

CONSULTATION PATHWAYS FOR CHILDREN WITH ROTAVIRUS GASTROENTERITIS AND ACUTE GASTROENTERITIS IN ITALY AND SPAIN: THE REVEAL* STUDY

*Rotavirus Gastroenteritis Epidemiology and Viral Types in Europe Accounting for Losses in Public Health and Society

Carlo Giaquinto¹, José María Paricio Talayero², Liviana da Dalt¹, Miguel Tomás Vila³ for the REVEAL Study Group

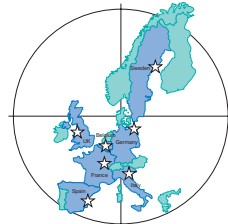
¹University of Padua, Italy; ²Hospital Marina Alta, Denia, Spain; ³Hospital Francesc de Borja, Gandía, Spain

INTRODUCTION

- Rotavirus is a major cause of severe acute gastroenteritis (AGE) in children <5 years old worldwide. Rotavirus gastroenteritis (RVGE) accounts for an estimated ~700,000 outpatient visits, >87,000 hospitalisations and 231 deaths annually in the European Union (EU) alone.¹
- Immunisation strategies employing recently available rotavirus vaccines should be based on the incidence of RVGE by age, the causative serotypes, and the total disease burden, including the wider burden placed on families and healthcare resources. Comprehensive Europe-wide data, however, have been lacking to date.
- The Rotavirus Gastroenteritis Epidemiology and Viral Types in Europe Accounting for Losses in Public Health and Society (REVEAL) Study has assessed the annual incidence rates of acute gastroenteritis (AGE) and RVGE in children <5 years old seeking medical attention in primary care, emergency care, and hospital settings in 7 European countries. The study findings have been reported recently in 4 papers.²⁻⁵
- We present REVEAL Study data on the healthcare settings consulted for an AGE episode in Italy and Spain.

METHODS

- This was a prospective, 1-year observational study conducted in the 2004–2005 season using a common protocol in Belgium, France, Germany, Italy, Spain, Sweden and the UK.
- In each country, a study area was selected (population ~255,000), in which all hospitals and emergency rooms that might see children with AGE, and a sample of primary care physicians (general practitioners and/or paediatricians) were included.
- All children <5 years old presenting with AGE during the 1-year study period were eligible. AGE was defined as an episode of at least 3 loose stools, at least 3 watery stools, or forceful vomiting associated with gastroenteritis, in a 24-hour period in the 7 days before the medical visit. Each AGE episode, including recurrent episodes, must have been preceded by a 14-day symptom-free period.
- If a child visited >1 healthcare setting, they were included in the study at the highest level of care, in increasing order: primary care, emergency room, hospital.
- Healthcare consultations, resource use and costs were recorded for each case of AGE, and recurrent episodes (i.e. those separated by at least 14 symptom-free days) were considered as separate cases.



RESULTS

- 2846 children with AGE were included in the study – 757 in Italy and 801 in Spain.
- While ~60% of episodes required only one consultation, ~40% required up to 6 consultations with different healthcare providers across multiple settings (Figure 1).
- Many, sometimes complex, pathways of care were identified – 31 in Italy and 36 in Spain (Figure 2).
- For children with RVGE compared with those with non-rotavirus AGE, the relative risk of hospitalisation after an initial consultation in primary care was 3.37 (95% CI: 1.77–6.43) and 3.66 (95% CI: 1.92–6.96) for Italy and Spain, respectively.

Figure 1. Percentage of children with AGE first presenting in primary care, emergency rooms and hospitals who subsequently consulted in another setting.

