

# Don't get gastro in Geelong: 11 years of Guillain Barre syndrome in Barwon Health

P Phongpagdi, L Norrie, S Chen, and B Cutts



## Background

Guillain Barre syndrome (GBS) is an autoimmune disorder that causes neuromuscular paralysis and is often preceded by a bacterial or viral infection.(1) The global incidence of GBS is 1-2 cases per 100,000 annually, with more males affected than females.(2) Typically the incidence rises with increasing age.(2) GBS is thought to be a post infectious neuropathy triggered by certain infections.(3)

Disease progression varies with the severity of the disease and pathological subtypes, with 25% of patients requiring admission to intensive care units for mechanical ventilation.(3)

The Neurology team believes that the incidence and severity of GBS is worse in the Barwon South West region (BSWR) compared to baseline norms.

## Aim

To find and describe all patients admitted with GBS to Barwon Health (BH) from 2009-2019. We hypothesised that BH has a greater incidence of GBS compared to that described within the literature, with greater number of patients requiring mechanical ventilator support.

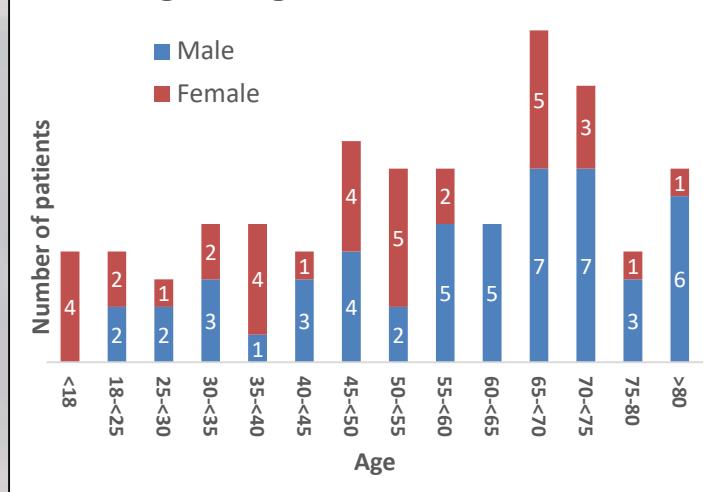
## Methods

A file review of patients was completed using Data Warehouse. We reviewed all patients with a principal diagnosis of GBS and/or polyneuropathy between 2009-2019. Data was collected by one clinician using stringent inclusion/exclusion criteria. Data was analysed using Microsoft Excel. Inclusion criteria: First diagnosis of GBS (AIDP, AMAN, AMSAN or MFS) that received care through UHG. Patients were excluded if their diagnosis changed from GBS (e.g. to CIDP), and additional admissions after discharge for the same diagnosis were excluded. Patients transferred from other facilities due to ICU bed availability were excluded.

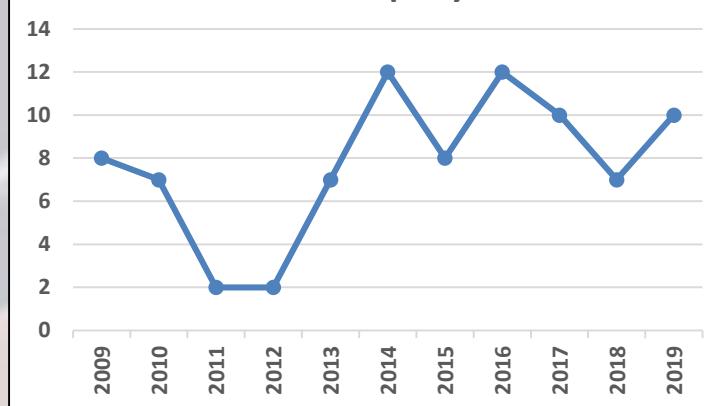
## Glossary

- AIDP:** Acute Inflammatory Demyelinating Polyneuropathy
- AMAN:** Acute Motor Axonal Neuropathy
- AMSAN:** Acute Motor and Sensory Axonal Neuropathy
- BH:** Barwon Health
- BSWR:** Barwon South West Region
- CIDP:** Chronic Inflammatory Demyelinating Polyneuropathy
- GBS:** Guillain Barre Syndrome
- MFS:** Miller Fisher Syndrome
- UHG:** University Hospital Geelong

