**INTRODUCTION**

Shiga-toxicigenic *E. coli* (STEC) is an important zoonotic pathogen associated with diarrhoea, haemorrhagic colitis and haemolytic uraemic syndrome. STEC is a notifiable infectious disease in Ireland. In 2011, 270 cases of STEC were notified in Ireland, representing an incidence of 5.9/100,000 population. 69% of isolates were O157 and 31% were non O157 - 17% O26 and 14% various other serotypes. Our laboratory reported 19 STEC - 79% O157 and 21% O26. Detection of STEC from faecal samples is challenging because of the diversity of background of *E. coli* present in all stool samples and because of the diversity of STEC *E. coli* serotypes.

Results: In this study, 1846 faecal samples were plated on CHROMagarTM STEC and CHROMagarTM O157 and incubated at 37°C. Suspect colonies (mauve) were confirmed as *E. coli* by indole production and morphology on Chromogenic UTI agar. *E. coli* were evaluated by agglutination with antisera (026, 0103, 0111, 0145 and 0157). Isolates agglutinating with specific antisera were referred to the national reference laboratory for molecular detection of stx and serotyping. Suspect colonies on CHROMagar O157 were confirmed as O157 by Oxoid Dryspot *E. coli* O157 and referred to the reference laboratory.

**RESULTS**

- Time period for the study was from 02/02/2012 to 10/06/2012.
- Samples studied included 1846 routine clinical faecal samples.
- Faecal samples were cultured on CHROMagar STEC in parallel with CHROMagar O157.
- Suspect STEC colonies were those appearing mauve on CHROMagar STEC while suspect STEC O157 colonies were those appearing pink on CHROMagar O157.
- STEC colonies were confirmed as *E. coli* by indole production and appearance on Chromogenic UTI agar.
- *E. coli* isolates were evaluated by agglutination with *E. coli* Pool 1 antisera (containing 026, 0103, 0111, 0145 and 0157 antisera).
- *E. coli* isolates agglutinating with specific antisera were referred to the national public health reference laboratory for confirmation as STEC including molecular detection of stx1 and 2 and serotyping.

- STEC mauve colonies on CHROMagar STEC™
- Some Small Rural Water Supplies in West of Ireland

**CONCLUSION**

- Adoption of STEC CHROMagar to replace O157 CHROMagar results in a transformation of the apparent epidemiology of STEC in our region.
- O26 is the predominant STEC O group in our region similar to adjoining regions of Ireland.
- The predominance of O26 in the region may reflect water borne transmission as many households in rural sectors of the region are served by untreated private water supplies (individual wells or small, unregulated group water supplies) which are liable to contamination with animal waste particularly following heavy rainfall.
- CHROMagar supports detection of O157 and O26 STEC with relatively few false positive results.
- Its performance for other STEC O groups is less satisfactory.
- Under recognition of STEC remains a concern due to the limited range of antisera used in the protocol.
- However, where routine application of molecular methods of detection to all clinical samples is not practical, CHROMagarTM STEC can play a significant role in enhanced detection of STEC infection and in providing a more complete picture of the epidemiology of STEC infection.

**BIBLIOGRAPHY**