

## ScotPHO Gap Analysis Tool

This tool is an interactive resource designed to assist Community Health Partnerships (CHPs) and NHS Boards with local planning. It highlights key issues for consideration in reducing inequalities in life expectancy.

The tool provides information on the following:

- Life expectancy in CHP as a whole, and in Scotland's most deprived quintile (MDQ) residing in the CHP
- The gaps in life expectancy between the CHP and Scotland
- A breakdown of the causes of the life expectancy gap by disease type

The tool is accessed at <http://www.scotpho.org.uk/comparative-health/health-inequalities-tool/the-tool>.

### Background

The Scottish Health Inequalities Intervention Tool was commissioned by the Scottish Government, and is based on a tool developed by the London Public Health Observatory (on behalf of the Association of Public Health Observatories) and the Department of Health. The tool is designed to assist with local planning, and highlights key issues for CHPs to consider in order to reduce inequalities in life expectancy. The tool originally included two parts but the second part (which allowed CHPs to estimate the potential effect on their life expectancy gap if certain evidence-based interventions were increased) has been superseded with our more detailed published intervention tools.

### Interpreting the tool

The remaining "gap analysis tool" produces gap analysis charts (which show the contribution of different conditions to gaps in life expectancy; see chart 1) and scarf charts (a stacked bar chart summary of the gap analysis charts; see chart 2) comparing those people within Scotland's most deprived quintile (MDQ)<sup>1</sup> residing in the CHP compared to:

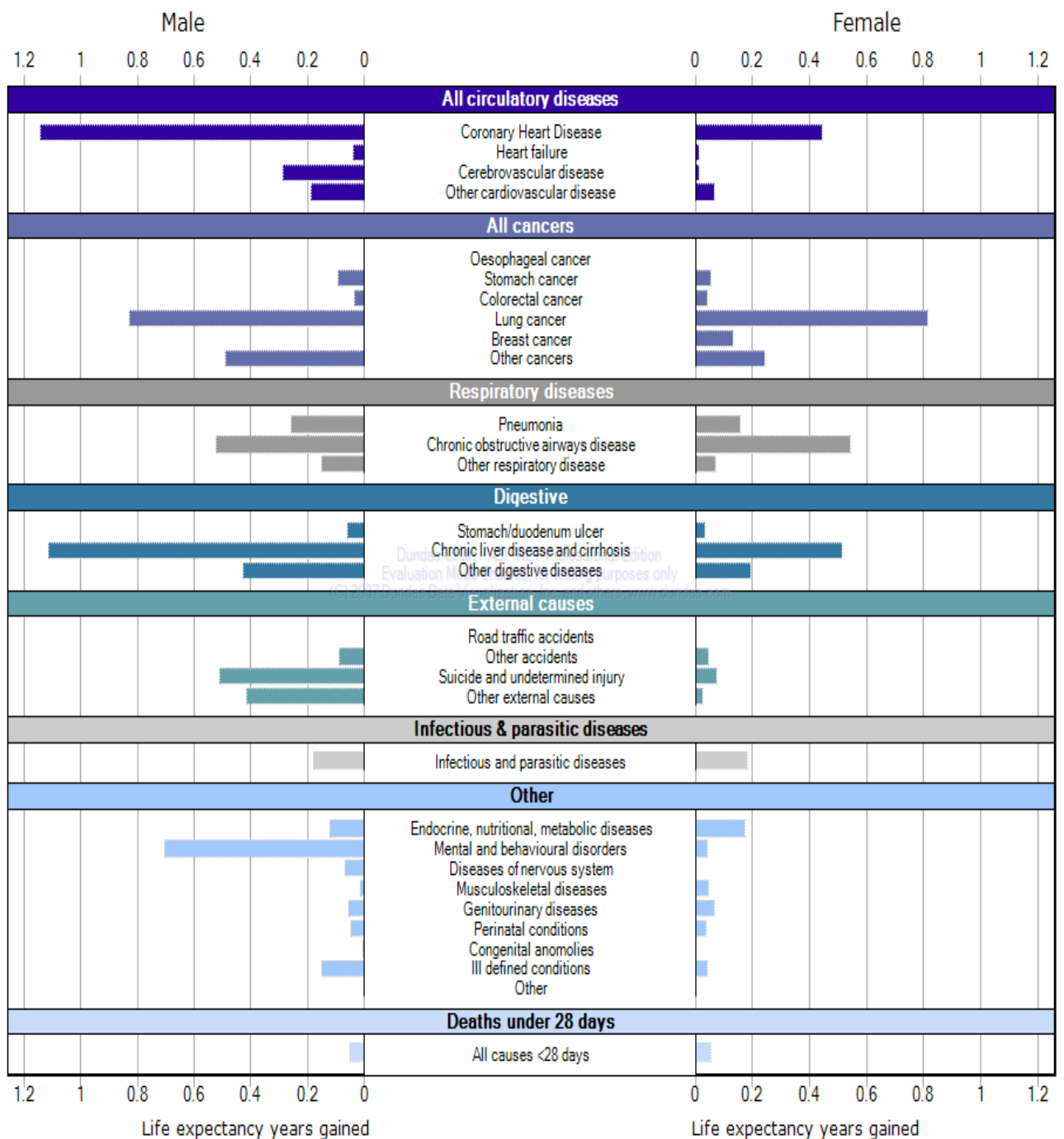
- a. The Scottish average
- b. Scotland's least deprived quintile (LDQ)
- c. Those in Scotland's least deprived quintile residing in the CHP

