The Rising Prevalence of Asthma in Children:

True Increase or Diagnostic Exchange?

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RHA Indicators Atlas 2009

- Main purpose: inform Community Health Assessment reports by each Regional Health Authority (RHA)
- Developed in conjunction with *The Need To Know* team
- Atlas-style report: 105 indicators of health status, health service use, quality of care
- Results for all 11 RHAs, and sub-areas
- 2 time periods: 2000/01 vs 2005/06
- Age & sex adjusted rates; crude rates and observed numbers in Appendix
Respiratory Disease

- Indicator “Total Respiratory Morbidity” developed by respirologists Manfreda & Anthonisen (UM)
  - “Having trouble breathing, and saw a doctor”
- Sum of: asthma, bronchitis (3), emphysema, chronic obstructive pulmonary disease (COPD)
- Designed to overcome coding artefacts across diagnoses & different physicians
- Definition based on physician visits or hospitalization, using 1 year of data

- Asthma prevalence increasing, right?
Figure 5.7.1: Total Respiratory Morbidity Rates by RHA

Age- & sex-adjusted percent of residents treated for respiratory diseases

South Eastman (1,2,t)  
South Westman (1,2,t)  
Brandon (1,2,t)  
Central (1,2,t)  
Marquette (1,2,t)  
Parkland (1,2,t)  
Interlake (1,2,t)  
North Eastman (1,t)  
Burntwood (1,2,t)  
Churchill (1,2)  
Nor-Man (1,2,t)  
Rural South (1,2,t)  
North (1,2,t)  
Winnipeg (1,2,t)  
Manitoba (t)

1994/95-1995/96  
1999/00-2000/01  
Mb Avg 94/95-95/96  
Mb Avg 99/00-00/01

"1" indicates area's rate was statistically different from Manitoba average in first time period shown
"2" indicates area's rate was statistically different from Manitoba average in second time period shown
"t" indicates change over time was statistically significant

RHA Atlas 2003:  
TRM 13.7% in 1995  
TRM 12.5% in 2000
Figure 4.3.1: Total Respiratory Morbidity Rates by RHA

Age- & sex-adjusted percent of residents (all ages) treated for respiratory diseases

- South Eastman (1,2,t)
- Central (1,2)
- Assiniboine (1,2,t)
- Brandon (1,2,t)
- Winnipeg (1,2,t)
- Interlake (2,t)
- North Eastman
- Parkland (1,2,t)
- Churchill (2,t)
- Nor-Man (1,2,t)
- Burntwood (1,2,t)
- Rural South (1,2,t)
- Mid (1,t)
- North (1,2,t)
- Manitoba (t)

2000/01
2005/06
MB Avg 2000/01
MB Avg 2005/06

RHA Atlas 2009:
TRM 12.5% in 2000
TRM 11.6% in 2005

'1' indicates area’s rate was statistically different from Manitoba average in first time period
'2' indicates area’s rate was statistically different from Manitoba average in second time period
't' indicates change over time was statistically significant for that area
's' indicates data suppressed due to small numbers

Source: Manitoba Centre for Health Policy, 2009
What’s going on?

• Many studies reporting increasing prevalence of Asthma, including studies from MCHP data
• Prevalence of Total Respiratory Morbidity steadily decreasing
• Contrary? Not necessarily…
• Drill down: all 5 diagnoses, 5 age groups, 1986 - 2006
Crude annual prevalence of disease: all ages

- Total
- Asthma
- Bronchitis NS
- Acute Bronchitis
- Other

Yearly prevalence data from 1986/87 to 2005/06.
Crude annual prevalence of disease: 5-19 yr old

- Total
- Asthma
- Bronchitis NS
- Acute Bronchitis
- Other
Implications for MD Visits

- IF differential diagnosis affects subsequent physician visit rates, OR, if the trends in visit rates over time were different, then have implications for resource use
  - E.g. if ‘Asthma’ patients have higher visit rates than ‘Bronchitis’ patients
Physician visit rates: TRM group, all ages
Discussion

- Diagnosed prevalence of asthma indeed increasing, though perhaps at lower rates than suggested by other measures

- Uncertain: rate at which asthma is actually increasing, vs higher proportion of other respiratory diseases being called asthma
Discussion (cont)

• Population health: ‘Total’ prevalence increased from 1986-1995, decreased 95-02, stable thereafter
  – TRM potentially better indicator than single diagnoses, for exactly the reasons cited in development of ‘TRM’
  – Slightly more people ‘having trouble breathing’ now than in 1986, with spike in 1995

• Small overall impact on physician visit rates, though varied by diagnosis (age)
Limitations

• Based on physician visit data only
  – Asthma often defined by drug use
    • Aaron et al 2009: physician diagnosis of asthma over-estimates prevalence
  – Missing patients who do not present, or do not get these diagnoses attributed
Questions & Discussion
Physician visit rates: COPD patients, all ages

- Total
- Other TRM
- Dx Rate
Atlas 2009 content

• Ch 1: Introduction; PMR order
• Ch 2: Demographics
• Ch 3: Health Status & Mortality
• Ch 4: Physical Illness
• Ch 5: Mental Illness
• Ch 6: Use of Physician Services
• Ch 7: Use of Hospital Services
Content (cont)

- Ch 8: Hi Profile Surgery & Diagnostics
- Ch 9: Use of Home Care
- Ch 10: Use of PCHs (75+)
- Ch 11: Preventive & Other Services
- Ch 12: Prescription Drug Use
- Ch 13: Quality of Primary Care
- Ch 14: Health Practices & Characteristics using pooled CCHS data (2 waves)
Figure 1.1.1: Premature Mortality Rates by RHA, 1996 - 2005
Age- and sex-adjusted annual rate of deaths before age 75, per 1,000 residents age 0-74

Source: Manitoba Centre for Health Policy, 2009