- Air, noise and light (e.g. air quality, noise complaints)
- Water (quality, pollution, flooding etc)
- Climate change (greenhouse gas emissions, transport emissions, energy consumption etc)
- Transport (survey measures of active and non-active travel, traffic growth, congestion etc)

### South Lanarkshire HSCP Strategic Needs Analysis<sup>44</sup>

Published last year (2022), this report is part of the South Lanarkshire HSCP's Strategic Commissioning Plan for 2022-2025. It includes a range of routinely available information (which overlaps with much of what has been listed above), collated under these headings:

- Demographics
- Population Projections
- Life Expectancy
- Care at Home
- Care Home Admissions
- Unscheduled Care
- Delayed Discharges
- Long Term Conditions
- Children and Young People
- Mental Health
- Last 6 months of life
- Health Inequalities

### Other sources of information

Alongside all the above, a range of other highly relevant information is available at both council (i.e. for both North and South Lanarkshire areas) and NHS Board area level. These include data from **national surveys** such as the Scottish Health Survey, Scottish Household Survey,

Scottish House Condition Survey, Scottish Schools Adolescent Lifestyle and Substance Use Survey, and more. These and other survey resources are listed on the relevant section of the ScotPHO website<sup>45</sup>. The 'data and intelligence' section of **Public Health Scotland** enables access to a vast amount of other health service related data (again, primarily at council/HSCP and NHS Board level)<sup>46</sup>. This includes: cancer; child health; deaths; dental care; drugs & alcohol misuse; emergency care; general practice; health conditions; heart disease; hospital care; maternity & births; mental health; prescribing & medicines; sexual health; stroke. Finally, a range of other reports are available, such as NHS Lanarkshire **Director of Public Health Annual Report**<sup>47</sup>; however, these tend to use much of the same data as that discussed above.

### RQ 4: What do those data sources tell us about health and health inequalities in the region, and what information do they not provide (i.e. what are the key gaps)?

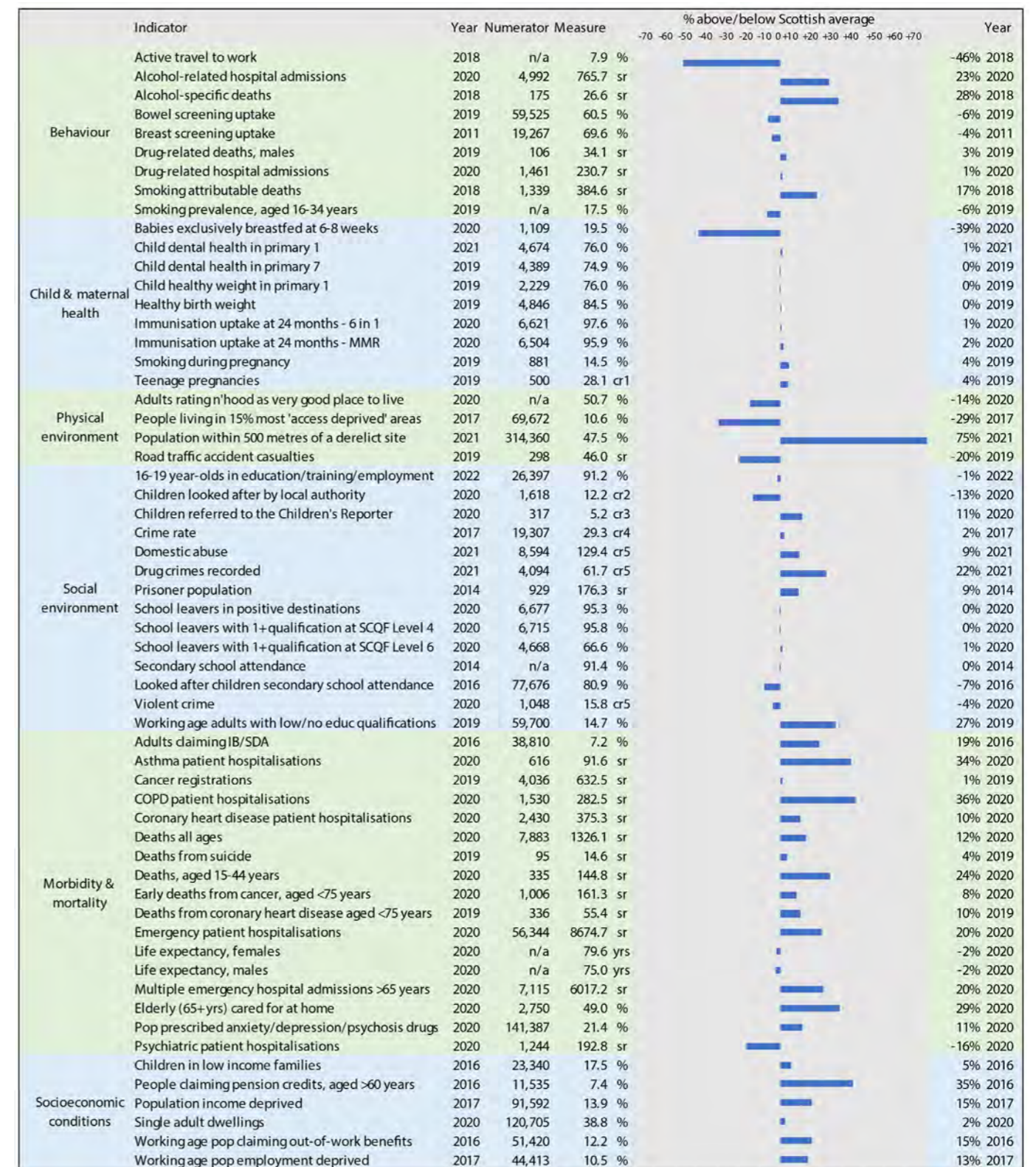
#### Using data to profile Lanarkshire and its communities