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<sup>1</sup> Using SIMD 2006 population-weighted deprivation quintiles

**Chart 1: Life expectancy years gained if the (Scottish scale) Most Deprived Quintile (MDQ) residing in East Glasgow CHCP had the same mortality rate as the Scotland average for each cause of death.**

See the [instructions page](#) for more information on how to interpret these charts.



In the example (chart 1) you can see that the biggest causes of the LE gap for males in East Glasgow CHCP are coronary heart disease and chronic liver disease and cirrhosis (both accounting for around 1.15 years). For females the biggest cause of inequalities is due to lung cancer (accounting for 0.8 years). Road traffic accident fatalities in this CHP are lower than the Scottish average and so do not account for any potential years gained.

The use of Scotland level deprivation quintiles (i.e. Scotland's MDQ residing in the CHP) means that for some CHPs (Shetland, Western Isles, Orkney and Moray) the population in the MDQ is too small to include them in the tool. In addition there were two CHPs for whom there were insufficient numbers in the Scottish least deprived quintile (LDQ) (East Glasgow and North Highland) and so the gap analysis comparisons can only be made to the Scottish average and to the LDQ in Scotland (and not to the LDQ in the CHP).

**Chart 2: Breakdown of life expectancy gap between the (Scottish scale) Most Deprived Quintile (MDQ) residing in East Glasgow CHCP and the Scotland average by cause of death**

See the [instructions page](#) for more information on how to interpret these charts.

