Asthma in Leicester - an overview

A briefing paper by the PCT Public Health Directorate

1. Introduction

1.1 This paper has been prepared for the Leicester City Council Health Scrutiny Committee meeting on 14th September. It presents a general overview of asthma with a particular focus on its impact upon Leicester.

2. Asthma-the facts

2.1 **Definition of asthma**

Asthma has no standard definition but a working definition has been proposed: 'Reversible airways obstruction due to bronchial hyperactivity, associated with inflammation and oedema of the airways' (Tattersfield et al 2002).

2.2 Diagnosing asthma is more clear-cut in children than in adults. In adults there is considerable overlap between asthma and 'chronic obstructive pulmonary disease' (COPD).

2.3 Asthma causes shortness of breath, wheezing and cough.

2.4 Severity varies from mild, intermittent symptoms to severe disabling problems and even death in rare cases.

3. Looking after/managing asthma

3.1 Avoidance of known environmental precipitating factors is important.

3.2 Treatment is based on medicines taken via an inhaler to relieve symptoms ('Relievers') and/or medicines taken via an inhaler to prevent symptoms ('Preventers') if necessary. Where asthma is still not fully controlled, other medicines may be added on (Add-ons) including oral treatments.

3.3 Patients with asthma need to have their condition monitored usually by their GP or practice nurse.(Research shows that in the UK, primary care bears the greatest burden of looking after childhood asthma (Gupta et al 2004))

3.4 Occasionally symptoms become severe enough to warrant hospital referral or admission.

4. Causes of asthma?

4.1 Research has shown that atopy (allergy) and inflammation play a significant role in aetiology (Cullinan 1993). However, although atopy may

be the commonest single factor, it is actually responsible for less than half the cases (Pearce 1999)

4.2 Various agents have been implicated including house dust mite, air pollutants, oxides from gas cookers, indoor mould but the evidence remains inconclusive (Strachan 2000). It is also suggested that rather than causing asthma, passive smoking aggravates it (Strachan1997)

5. Prevalence of asthma (the extent of the problem)

- 'Prevalence' means the total number of patients with the condition at a given time.
- 'Prevalence rate' indicates the total number with the condition expressed as a percentage of the overall population total.
- Because of diagnostic problems in adults, prevalence figures in children are likely to be more accurate.
- The peak incidence is in the first five years of life and the prevalence starts to decline in adolescence (Matthews 2005)
- Boys are slightly more prone to developing asthma than girls (Gupta et al, 2004)
- Prevalence of childhood asthma rose significantly and steadily from the 1960s through to the early/mid 90s but is now falling.
- National surveys of children in the late 1990's found the prevalence to be approximately **20% (1 in 5)**
- Recent evidence suggests that prevalence is falling-latest figure of **16.8%** (Dugmore 2003)
- In UK adults the European Respiratory Health Survey estimates that the prevalence of doctor-diagnosed asthma was around **7 per cent**.
- According to Asthma UK **5.2 million** people in the UK currently receive treatment for asthma.

6. Socio-economic variation:

6.1 The prevalence of asthma appears to show little variation between social classes (Gupta et al 2004)

6.2 **Ethnicity**:

- Two studies in the UK (Ayres 1986) and (Watson et al 1996) found higher asthma admission rates for Asians living in the UK compared to non-Asians.

- Poor access to primary health care and poor education due to language barriers leading to poor compliance were felt to explain this.

- A large GP-based UK survey found higher GP consultation rates for asthma in children and adults of South Asian origin (Netuveli et al 2005).

- Internationally, studies have shown reduced asthma admission rates for immigrants in Sweden (Hjern et al 1999) whilst in Germany but increased prevalence in Turkish children was noted (Gruber et al,2002)

6.3 Geographical distribution

- Kaur pointed out that there is little geographical variation in the prevalence of childhood asthma in the UK (in fact non-metropolitan areas had more asthma than did metropolitan areas).