An analysis of all the above information is clearly beyond the scope of this project. Instead, two illustrative examples are presented, using data from the first of the data sources listed above, the ScotPHO profiles<sup>32</sup>.

The first example is based on the extraction of the c.60 indicators available at NHS Board level. Comparing these indicators for Lanarkshire with Scotland provides an overview of how the region as a whole fares in terms of a broad range of key, health-related, topics: behaviour, child & maternal health, morbidity & mortality, physical environment, social environment and socioeconomic conditions. This overview is presented in Figure 11. The actual value of each indicator is shown (as a crude rate standardised rate or percentage) as well as — for the key purpose of comparison — the extent to which it differs from the national figure: this is presented graphically as a percentage above or below that national figure.

This shows, first, that the value of many indicators is very close to the Scottish average (e.g. most child and maternal health indicators). However, the region is more socioeconomically deprived than Scotland (as seen, for example, in higher levels of income and employment deprivation, and people claiming pension credits) and, consequently, it compares relatively poorly across a range of health outcome indicators (morbidity and mortality), the values of which tend to be worse than those of Scotland as a whole (e.g. patient hospitalisations for COPD (chronic obstructive pulmonary disease) are 38% higher in Lanarkshire than in Scotland<sup>v</sup>. The indicators which stand out as being particularly different (worse) in Lanarkshire compared to Glasgow are: active travel to work; babies being exclusively breastfed at 6-8 weeks; and the proportion of the population living within 500 metres of a derelict site.

Figure 11. Health-related indicators: Lanarkshire compared to Scotland<sup>vi</sup>



The second example uses data at neighbourhood (IZ) level to present a picture of inequalities (across all these health-related domains) within the Lanarkshire region. Figure 12 compares a subset of 27 indicators between a relatively affluent area (the IZ described as covering

'Thorntonhall, Jackton & Gardenhall') (Figure 12a) and a relatively deprived area (the IZ described as covering 'Craigneuk Wishaw') (Figure 12b). In both 'data spine' charts, the values of the indicators are again compared with the national values. The obvious point to note is that

<sup>v</sup>Higher rates of COPD may also reflect the region's industrial (health-harming) history.

<sup>vi</sup>Abbreviations used in Figure 11: sr = standardised rate per 100,000 population; cr1 = crude rate per 1,000 females aged 15-19; cr2 = crude rate per 1,000 children aged 0-17 years; cr3 = crude rate per 1,000 children aged 8-15 years; cr4 = crude rate per 1,000 population; cr5 = crude rate per 10,000 population; yrs = years; IB = incapacity benefit; SDA = severe disability allowance.

while the first area compares very favourably with Scotland across virtually all indicators, the second does not: one chart is like a mirror image of the other. This demonstrates

that Lanarkshire's more deprived areas compare badly not just in terms of one or two health related indicators, but across them all.

