LEICESTERSHIRE AND RUTLAND

DIRECTORATE OF PUBLIC HEALTH

Premature Mortality Statistics – Liver Disease

1. Key findings

Premature mortality from Liver Disease

- Liver disease is the fourth most common cause of premature (under 75yrs) deaths.[1]
- Nationally, there has been a 20% overall increase in premature deaths from liver disease since 2000.
- In Leicestershire County Council (LCC) there were 261 premature deaths from liver disease, 87% (n=226) of these were preventable 2009-11.
- LCC (12.0 per 100,000 (DSR, 95% CI 10.6 to 13.6)) had statistically significantly lower rates of premature liver disease deaths compared to England (14.4, 95% CI 14.3 to 14.6) in 2009-11.
- Rates of preventable premature deaths from liver disease in LCC (10.4 per 100,000 (DSR, 95% CI 9.1 to 11.8)) were also statistically significantly lower than England (12.7, 95% CI 12.5 to 12.9) in 2009-11.
- Leicestershire has amongst the lowest levels of premature and preventable premature deaths rates for liver disease in England. For these performance indicators, LCC rates are in the top 10-25% best performing local authorities in England.
- Natural trend for liver disease premature mortality has shown a projected 14.9% increase from 2009-11 to 2013-15 for Leicestershire County and Rutland.

- Leicestershire and Rutland's proposed aspirations are to reduce the predicted percent increase from 2009/11 to 2013/15 from 14.9% to 8% - reflecting a similar forecasted percentage increase for liver deaths in under 75 years for England.

- Compared to peer-authorities, LCC does not have statistically significantly different rate of premature death rates from liver disease 2009-11 - with the exception of Hampshire.
- Compared to peer-authorities, LCC does not have statistically significantly different rate of preventable premature death rates from liver disease 2009-11.
- Rutland figures have been suppressed as they had fewer than 25 cases in 2009-11. Thus, it is not possible to comment on Rutland rates or to compare them to other areas.

Risk factors for Liver Disease

- There are three main modifiable risk factors fuelling the recent acceleration in premature deaths from liver disease: alcohol, obesity and liver infections.
- One in three people drink more than the safe limit of alcohol per day/week - in LCC the percentage of people who drink more than the safe limit per day/week was not statistically significantly different to England or region in 2000-9.
- One in five people binge drink - in LCC levels of binge drinking are not statistically significantly different to England or region 2000-9.
- Levels of binge drinking are not available for Rutland from 2000-9.
- Nearly a quarter of adults in Leicestershire County and Rutland are obese, this is comparable to England.
- Levels of hepatitis in LCC and Rutland are not known, reflecting the national circumstance.

NB. Preventable mortality is defined as deaths that are considered preventable if they could have potentially been avoided by public health actions.

2. Introduction

Liver disease is defined as any disorder of the liver. There are over 100 types of liver disease, which together affect at least 2 million people in the UK[i]. The most common forms of liver disease (in no particular order) are:

- Hepatitis or inflammation of the liver,
- Cirrhosis – permanent irreversible damage leading to liver failure,
- Liver cancer which causes ultimately liver failure and death,
- Fatty deposits in the liver - alcoholic fatty liver disease is the first stage of alcoholic liver disease, or,
- Fibrosis or scarring of the liver.

3. National comparison

- In Leicestershire County Council (LCC) and Rutland liver disease is the fourth most common cause of premature (under 75yrs) deaths[2], after ischaemic heart disease and stroke, cancer and respiratory disease[ii] - this also reflects the national order of causes for premature deaths.

- Nationally, there has been a 20% overall increase in premature deaths from liver disease since 2000 i.

- In LCC there were 261 premature deaths from liver disease, 87% (n=226) of these were preventable 2009-11[iii].

- LCC (12.0 per 100,000 (DSR, 95% CI 10.6 to 13.6)) had statistically significantly lower rates of premature deaths from liver disease compared to England (14.4, 95% CI 14.3 to 14.6) in 2009-11iii.

- Rates of preventable premature deaths from liver disease in LCC (10.4 per 100,000 (DSR, 95% CI 9.1 to 11.8)) were also statistically significantly lower than England (12.7, 95% CI 12.5 to 12.9) in 2009-11 iii.