7. Asthma in Leicester

7.1 Prevalence in Leicester

General socio-demographic features of Leicester (ONS data):

- 2004 population estimate for Leicester city was **283,900**.
- Leicester has a younger population than average for the UK.
- Large proportion of people of Asian origin who live in the city (**25.7%** Indian Asian/Asian British compared to national average of **2%)**
- Leicester is a relatively high levels of socio-economic deprivation-it is ranked **31st** out of **354** local authorities in England and Wales where **1** is the most deprived and **354** the least deprived

7.2 Surveys have shown that the prevalence of childhood asthma (i.e. under 14 years old) in Leicester rose from **11%** to **18%** between **1990** and **1998.**

- This mirrored what was happening in the rest of the UK (Mathews et al, 2005)
- A random sample of **1753,** 12 year old children in Leicestershire and Rutland in **2003** showed a prevalence of asthma of **16.8%** (Dugmore 2003)
- A cohort study in 1998 involving **3,413** one year old children in Leicestershire failed to show increased asthma symptomatology in South Asians (Kuehni 2004)

7.3 The above surveys looked at children exclusively.

- In Leicester there have been no recent comparable surveys looking at asthma in adults.

- However, GPs are now keeping more up to date registers of asthma in their patient populations (including both adults and children) as part of QOF (Quality Outcome Frameworks) initiative.
- This programme currently underestimates disease prevalence as it relies heavily on the accurate capture and recording of GP data. This is steadily improving but has yet to achieve full coverage.
- Figures in older groups may be inflated by COPD
- There is significant variation in numbers of asthmatics as recorded by different GP practices. This might reflect inter-practice variation in prevalence or differences in recording of data.
- 2005-2006 QOF Asthma data for Leicester revealed a total of **18,000 asthmatics**-adults and children (crude prevalence rate of **5.3%)**
  - approx. 9,000 under 14 years
  - approx. 9,000 over 14 years

  These prevalence rates are similar to those found in the rest of the UK.

7.4 **Management of asthma in Leicester**

Can be studied by looking at the following:

(1) **Quality Outcomes Framework (QoF data) – collected from General Practice**

- This includes clinical performance indicators.
- The 2005/6 QOF data suggests that management of asthma in Leicester is of a high standard overall.
- However, the evidence is clear that substantial variability exists in the quality of care across the city. There is a wide gap between quality of care provided by the best practices and that provided by the worst.

(2) **GP prescribing data:**

- GP inhaler prescription levels reflect asthma care generally. For example, good clinical practice guidelines suggest that the ratio of reliever:preventer inhaler prescriptions should be 2:1.
- Prescribing data in Leicester shows considerable variability in GP prescribing for B-agonists(reliever) and steroid inhalers(preventers) amongst GPs even after taking prevalence of asthma into account.
- This finding supports QOF data in showing considerable variability in the quality of care provided by different GP practices in the city

(3) **Mortality data**

- Mortality data (i.e. number of deaths) has significant limitations as a marker for asthma activity/management because of diagnostic uncertainty.
- In older patients it may be unclear whether they had asthma or COPD.
- Also older patients often have multiple pathology and elucidating the exact cause of death can be difficult.
- Another problem in interpreting asthma mortality data is that overall numbers of deaths from asthma in Leicester is small and it is difficult to draw conclusions from minor fluctuations from year to year in what are small numbers to begin with.
- Latest available mortality data is from 2004 and showed **31 deaths** in Leicester from asthma. This was slightly higher than expected (but see above).