Figure 12. Comparison of health-related indicators for two contrasting communities in Lanarkshire<sup>vii</sup>.  
Figure 12a: 'Thorntonhall, Jackton & Gardenhall'

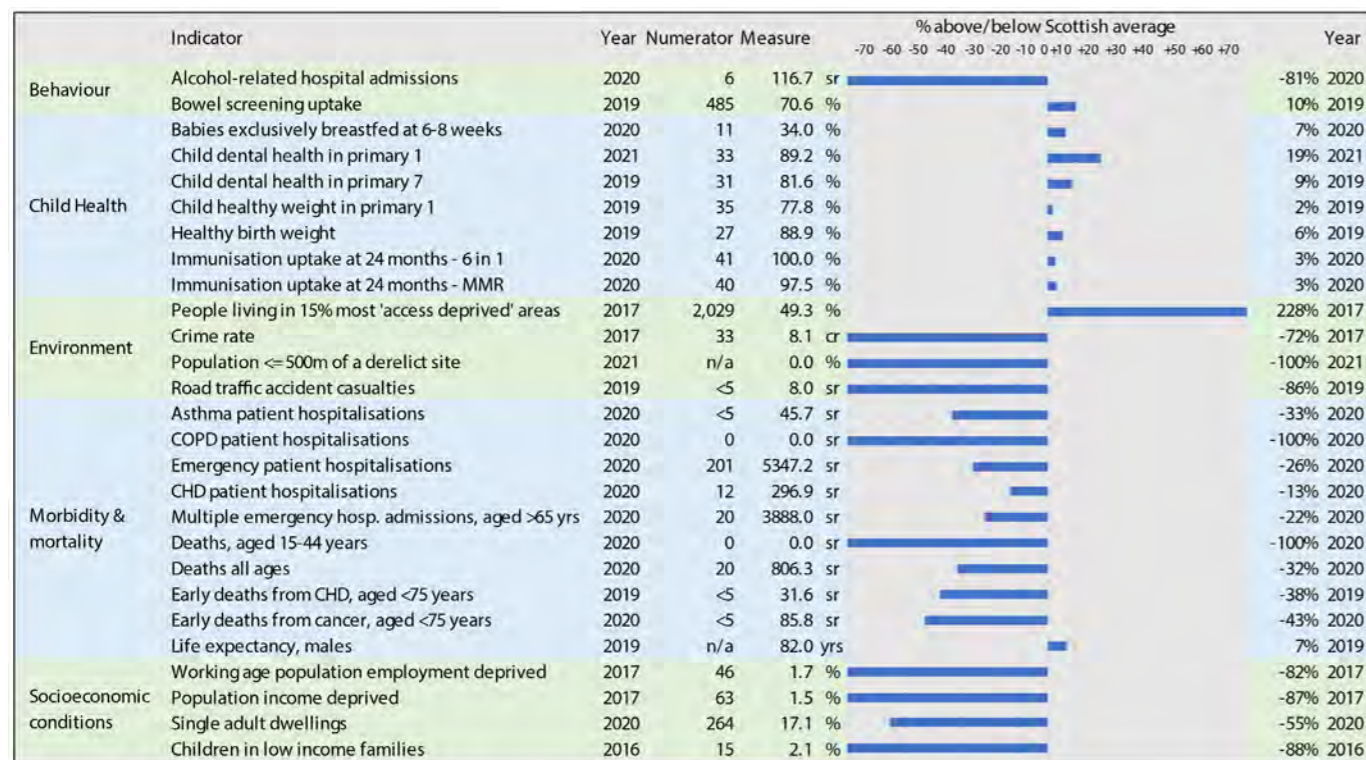
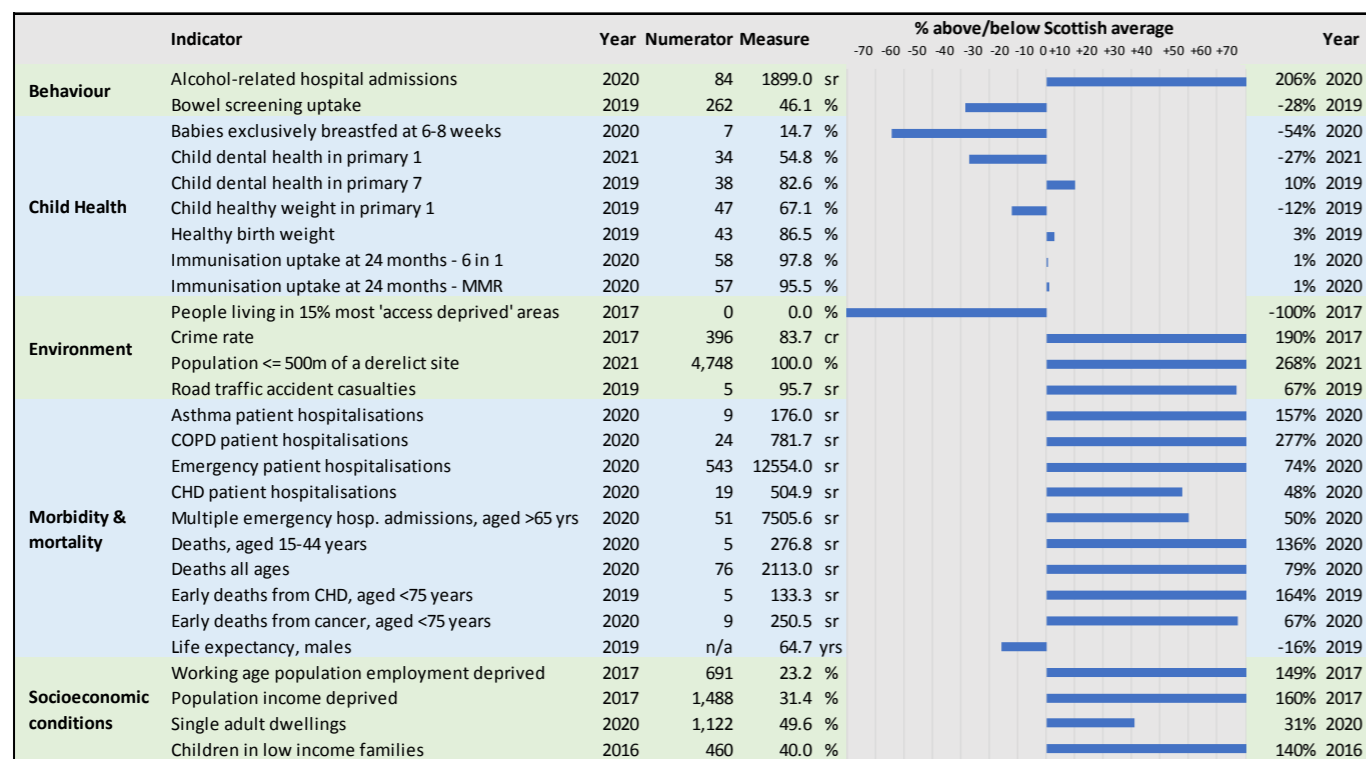