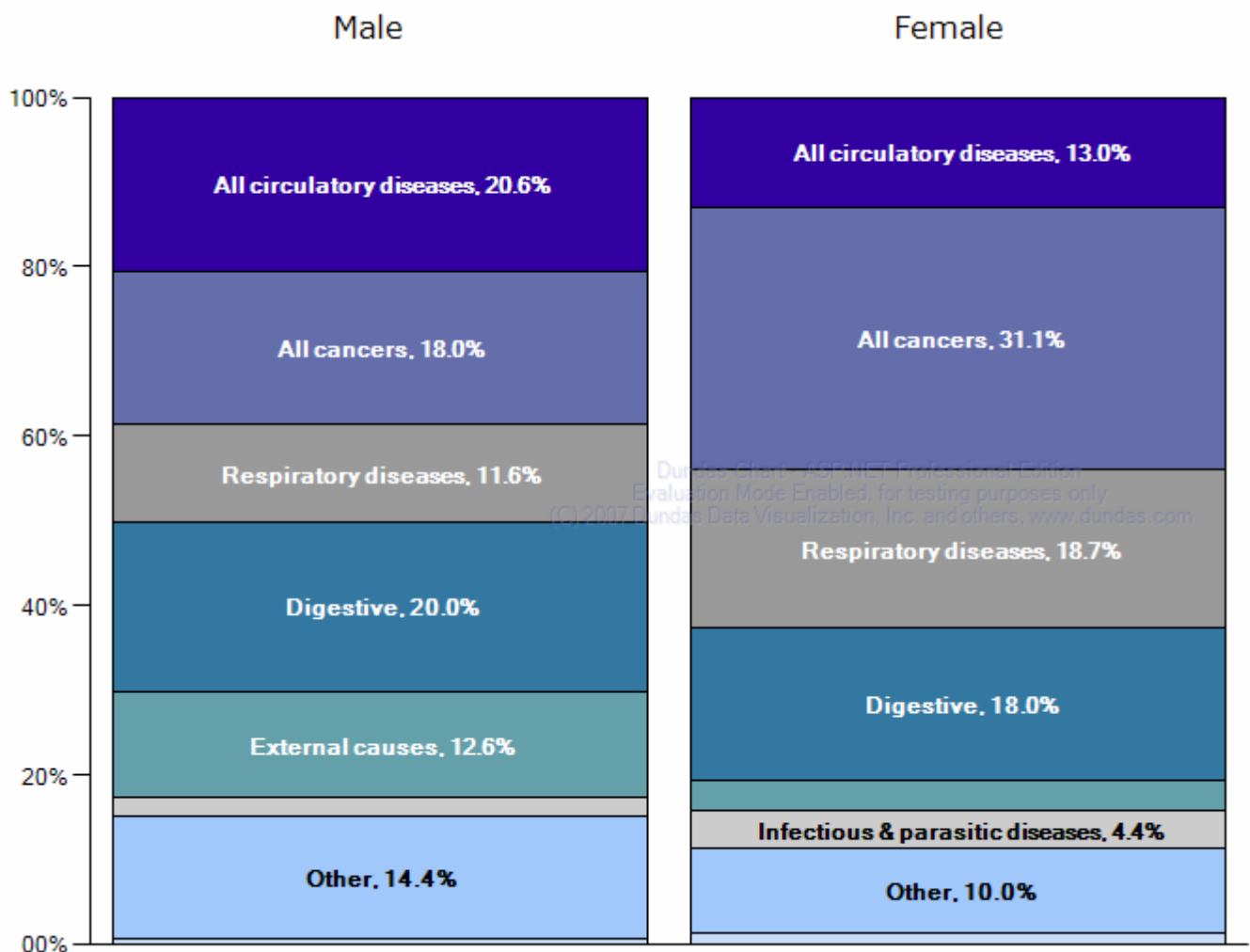


Chart 2 summarises the information from chart 1 by the broad headings in chart 1, showing the cause groupings that have the biggest impact on inequalities in life expectancy in the CHP.

## Data used by the tool

The table below contains information on the raw data that is used by the tool, including its source, time period covered and any calculations performed, where appropriate.

Data	Time period	Source and additional details
Life expectancy at birth	2003-07	<p>GROS death registration data and mid year population estimates for 2003-2007, summed.</p> <p>A version of the method used by the European Healthy Life Expectancy Monitoring Unit (<a href="http://www.ehemu.eu/">http://www.ehemu.eu/</a>) was used to calculate Life Expectancy (LE) and the 'Arriaga' method to decompose the LE by cause. Details on the methodology selected can be found at <a href="http://muse.jhu.edu/journals/demography/v041/41.2nusselder.pdf">http://muse.jhu.edu/journals/demography/v041/41.2nusselder.pdf</a></p> <p>Note: the LE results quoted here are not the official figures – they are there to provide an indication of the estimated size of change only. Official figures are available from the GROS website.</p>
Life expectancy gap	2003-07	<p>The relative gap between the CHP and Scotland was calculated.</p> $\text{Gap} = \frac{\text{Scotland LE} - \text{CHP LE}}{\text{Scotland LE}} * 100$
Number of deaths from all causes	2003-07	<p>GROS death registration data for 2003-2007, summed.</p> <p>See Table A.1 for ICD codes</p>
Population	2003-07	GROS mid year population estimates for 2003-2007 summed.

**Table A.1: Cause specific LE Gap Analysis Codes**

<b>Cause</b>	<b>ICD-10 Codes</b>	<b>Cause group</b>
Coronary Heart Disease Heart failure Cerebrovascular disease  Other cardiovascular disease	I20-I25 I50 I60-I69, G45 I00-I99 minus I20-I25, I50, I60-I69, G45	All circulatory diseases: I00-I99 & G45
Oesophageal cancer Stomach cancer Colorectal cancer  Lung cancer Breast cancer  Other cancers	C15 C16 C18-C20 C33, C34 (on advice from DB) C50 C00-97 minus C15, C16, C18-C20, C33, C34, C50	All cancers: C00-C97 (on advice from DB)
Pneumonia Chronic obstructive airways disease  Other respiratory disease	J12-J18 J40-J44, J47.X J00-J99 minus J12-J18, J40-J44, J47.X	Respiratory diseases: J00-J99
Stomach/duodenum ulcer Chronic liver disease and cirrhosis  Other digestive diseases	K25, K26 K70, K73, K74 K00-K93 minus K25, K26, K70, K73, K74	Digestive: K00-K93
Road traffic accidents  Other accidents  Suicide and undetermined injury  Other external causes	V01-V89 V90-X59, Y40-Y59, Y85-Y86 X60-X84, Y87.0, Y10-Y34, Y87.2 V01-Y98 minus V00-V89, V90-X59, Y40-Y59, Y85-Y86, X60-X84, Y87.0, Y10-Y34, Y87.2	External causes: V01-Y98
Infectious and parasitic diseases	A00-B99	Infectious & parasitic diseases: A00-B99
Endocrine, nutritional, metabolic diseases Mental and behavioural disorders  Diseases of nervous system Musculoskeletal diseases Genitourinary diseases Perinatal conditions Congenital anomalies Ill defined conditions  Other	E00-E90  F00-F99 G00-G99 minus G45 M00-M99 N00-N99 P00-P99 Q00-Q99 R00-R99 All remaining mortality codes not otherwise classified	Other: All remaining codes/chapters