

11 Tuberculosis results (standard output graphs can be found in Appendix A11)

Summary

Type of variation	Consistent across data sources?	Consistent within data sources?	Comments
Age	Yes	N/A	Increases with age, peak ages 80-85
Sex	Yes	N/A	M>F M/F differential: two fold in mortality & hospital admissions, small in GP consultations
Year on year	No	N/A	→ mortality and HES, ↓ GPRD
Week of year	Yes	N/A	No seasonal pattern
Regional	Yes	N/A	↑ North Thames & West Midlands
Urban-rural	Yes	N/A	Conurbation > Rural. Gradient steepest for HES, marked for mortality and least obvious in GPRD
Geographical correlation	N/A	N/A	Numbers of events too small to allow meaningful geographical correlations

The following results are considered:

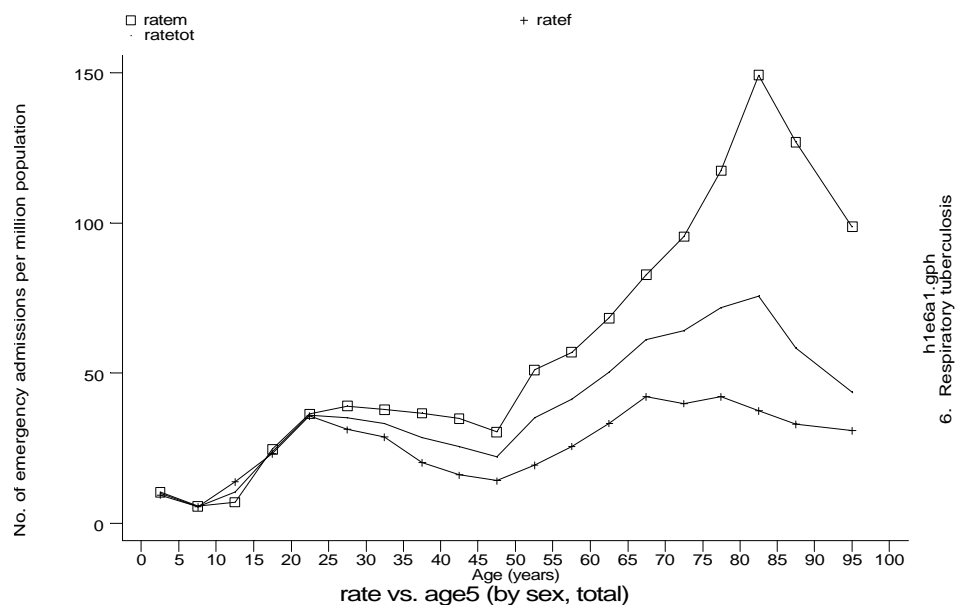
- Variations by age and sex
- Seasonality
- Regional and urban rural distribution
- Comparisons across data sources

Variations by age and sex

Highest rates were seen in the elderly. Death rates were very low in early life and increased steeply from age 60 to peak in ages 80-84. Emergency hospital admissions increased to a small early peak in ages 20-25, decreased slightly to age 45 then rose again steeply to peak in ages 80-84 (Figure 11.1). GP patient consultations showed a double peak in ages 65-70 and 80-85. Peak GP consultation rates were approximately 4 per 10,000 patient years at risk and four times higher than peak emergency hospital admission rates. Peak mortality rates were approximately 2/3 peak hospital admission rates.

Male rates were higher than female rates in all data sources, except in childhood and early adulthood where rates were generally similar with some fluctuations related to small numbers. However, female hospital admission rates in later life did not show the steep increase seen in males (Figure 11.1). Overall male death and emergency hospital admission rates were approximately twice female rates, but the differential was very small for GP consultations.

Figure 11.1 Crude emergency hospital admission rates for tuberculosis by age and sex for 1991-1994