Figure 12b: 'Craignek Wishaw'



<sup>vii</sup>Abbreviations used in Figure: sr = standardised rate per 100,000 population; cr = crude rate per 1,000 population; yrs = years;

### Gaps in information

This section of the report has shown that there is a lot of routinely available data collected for the Lanarkshire area which can be used to assess multiple aspects of population health. However, there are some obvious advantages and disadvantages associated with these data. The advantages include:

- The sheer number of different indicators available, especially at larger geographical areas (NHS Board or local authority (LA) area). This includes the health profiling data listed and highlighted above, as well as a vast range of data that are available from national surveys (e.g. measuring housing conditions, quality of neighbourhood, health behaviours, self-assessed health (including measures of mental health)), council data on education, environment, policing etc., and data from national providers such as Public Health Scotland and the National Records of Scotland.
- Even at smaller geographical levels, a fairly large set of indicators is available: thus, a reasonably detailed profile of important health related factors can be compared between different parts of the region.
- As demonstrated in the previous section, these data can be used to effectively illustrate the scale of inequalities within the area.

Some obvious disadvantages regarding the available data include:

- As stated, less information is available at sub-LA level
- For some data, trends over time are very limited
- There is quite a lot of data that is published for some parts of Lanarkshire (e.g. especially the South Lanarkshire council area) but not for others
- Some data are rather out of date, being available from discontinued or 'one-off' data sources
- Some of the routinely available data — especially at smaller geographical levels — are heavily weighted to indicators of morbidity (e.g. hospitalisations) and mortality
- The geographical units used in some of the data sources are often not ideal (e.g. IZs)
- Census data can be used to supplement the information available for smaller geographical areas; however, such data are now twelve years out of date and therefore of questionable usefulness.

