

ARCFEST

Improving Population Health

Pneumonia Incidence Reduction

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Health &
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Board

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FIGHTING FOR BREATH

A call to action on childhood pneumonia

High incidence of emergency admissions for Pneumonia

Pneumonia Emergency Admissions Level description	Under 18 Rate of Admission			Number of Admissions
	Male	Female	All	
NHS Scarborough and Ryedale CCG	1099.4	1016.6	1058	220
NHS Oldham CCG	1187.1	800.4	993.7	640
NHS Blackpool CCG	924.8	873.3	899	310
NHS South Tees CCG	1023.2	748.4	885.8	570
NHS Heywood, Middleton and Rochdale CCG	993.8	757	875.4	495
NHS Luton CCG	1019.3	713.7	866.5	535
NHS Greater Preston CCG	930.1	727.7	828.9	355
NHS Bury CCG	945.6	704.3	824.9	355
NHS Tameside and Glossop CCG	915.3	663.9	789.6	430
NHS Hartlepool and Stockton-on-Tees CCG	979.9	594.3	787.1	470
NHS Wirral CCG	956.1	613.8	784.9	520
NHS Durham Dales, Easington and Sedgefield CCG	914.9	619.8	767.3	410
NHS East Lancashire CCG	1009	524.4	766.7	635
NHS North East Essex CCG	835.9	636	736	505
NHS Northern, Eastern and Western Devon CCG	856.3	588.5	722.4	1200
NHS Bradford Districts CCG	846.5	583.9	715.2	575
NHS Blackburn with Darwen CCG	940	489.9	714.9	290
NHS Milton Keynes CCG	868.5	548.3	708.4	495
NHS Morecambe Bay CCG	864	546.7	705.4	395
NHS Bath and North East Somerset CCG	812	591	701.5	250

Key Risk Factors

Evidence suggests that risk factors for Lower respiratory Tract Infections including pneumonia in children are:

- low birth weight Odds Ratio 3.18 (1.02-9.90)
- lack of exclusive breastfeeding OR 2.34 (1.42-3.88)
- crowding – more than 7 persons per household OR 1.96 (1.53-2.52)
- exposure to indoor air pollution OR 1.57 (1.06-2.31)
- incomplete immunization OR 1.83 (1.32-2.52)
- undernutrition – weight-for-age less than 2 standard deviations OR 4.47 (2.10-9.49)
- HIV infection OR 4.15 (2.57-9.74)

Obesity is a significant factor for prevalence of Asthma



Local Risk Factors

In Blackburn with Darwen incidence of asthma and its risk factor are very poor.

- Hospital admission rate (per 100,000) for Asthma for under 19's amongst five worst LAs nationally (413 BwD , 186 England)
- Percentage of Low Birth Weight babies at term significantly higher than England (4.7%, 2.8%)
- Smoking status of mother at child's birth significantly higher than England (13.5%, 10.6%)
- Prevalence of obesity at Reception significantly higher than England (11%, 9.7%)
- Prevalence of obesity at Year 6 significantly higher than England (22.7%, 20.2%)



What Research Evidence would help?

In the context of high levels of poverty, childhood obesity, high incidence of asthma:

- How can we use data analytics to improve early intervention to reduce the risk of emergency admissions for Pneumonia amongst high risk child populations?
- How can we work with Primary Care Networks to develop appropriate prevention strategies?



How can ARC NWC help?

- Data analytics expertise
- Access to and use of existing big data capability e.g. HES, NCMP
- Support with identification and combination of key data sets: housing, air quality, . . .



References

- Azizpour, Y. *et al.* (2018) 'Effect of childhood BMI on asthma: A systematic review and meta-analysis of case-control studies', *BMC Pediatrics*. BioMed Central Ltd., 18(1). doi: 10.1186/s12887-018-1093-z.
- Heiskanen-Kosma, T. *et al.* (1997) 'Risk factors for community-acquired pneumonia in children: A population-based case-control study', *Scandinavian Journal of Infectious Diseases*. Informa Healthcare, 29(3), pp. 281–285. doi: 10.3109/00365549709019043.
- Hruby, A. and Hu, F. B. (2015) 'The Epidemiology of Obesity: A Big Picture', *Pharmacoeconomics*. Springer International Publishing, pp. 673–689. doi: 10.1007/s40273-014-0243-x.
- Jackson, S. *et al.* (2013) 'Risk factors for severe acute lower respiratory infections in children - a systematic review and meta-analysis', *Croatian Medical Journal*, 54(2), pp. 110–121. doi: 10.3325/cmj.2013.54.110.
- Kornum, J. B. *et al.* (2010) 'Obesity and risk of subsequent hospitalisation with pneumonia', *European Respiratory Journal*, 36(6), pp. 1330–1336. doi: 10.1183/09031936.00184209.