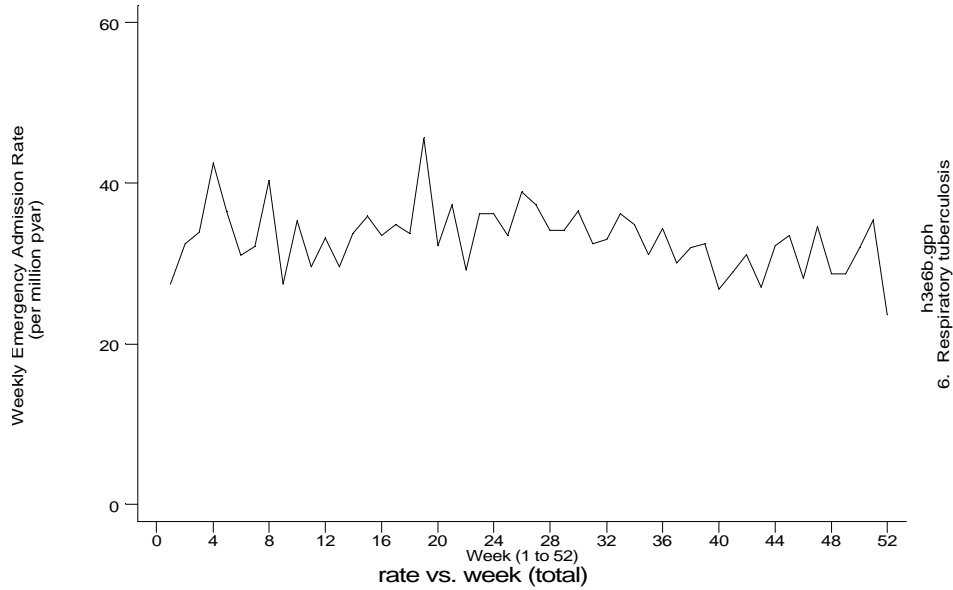
Time trends: There was little change in rates for mortality (1991-1995, rate 6 per million per year) or emergency hospital admissions (1991-1994, rate 33 per million per year), but GP consultations declined from 160 patient consultations per million pyar in 1991 to 120 patient consultations per million pyar in 1995.

Cohort effect: No cohort effects were seen.

Seasonality

No seasonal pattern was seen in any data source (hospital admissions shown in Figure 11.2), but there was a lot of noise due to small number random fluctuation.

Figure 11.2 Weekly pattern in emergency hospital admission rates for tuberculosis, 1991-1994



Regional and urban rural distribution

North East Thames and West Midlands had SERs consistently higher than average in all data sources, while East Anglia and Wessex experienced consistently lower rates than average (Table 11.1 and Appendix A11). Although North West Thames had higher SERs in all data sources in 1994 (Table 11.1), it had lower than average mortality and emergency hospital admissions in data for all years combined.

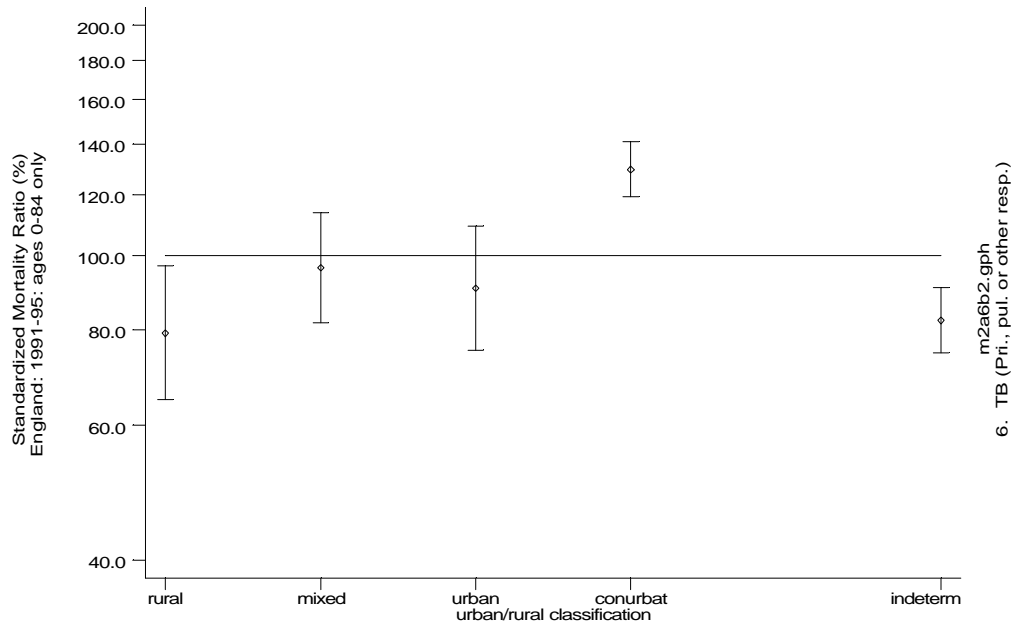
Table 11.1 Numbers of events and SERs in 1994 for tuberculosis ranked (high-low) following order of hospital admission SERs