A more systematic assessment of data gaps can be made by comparing the various data sets and indicators available for the Lanarkshire region with key topics included in well-established models of health and health determinants. As stated in the Methods section, three such health determinant models were used for this purpose<sup>3-5</sup>. The resulting key gaps in data availability are listed. NB: this intended to be an illustrative, rather than exhaustive, list. As stated above, data availability differs by geographical level and other factors; thus, there is

a distinction between topics for which there is no information available at all, and where data exist but not necessarily at the right geography, for the correct time period, in a particular format, or according to a specific definition. The topics listed below relate mainly to the first category i.e. where no information at all is available. Note that many of these topics also overlap to a degree (e.g. poverty experiences, housing and forms of discrimination).

Key gaps in available data include:

- The political economy: what has been the impact on population health on health inequalities of historical local and regional policy making in Lanarkshire?
- Poverty experiences: we measure poverty very badly in Scotland (and the wider UK), often limited to, for example, counts of people in receipt of social security benefits, or with access to a car (as a proxy for income). Such measures very obviously fail to capture (and therefore monitor, compare and assess the impact of) the complex and diverse experiences of poverty including discrimination, stigma, feelings of self-worth, stress and much more. An ongoing programme of research by GCPH and the University of Glasgow is currently examining ways of measuring these many different facets of the experience of poverty<sup>48</sup>.
- Wealth and assets (and other aspects of prosperity)
- Racism (now increasingly understood as a fundamental cause of health inequalities)<sup>49,50</sup>
- Other forms of discrimination in relation to other 'protected characteristics', for example age, disability, religion, sex, sexual orientation
- Gender inequalities
- Social class inequalities
- Employment: assessment of quality of employment (rather than counts of job numbers and types)
- Housing: quality (including historically), allocation (e.g. of housing association properties) and more
- Wellbeing: broader measures of wellbeing, including particular aspects of mental health
- Social networks and social cohesion
- Disability (aligned to its different definitions and types)
- The impact of the commercial determinants of health: advertising, marketing etc of unhealthy commodities in the area
- Cultural influences

As stated, this is not intended to be (and arguably could never be) an exhaustive list. Its aim is to highlight some important areas relevant to health and wellbeing where little or no data is available for the Lanarkshire area.

## Conclusions

In summary:

- Even without access to detailed data sets and indicators, we know a lot about health and health inequalities in Lanarkshire. The national 'story' of low life expectancy (relative to other high-income nations) linked to wider inequalities and slower improving population health, and the devastating impact of austerity policies in the last decade, also apply to the region. However, Lanarkshire's history of deindustrialisation and associated higher levels of poverty means it has been particularly adversely affected by all these factors.
- The new analyses of mortality data presented here confirm this: mortality rates in Lanarkshire are higher, and the deeply concerning changes to trends and inequalities that have been observed nationally in the last ten years are mirrored in the region.
- There is a wide range of available data sources for Lanarkshire which can be used to measure, monitor and better understand health, health inequalities and their determinants.
- However, important gaps remain (particularly at community/neighbourhood level); some of these are highlighted in this report.

## Appendix

List of causes of death and associated International Classification of Disease (ICD) codes:

Cause	ICD9 code(s)	ICD10 codes
Respiratory disease	460-519	J00-J99
Ischaemic heart disease	410-414	I20-I25
Cerebrovascular disease	430-438	I60-I69
All malignant neoplasms	140-208	C00-C97
Lung cancer (malignant neoplasm of trachea/bronchus/lung)	162	C33-C34
Intentional self-harm (including events of undetermined intent)	E950-E959, E980-E989	X60-X84, Y10-Y34, Y87.0, Y87.2
Alcohol related causes <sup>viii</sup>	291, 303, 305.0, 425.5, 571.0-571.5, 571.8, 571.9, E860	F10, G312, G621, I426, K292, K70, K73, K740-K742, K746-K749, K860, X45, X65, Y15
Drug related poisonings <sup>ix</sup>	304, 305.2-305.9, E850-E858, E950.0-E950.5, E9620, E980.0-E980.5	F11-F16, F18, F19, X40-X44, X60-X64, X85, Y10-Y14

<sup>viii</sup> These are the groups of codes agreed by National Records of Scotland (NRS) and the (UK) Office for National Statistics (ONS) in 2007. They have since been updated, but the request for mortality data from national agencies pre-dated the change in codes.

<sup>ix</sup> These are the set of codes previously deemed most comparable between Scotland and England & Wales. See: Walsh D., Bendel N., Jones R., Hanlon P. It's not 'just deprivation': Why do equally deprived UK cities experience different health outcomes? *Public Health* 2010; 124: 487-495.

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