Trends and age profile of 0–24 year olds hospitalised with gastroenteritis

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BACKGROUND

Hospitalisations for gastroenteritis have been increasing internationally.[1,2] New Zealand rates were 6.0 per 1,000 0–14 year olds in 2006–2010.[3] Yet hospitalisation for gastroenteritis is potentially avoidable.[4] For example, rotavirus is one of the main causes of gastroenteritis hospitalisation of under 5 year olds.[1] In New Zealand, rotavirus accounts for an estimated 1 in 52 (6.34 per 1,000) children being hospitalised before they were three years old.[5] A free three-dose vaccine was introduced in July 2014 for under 15 weeks olds.[6] In the US, vaccine introduction resulted in reduced rates of children hospitalised with rotavirus.[7]

This study aimed to determine overall and age-specific rates of gastroenteritis hospitalisation of 0–24 year olds in New Zealand and identify the ages at greater risk.

METHODS

A retrospective analysis, for the period 2000–2014, of acute and arranged in-patient hospitalisations of 0–24 years with a primary diagnosis of gastroenteritis extracted from the National Minimum Dataset.

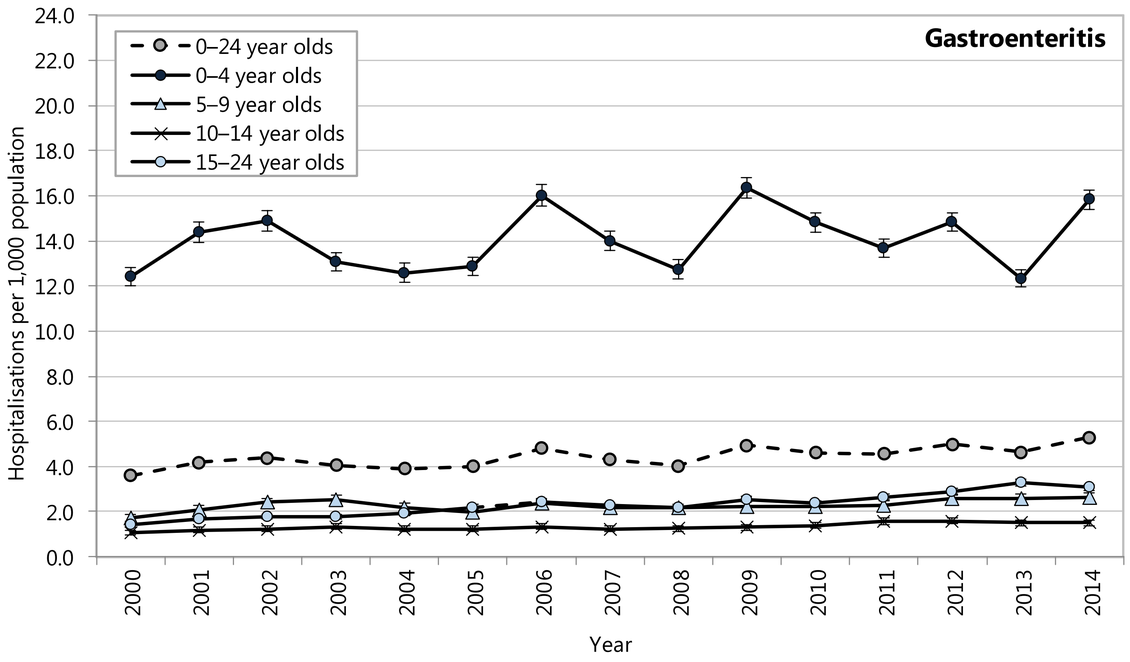

Figure 1: Hospitalisation rate for gastroenteritis, by age group
Numerator: National Minimum Dataset; *Denominator*: Statistics NZ Estimated Resident Population; Rate per 1,000 age-specific population

CODING FOR GASTROENTERITIS, ENTERITIS, COLITIS OR DIARRHOEA

Pre 1 July 2008 (ICD-10-AM 1st–3rd editions):
If '**infectious**' is not specified in clinical notes then gastroenteritis, enteritis, colitis, or diarrhoea is coded to:

- Patient under 16 years: '*Diarrhoea and gastroenteritis of presumed infectious origin*' (A09)
- Patient 16 years and over: '*Other non-infective gastroenteritis and colitis*' (K52.9)

Post 1 July 2008 (ICD-10-AM 6th edition on):
The clinical documentation in the clinical notes must state:

- '**infectious**' and type; or
- 'chronic' or 'non-infectious' to be coded as '*Other non-infective gastroenteritis and colitis*'.