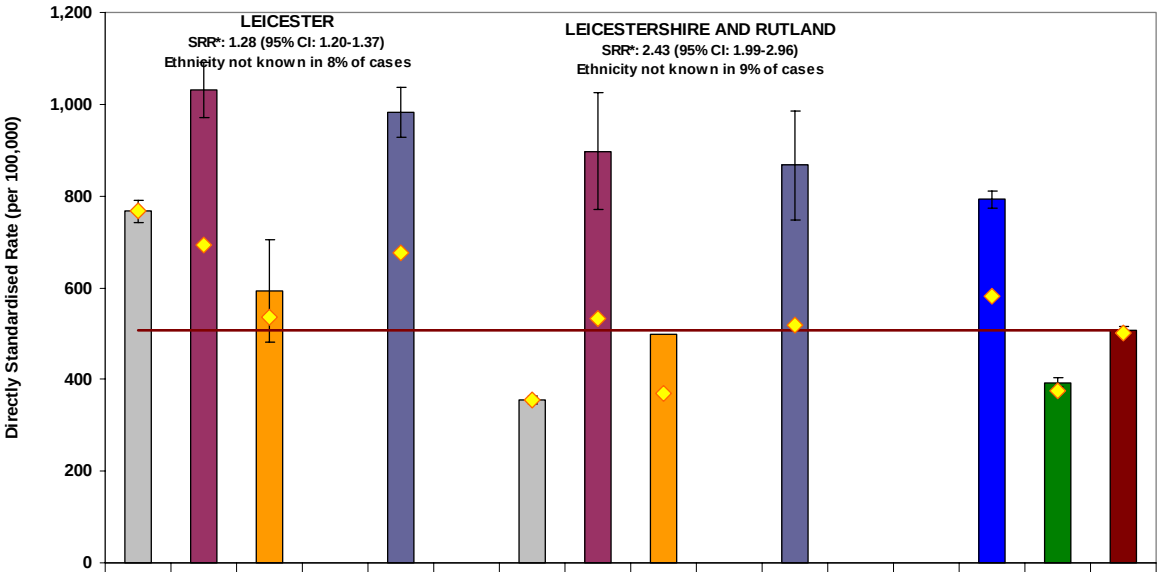
7.5 **Hospital activity for asthma**:

- In the UK, admissions for acute asthma rose dramatically in the UK during the 1960s and this trend continued into the early 80s but started to decline during the 1990s.

7.6 In Leicester current admission levels for asthma are:

- Significantly higher overall than expected –in all socio-economic and ethnic groups
- Disproportionately higher in ethnic minority groups
- Disproportionately higher in areas with higher deprivation levels
- Higher in Leicester city Vs Leicestershire

Emergency Admissions for Asthma (all ages, April 2002 to March 2005)