- Rutland figures have been suppressed as they had fewer than 25 cases in 2009-11. Thus, it is not possible to comment on Rutland's rates iii.

4. Nearest neighbour comparison

- Leicestershire has amongst the lowest levels of premature and preventable premature death rates for liver disease in England. For both these performance indicators, LCC rates are in the top 10-25% best performing local authorities in England iii.

- Compared to peer authorities (local authorities with similar demographics), LCC has notably higher rates of premature death. However, LCC is not statistically significantly different to peer local authorities, with the exception of Hampshire, which has statistically significantly lower rates (Figure one).

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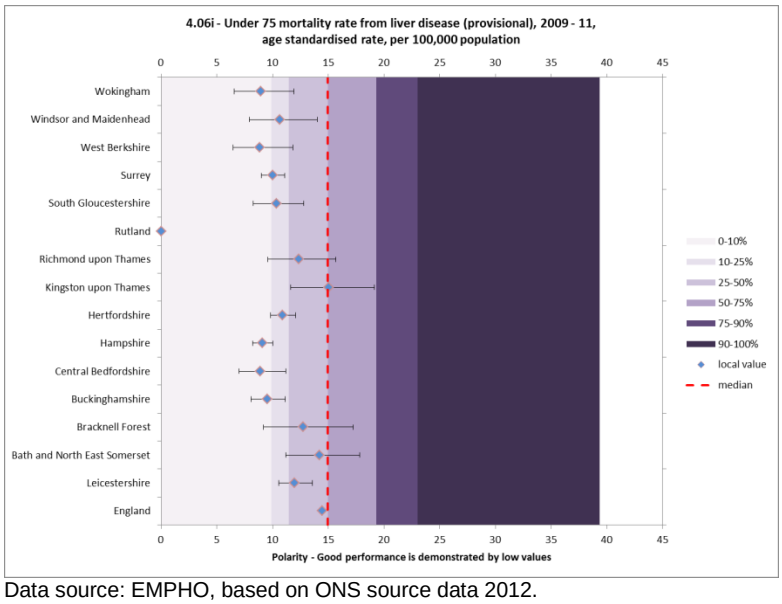
[2] Premature mortality: defined as deaths in people under 75 years that are considered preventable through early inventions or changes to modifiable risk factors (ERPHO: 2012).

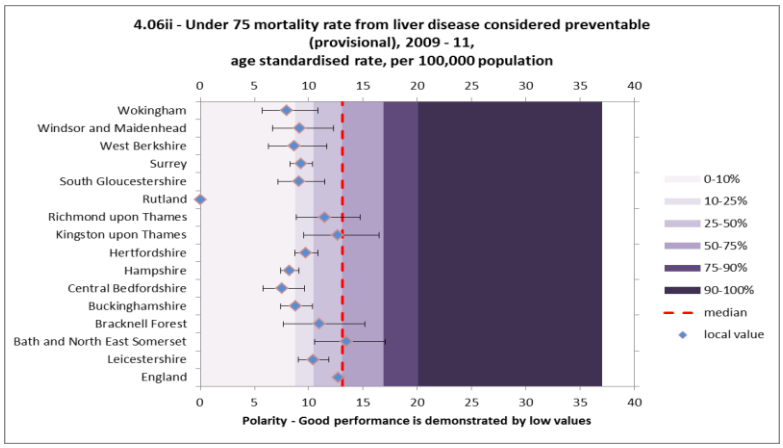
- It is not possible to compare Rutland's preamture death rates for liver disease to peer authorities as their figures have been suppressed due to small numbers (Figure one).

Figure one: Under 75 mortality rate from liver disease (provisional) 2009-11 comparison with similar local authorities.



Data source: EMPHO, based on ONS source data 2012.

Figure two: Under 75 mortality rate from liver disease considered preventable (provisional) 2009-11 comparison with similar local authorities.



Data source: EMPHO based on ONS source data 2012.

