Neuroendocrine neoplasms in the paediatric, adolescent and young adult population in New Zealand and Queensland, Australia

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Background
Multiple studies have shown the incidence of Neuroendocrine neoplasms (NENs) to be increasing worldwide. However, information in the paediatric, adolescent and young adult (PAYA) patient group is sparse globally. This retrospective population-based analysis describes the incidence and mortality of NENs in the PAYA population in two regions - New Zealand (NZ) and Queensland (Qld), Australia.

Methods
Data regarding individuals 190 years diagnosed with NENs between 2008 and 2012 was obtained from the New Zealand based NETwork Register and the Queensland Oncology Repository. Findings include overall incidence, site-specific and histopathologic subtype, and cause specific mortality.

Results
122 NENs were diagnosed in NZ and 170 in Qld between 2008 and 2012. 65% in NZ and 68% in Qld were females. The incidence of NENs over the period was 1.35 cases per 100,000 in NZ, 1.87 cases per 100,000 in Qld (Figure 1). The majority (84%) in both populations occurred in patients 15 years of age and above (Figure 2). 68% of all NENs in NZ and 79% in Qld were in the appendix (Figure 3). 8 (7.3%) of the NZ and 3 (1.7%) of the Qld PAYA cohort had died of NEN (Figure 4). In the subgroup 155 years 16 NENs were identified in NZ and 27 in Qld. The majority (87%) occurred in the age group of 10 years and above in both cohorts. 9 NZ and 25 Qld cases were located in the appendix. 2 deaths were identified in the NZ cohort and no death occurred in Qld.

Conclusion
- This study represents a comparison of two regions with similar population sizes and the findings show that the presentation of NENs are consistent between the two populations.
- The vast majority of cases in the PAYA population were appendiceal carcinoid tumours.
- No deaths occurred in patients with appendiceal NENs - all deaths occurred in typically more aggressive NEN types.
- Further work will be undertaken to understand subtle differences and to study patterns of treatment between the two cohorts. This will provide important context when comparing other international NEN studies.

Figure 1: Trends in numbers and ASR rates for NENs, New Zealand and Queensland 2008-2012, 0-29 year old’s (PAYA)

Figure 2: Age group distribution for NENs, New Zealand and Queensland 2008-2012, 0-29 year old’s (PAYA)

Figure 3: Primary site distribution for NENs, New Zealand and Queensland 2008-2012, 0-29 year old’s (PAYA)

Figure 4: Follow up status and description of NEN deaths, New Zealand and Queensland 2008-2012, 0-29 year old’s (PAYA)