Otherwise gastroenteritis is coded as '*Gastroenteritis and colitis of unspecified origin*' (A09.9), irrespective of age of patient.

'*Nausea and vomiting*' (R11) is a symptoms and signs code, and ONLY assigned if there is **NO** clinical documentation indicating another condition.

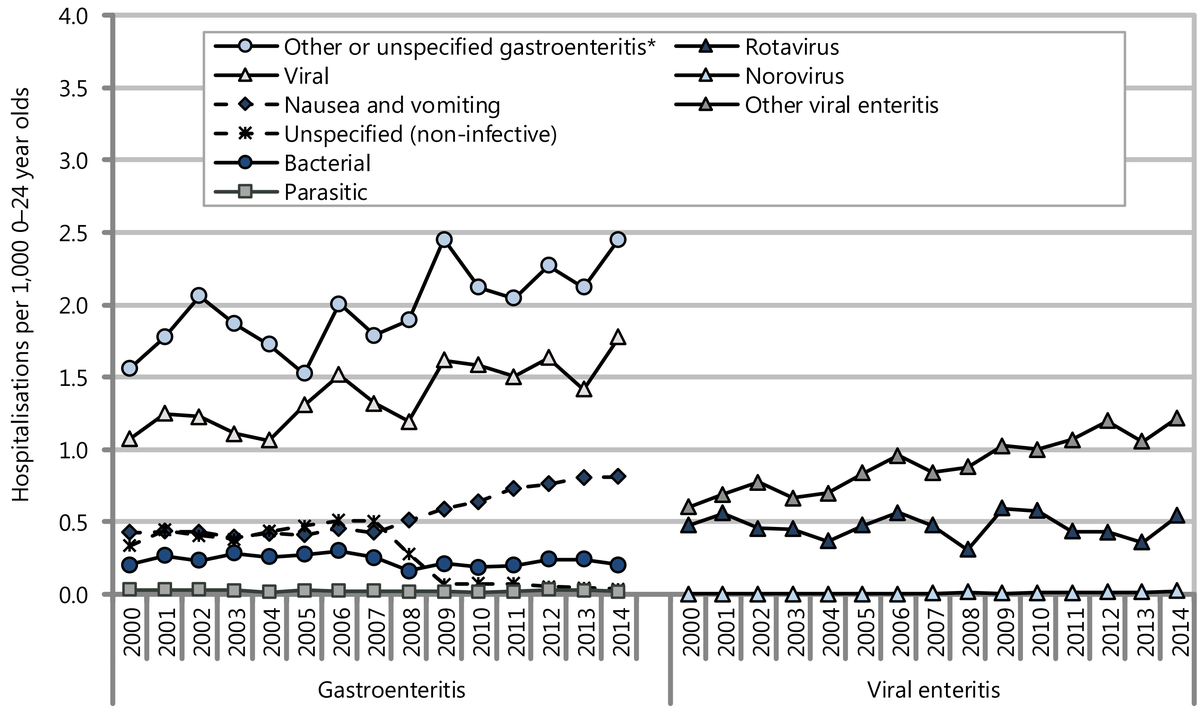

Figure 2: Hospitalisation rate for gastroenteritis, by diagnosis
Numerator: National Minimum Dataset; *Denominator*: Statistics NZ Estimated Resident Population;
* Other or unspecified (infectious) gastroenteritis

RESULTS

- Gastroenteritis hospitalisation rate increased from 3.6 per 1,000 0–24 year olds (*n*=5,028) in 2000 to 5.3 per 1,000 (*n*=8,151) in 2014 (**Figure 1**).
- The highest rates were for 0–4 year olds (**Figure 1**).
- Predominant forms of gastroenteritis documented as the reason for hospitalisation were: (**Figure 2**)
  - Non-specific gastroenteritis (45.7%),
  - viral enteritis (32.9%), and
  - nausea and vomiting (presumed non-infectious; 15.5%).
- Highest hospitalisation rates for the various forms of gastroenteritis were for under one year olds, with the exception of rotavirus where one year olds were highest (**Figure 3**).