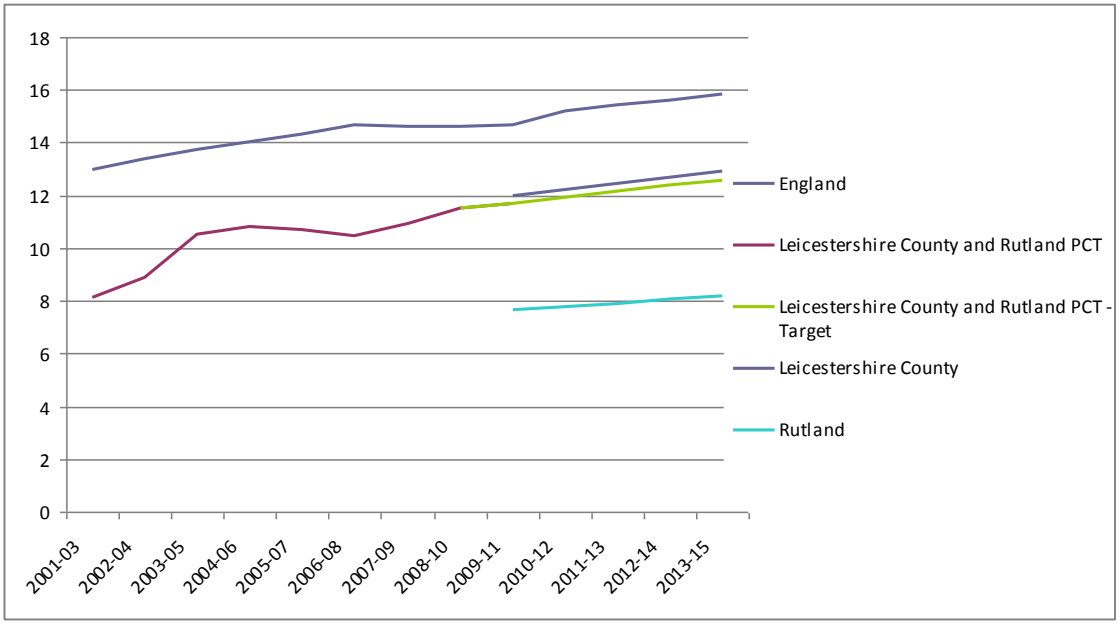
- LCC does not have statistically significantly different rates of preventable premature death rates from liver disease compared to peer authorities (Figure two).

- It is not possible to comment on Rutland preventable premature death rates compared to peer authorities as their figures have been suppressed due to small numbers

5. Trend

- In England, premature death rates from chronic liver disease are lower than other major causes of death from chronic illnesses such as heart disease.
- However, liver disease causes more premature deaths in England every year, having risen by 20% from 2000 to 2009 **Error! Bookmark not defined.**.
- This trend is in direct contrast to the 20% decrease in premature deaths from liver disease in Europe and the steady decline in standardised premature death rates from other major chronic illnesses[iv] in England.
- Furthermore, deaths from liver disease are disproportionately higher in younger people – 86% of people who died of liver disease were under the age of 75 years in England[v].
- Leicestershire and Rutland both have consistently lower rates of premature deaths compared to England (Figure three).
- For England, Leicestershire and Rutland, there has been an upwards trend in premature deaths from liver disease since 2001 (Figure three).

Figure three: Mortality from liver disease in people under 75 years: England, Leicestershire County, Rutland County from 2001 to 2015, and proposed aspirations for change from 2009 baseline to 2015.



*Data from 2010-12 onwards are projected liver disease rates.

- Natural trend for liver disease premature mortality has shown a projected 14.9% increase from 2009-11 to 2013-15 for Leicestershire County and Rutland.

- Leicestershire and Rutland's proposed aspirations are to reduce the predicted percent increase from 2009/11 to 2013/15 from 14.9% to 8% - reflecting a similar forecasted percentage increase for liver deaths in under 75 years for England.

- There is no published data on premature or preventable premature deaths from specific liver diseases.

5. Risk factors for Liver Disease

The main causes of liver disease are modifiable lifestyle risk factors such as alcohol consumption, obesity or infection.

5.1 Alcohol

- Drinking too much alcohol can lead to three types of liver conditions - fatty liver, hepatitis, and cirrhosis.

- Drinking within the recommended safe limits: (3-4 units of alcohol a day for men and 2-3 units for women) significantly reduces the risk of developing these liver diseases[vi].

- A heavy drinker is someone who regularly drinks more than the recommended weekly limit for alcohol consumption - 90-100% of heavy drinkers have alcoholic fatty liver disease[vii].

- Over one in three people report drinking in excess of the safe limits, nationally, regionally and locally[viii].