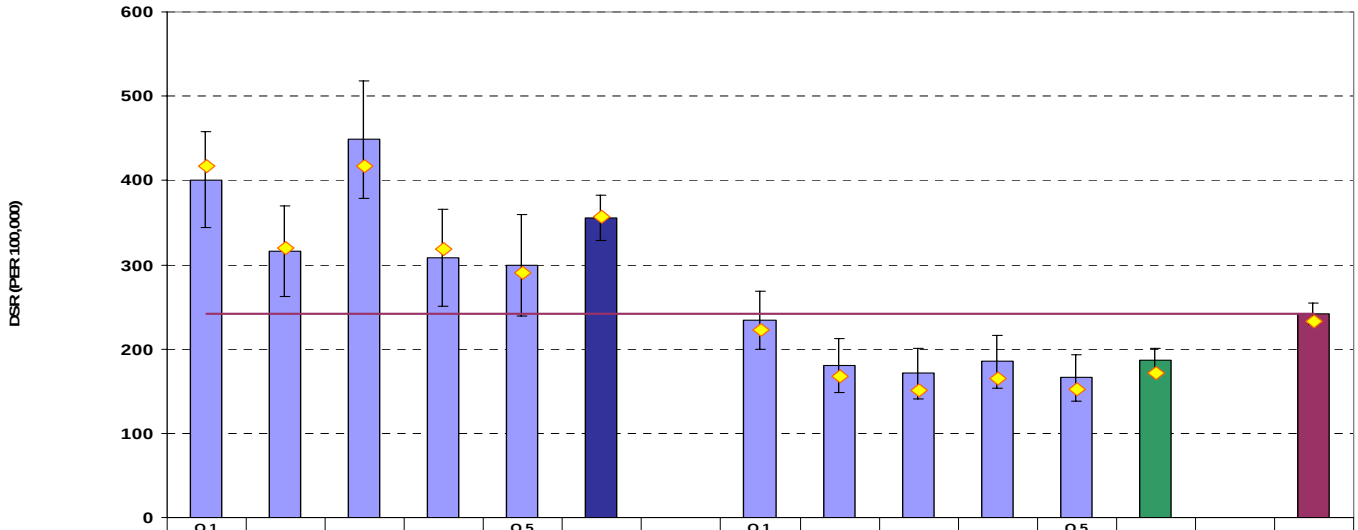


	WHITE	SOUTH ASIAN	BLACK		ALL BME**		WHITE	SOUTH ASIAN	BLACK		ALL BME**			CITY TOTAL	COUNTY TOTAL	LLR TOTAL
DSR	767	1030	593		983		356	897	499		866			792	394	508
LLR	508	508	508	508	508	508	508	508	508	508	508	508	508	508	508	508
Crude rate	768	692	537		677		354	533	369		518			581	375	502

* SRR: Standardised Rate Ratio (All BME population vs white). E.g. SRR of 1.40 signifies a 40% excess in ethnic minority population when compared to white residents

** All BME - average for South Asian and Black (see Notes for comments)

ASTHMA ADMISSION RATE 2002/04 - 2004/05 - BY QUINTILE OF DEPRIVATION



	Q 1 (WORST)	Q 2	Q 3	Q 4	Q 5 (LEAST)	CITY		Q 1 (WORST)	Q 2	Q 3	Q 4	Q 5 (LEAST)	COUNTY		LLR
DSR	400.8	316.0	448.6	307.8	299.5	355.8		234.2	180.4	170.9	184.9	165.9	186.7		242.1
LLR	242.1	242.1	242.1	242.1	242.1	242.1	242.1	242.1	242.1	242.1	242.1	242.1	242.1	242.1	242.1
Crude rate	417.0	319.5	417.0	318.6	289.9	356.6		222.6	167.5	151.4	165.2	152.1	171.5		232.5

8. Local initiatives that may lead to improved asthma care

- A Leicestershire and Rutland Respiratory Prescribing Group, consisting of community and hospital pharmacists meets regularly to discuss asthma prescribing.
- A COPD pathway group is being established between primary and secondary care and will develop COPD referral/admission pathways- this may have an overlapping impact on asthma care.
- A community respiratory nursing team exists in the city dealing mainly with COPD and focuses on managing patients in the community. This has limited involvement in management of asthma patients.
- An asthma strategy group existed in the past but has since folded

9. Asthma in Leicester: Summary of key points

- There is no strong evidence of excess overall baseline prevalence of asthma in Leicester-no excess despite younger population, high numbers of ethnic minority residents and high levels of deprivation
- Performance level indicators in primary care suggest that *overall* asthma management is of good quality. However…
- There is significant variability between GP practices across Leicester in how well asthma is recorded and managed. Improvements are needed in order to provide good quality care consistently and universally across the city.
- Further evidence of lack of consistency in care is found in the substantial variability in asthma prescribing that exists between GP practices in Leicester (even after allowing for differences in prevalence rates)
- The acute hospital admission rate for asthma in Leicester is significantly greater than expected. There are many possible explanations for this including substandard preventative management, access to emergency primary care etc
- Acute asthma admission rates are also disproportionately higher in patients from deprived backgrounds compared with those from more affluent backgrounds and in Black/Ethnic Minority patients when compared with whites. This raises further questions about consistency of care and equity in relation to the management of asthma locally.
- No local asthma strategy/network currently exists in Leicester to develop and oversee care pathways. Such a group existed in the past. Its re-establishment could potentially improve management of asthma locally by establishing management pathways and by strengthening links between primary and secondary care
- A COPD network exists and includes community nurses who develop management pathways for patients with COPD. The focus is on managing patients in the community and this has a limited overlapping impact on management of asthma.

Dr Mike McHugh
Specialist Registrar in Public Health
Leicester City Public Health Directorate
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