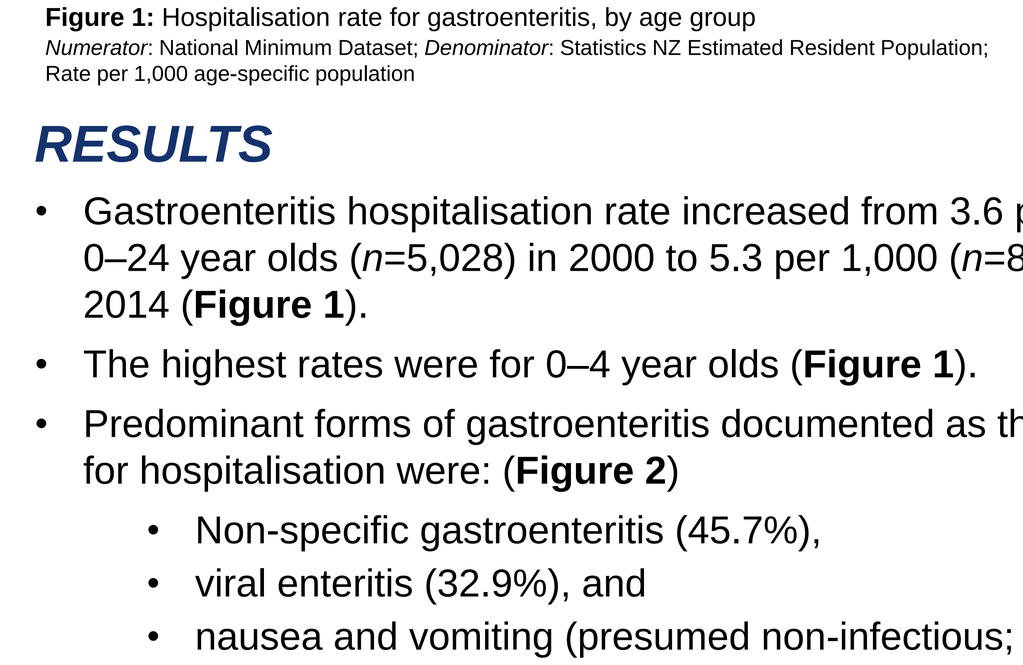

Figure 3: Hospitalisation rate for gastroenteritis, by age and select diagnosis
Numerator: National Minimum Dataset; *Denominator*: Statistics NZ Estimated Resident Population

CONCLUSION

Hospitalisation rates for gastroenteritis have been increasing in New Zealand since 2000. The high rates for those under two years is consistent with other research.[2,5]

The highest hospitalisation rates were associated with non-specific diagnoses, particularly notable within viral diagnoses, where '*other viral enteritis*' increased while the rotavirus and norovirus rates appeared stable.

REFERENCES

1. Charles MD, et. al. *Hospitalizations Associated With Rotavirus Gastroenteritis in the United States, 1993–2002*. The Pediatric Infectious Disease Journal 2006;25(6):489–93.
2. Dey A, et. al. *Changes in hospitalisations for acute gastroenteritis in Australia after the national rotavirus vaccination program*. Medical Journal of Australia 2012;197(8):453.
3. Craig E, et. al. *The health of children and young people with chronic conditions and disabilities in New Zealand*. Dunedin, New Zealand: New Zealand Child and Youth Epidemiology Service. 2011.
4. Craig E, et al. *Developing a tool to monitor potentially avoidable and ambulatory care sensitive hospitalisations in New Zealand children*. New Zealand Medical Journal 2012;125(1366):25–37.
5. Grimwood K, Huang QS, Cohet C, Gosling IA, Hook SM, Teele DW, et al. *Rotavirus hospitalisation in New Zealand children under 3 years of age*. Journal of Paediatrics and Child Health 2006;42(4):196–203.
6. Ministry of Health. *Rotavirus and the RotaTeq vaccine: Factsheet for vaccinators and health professionals.* HP5898. Wellington, New Zealand: Ministry of Health. 2014.
7. Curns AT, Steiner CA, Barrett M, Hunter K, Wilson E, Parashar UD. *Reduction in Acute Gastroenteritis Hospitalizations among US Children After Introduction of Rotavirus Vaccine: Analysis of Hospital Discharge Data from 18 US States*. Journal of Infectious Diseases 2010;201(11):1617–24.

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