- There has been an upwards trend in people consuming more than the recommended safe limits of alcohol since 2001 to 2009. There are no statistically significant differences between the rates of alcohol consumption above safe limits, nationally, regionally and locally from 2001 to 2009.viii

- People who drink double the recommended safe limits of alcohol per day (i.e. more than six units for women and more than eight units for men) are referred to as *binge drinkers* vi.

- One in five people are binge drinkers, nationally, regionally and locally.

- There has been an upwards trend in binge drinking since 2001 to 2009. There have been no statistically significant differences between LCC, the East Midlands and England's rates binge drinking from 2001 to 2009[ix].

5.2 Obesity

- An estimated one in five people in the UK have an early form of non-alcoholic fatty liver disease.

- Simple fatty liver is one of the most common forms of liver disease in the UK. People who are overweight or obese often have fatty stores in their liver, which can build up

and cause scarring. Someone is technically overweight if their BMI score[3] is between 25 and 30 and obese if their BMI is greater than 30.[x]

- Nationally, 24% of the adult population are obese and locally obesity levels are comparable (24.1%). LCR has statistically significantly lower levels of obese 5 to 6 year olds (8.2%) and 10 to 11 year olds (30.9%) pupils, compared to England (9.5% 5/6years and 33.9% 10/11years)[xi].

- Levels of obesity are predicted to increase due to sedentary lifestyles, unhealthy diets and a lack of routine physical activity.

5.3 Liver infections

- Hepatitis is an infection or inflammation of the liver. The proportion of the disease in our population is not known, but estimated to be low.

- The premature death risk is associated with chronic hepatitis. For example, 30% of chronic hepatitis B cases develop liver cirrhosis, and 5-10% progress to liver cancer[xii] [xiii].

- Children considered to be at high risk (e.g. vertical transmission) of hepatitis are vaccinated. There are no local or national figures for coverage of infants who have received hepatitis B vaccination.

4. Conclusion

Overall, LCC has lower premature death rates for liver disease than England, the East Midlands and is comparable to its peer authorities. Rutland has so few cases its small numbers have been suppressed and rates cannot be reliably calculated. There is no data on premature deaths from specific liver diseases. All three risk factors for liver disease (alcohol, obesity and infection) are entirely preventable. Eighty seven per cent (n=226) of local liver disease cases are preventable through modifying lifestyle factors, such as suitable alcohol consumption, a healthy diet and exercise - in addition to targeted hepatitis vaccinations for at higher risk groups.

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[i] Public Health England http://longerlives.erpho.org.uk/health-intervention/liver - accessed 08.04.2013

[ii] Leicestershire and Rutland Joint Strategic Needs Assessment (2012), Public Health Department

[iii] Data source Public Health Outcome Framework (PHOF) Liver disease indicator – accessed 08.04.2013

[iv] Source: European Health For All Database (HFA-DB) World Health Organisation Regional office of Europe

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[3] BMI Score=Weight (kg)/ (Height CMX Height CM)

[v] Data source: ONS 2010 Mortality from Digestive diseases, liver disease (MFP by age)

[vi] http://www.nhs.uk/livewell/alcohol/Pages/Alcoholhome.aspx - accessed 08.04.2013

[vii] http://www.nhs.uk/Conditions/Liver_disease_(alcoholic)/Pages/Introduction.aspx - accessed 10.04.2013

[viii] Source of data: Health Surveys for England - National Centre for Social Research. Accessed www.ic.nhs.uk – Alcohol consumption - prevalence of binge drinking (more than 8 units / more than 6 units): standardised percent, 16+ years, annual trend, MFP - accessed 08.04.2013

: accessed 08.04.2013

[ix] Source of data: Health Surveys for England - National Centre for Social Research. Accessed www.ic.nhs.uk – Alcohol consumption - prevalence of binge drinking (more than 4 units / more than 3 units): standardised percent, 16+ years, 3-year average trend, MFP - accessed 08.04.2013

[x] http://www.nhs.uk/conditions/Obesity/Pages/Introduction.aspx - accessed 08.04.2013

[xi] Health Needs Assessment for Health Weight, Leicestershire and Rutland (2013)

[xii] Foundation for Liver Research (2004)

[xiii] Migrant Health http://www.hpa.org.uk/webc/HPAwebFile/HPAweb_C/1202115606638