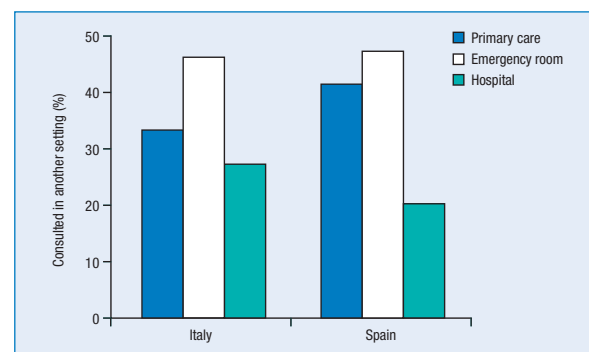
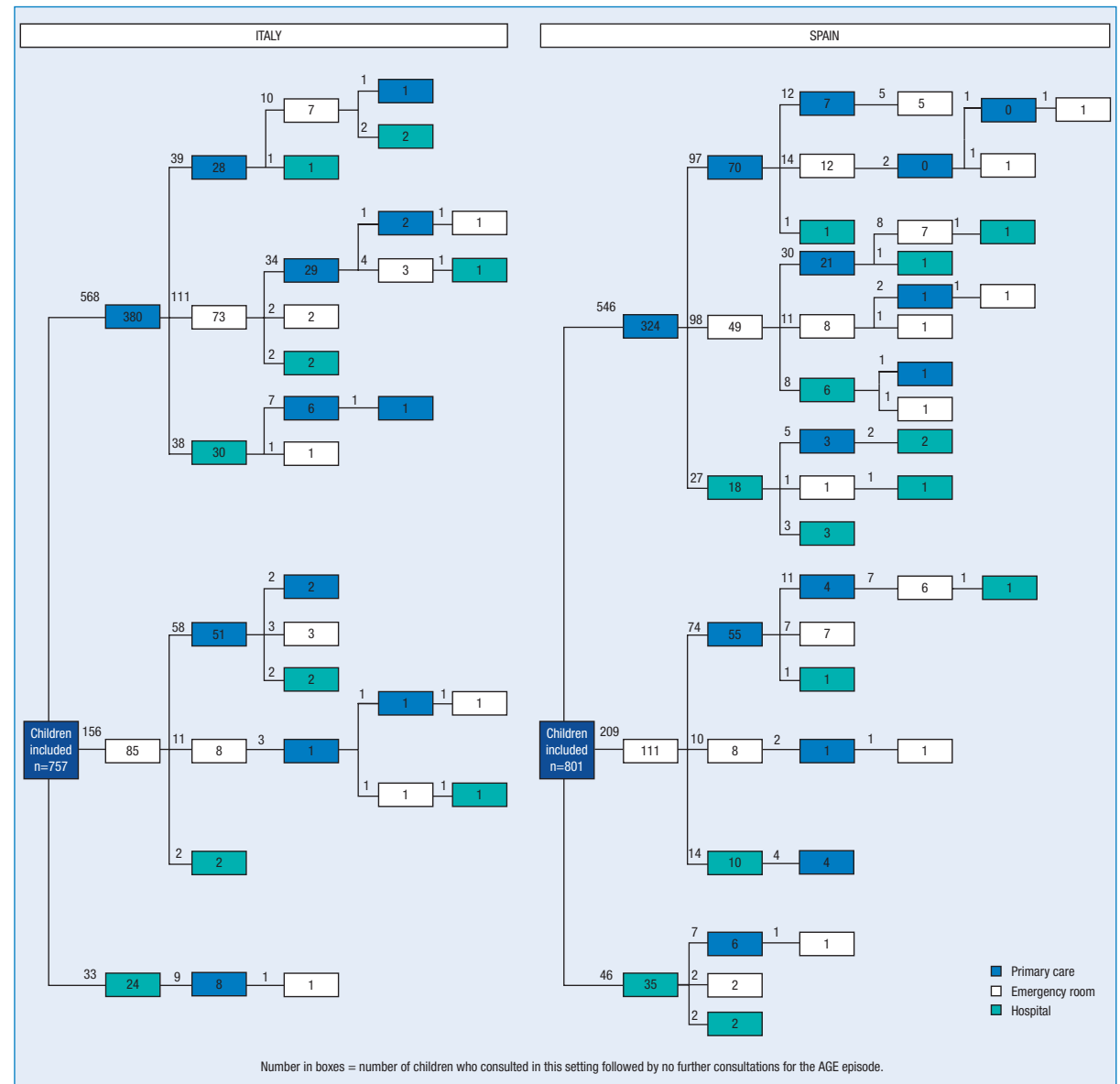


Figure 2. Multiple complex consultation pathways across multiple healthcare settings for children with AGE.



CONCLUSIONS

- The REVEAL Study was the first large, prospective, international study to investigate systematically the burden of paediatric AGE and RVGE across Europe in 3 clinical settings using a common protocol.
- Children with AGE frequently use healthcare resources across multiple clinical settings following complex pathways.
- Compared with children with non-rotavirus AGE, those with RVGE were over 3 times more likely to need hospital care after an initial primary care consultation. This is consistent with RVGE having a more severe disease course that requires earlier, more intensive management.⁴
- Although the impact of RVGE (including nosocomial infections) on healthcare resources should not be underestimated, the burden on families is substantial. For families, seeking healthcare multiple times in multiple settings contributes to the associated stress,⁶ time and costs (e.g. from medication, travel, lost work days and wages, and childcare).⁵ Moreover, families bear the load of providing domiciliary care – while an estimated 698,500 children are seen in clinics annually in the EU, a further 2,794,000 children (80% of all cases) may be treated at home.¹

- The REVEAL Study has highlighted the great burden of paediatric RVGE for patients, families and healthcare providers in Europe, which could be reduced by routine rotavirus vaccination of infants. A live oral pentavalent rotavirus vaccine has been shown in a pivotal trial to significantly reduce healthcare utilisation across primary care, emergency room and hospital settings in Europe.^{7,8}

REFERENCES

- Soriano-Gabarró M et al. *Pediatr Infect Dis J* 2006;25 (suppl 1):S7–S11.
- Van Damme P et al. *J Infect Dis* 2007;195 (suppl 1):S4–S16.
- Van Damme P et al. *J Infect Dis* 2007;195 (suppl 1):S17–S25.
- Giaquinto C et al. *J Infect Dis* 2007;195 (suppl 1):S26–S35.
- Giaquinto C et al. *J Infect Dis* 2007;195 (suppl 1):S36–S44.
- Van der Wielen M et al. Poster presentation at the 25th Annual Meeting of The European Society for Paediatric Infectious Diseases (ESPID); May 2–4, 2007; Porto, Portugal.
- Vesikari T et al. *N Engl J Med* 2006;354:23–33.
- Itzler R et al. 4th World Congress of the World Society for Pediatric Infectious Diseases (WSPID); September 1–4, 2005; Warsaw, Poland. 2005, p1-2.