Region	Mortality		HES: Emergency admissions		GPRD: consultations	
	Number	SMR	Number	SER	Number	SER
NW Thames	18	125.3	236	248.3*	21	137.7
NE Thames	37	194.7*	240	199.1*	15	362.5*
N Western	22	99.8	180	135.8*	13	99.0
W Midlands	37	131.9	206	122.5*	32	107.9
SE Thames	19	93.1	134	112.0	4	87.0
Yorkshire	17	86.0	119	100.9	7	102.5
Trent	25	95.8	136	88.5	6	37.5*
Mersey	13	102.3	51	67.1*	10	87.1
SW Thames	12	73.2	63	65.0*	18	115.0
Northern	19	120.9	58	62.3*	17	121.8
Oxford	11	90.0	34	42.2*	4	69.8
S Western	16	78.7	42	38.2*	13	99.7
Wessex	9	49.4*	30	29.2*	8	80.9
E Anglia	5	34.0*	23	27.0*	6	41.0*

* SER significantly different from 100 (p<0.05)

Urban rural: An urban rural gradient was seen in mortality and (more markedly so in) emergency hospital admissions with highest levels in conurbations (Figure 11.3). This was less clear for GP consultations, but highest SERs were seen in urban areas.

Figure 11.3 Urban rural pattern for SMRs for tuberculosis, 1991-1995



Comparisons across data sources

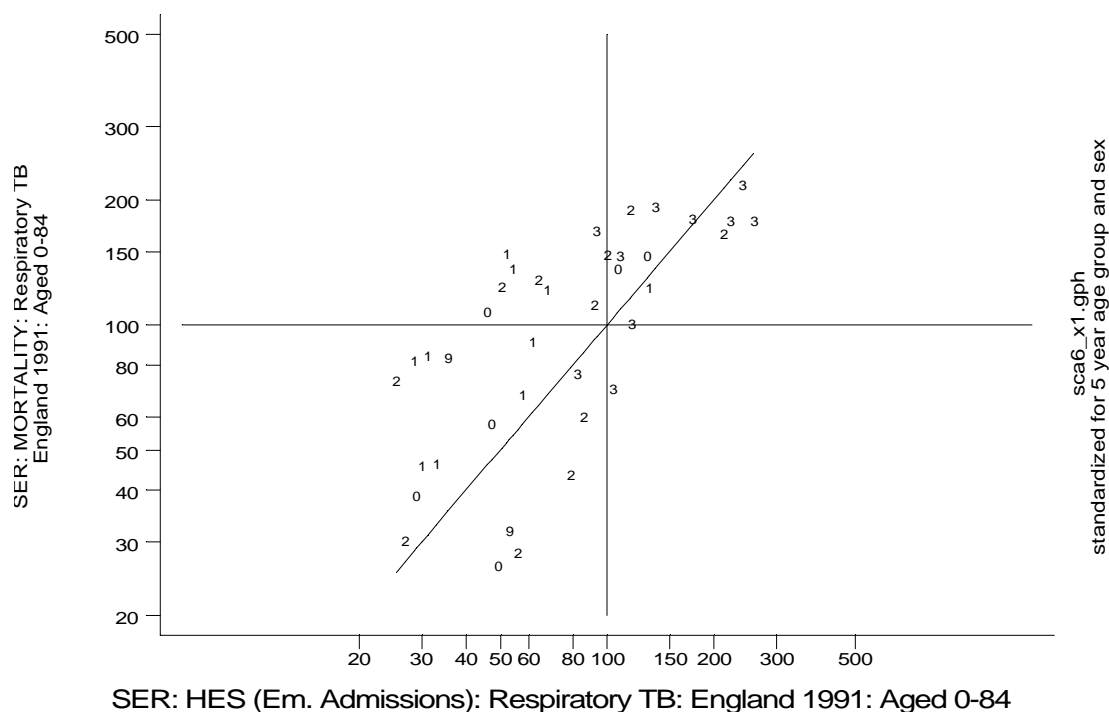
Correlations

Numbers of events were too small in the GPRD and mortality to allow meaningful regional correlations.

Scatterplots

The scatterplot between hospital admission and mortality SERs (Figure 11.4) showed that conurbations experienced higher hospital admissions and mortality than other areas (represented by symbol '3' and concentrated in right upper quadrant). There was a wide variation in SERs between different regional urban-rural divisions (range 7-241 for emergency hospital admissions, range 0-213 for mortality).

Figure 11.4 SMRs for tuberculosis (ages 0-84) compared with SERs for emergency hospital admissions (ages 0-84) for region-urban/rural combinations*



* Footnote: The line added to scatterplot graphs is the line of equivalence.

Key to points: 0 = rural, 1 = mixed, 2 = urban, 3 = conurbations, 9 = indeterminate
 Points have been omitted from this graph where SERs for hospital admissions or for mortality were <20.