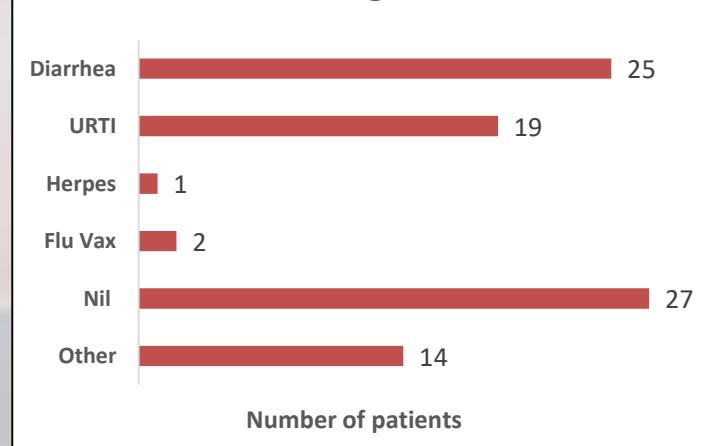
## Age and gender distribution



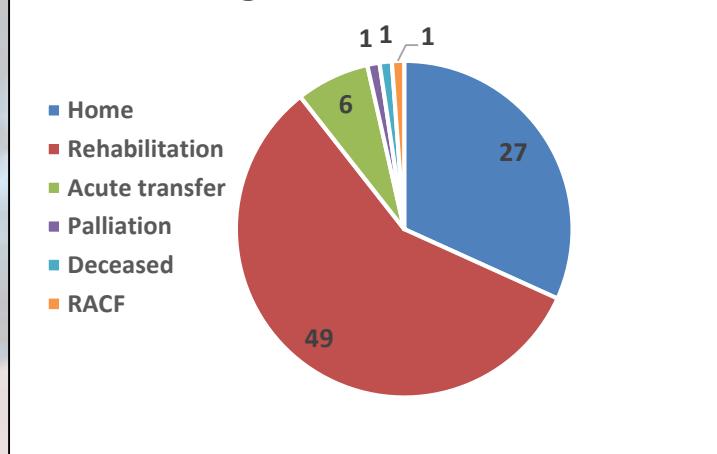
## Incidence per year



## Preceding illness



## Discharge destination from UHG



## Results

From 2009 to 2019 there were 85 presentations of GBS to UHG. Average age of onset was 54.1 years (2-88 years old). Four patients were under 18 years of age, and five patients lived outside of the BSWR. Fifty patients were male (1.42:1). Of 52 patients admitted to ICU, 17 patients required mechanical ventilation (32%). Average acute length of stay was 10.2 days for non-ventilated patients, and 82.2 days for ventilated patients. Neurophysiological studies were completed for 35 patients, showing 22 (63%) had AIDP, 5 (14%) had MFS, 5 (14%) had AMSAN and 3 (9%) had AMAN. Geographically, the postcode with the most presentations was Corio (n=10), followed by Grovedale and Highton (n=5). The BSWR averages 7.27 new diagnoses per year, representing an incidence of 1.82/100,000 per year.

## Discussion

The incidence of GBS in the BSWR is similar to the reported global incidence.(2) Consistent with other Australian based studies, we found that men were more likely to be affected than women with a ratio of 1.42:1, compared to 1.61:1.(4) The age of onset is also similar, 54 years, compared to 55 years in a Sydney-based study.(5) In our study, 27 patients had no preceding illness (31%), while diarrhea was the most frequently identified trigger (25 cases, 29%). Conversely, 44.5% of cases were preceded by an upper respiratory tract infection in another Australian study.(4) Limitations exist within our research as not all patients had a clear history of preceding events documented in their file, likely accounting for a high proportion of patients with no preceding illness. Based on our analysis, 32% of patients admitted to UHG required mechanical ventilation, which is higher than other Australian studies; 24% requiring mechanical ventilation in one study,(4) and another in which no patients required mechanical ventilation.(5) Our study also had a higher incidence of the axonal subtypes, which suggests that our cohort will recover more slowly.(4,5) 58% of patients in our study required further rehabilitation prior to discharge, which is higher than other studies (4,5).

## Conclusion

The clinical and epidemiological features of GBS at BH are consistent to previous reports and other Australian studies, that confirm the male predominance, incidence per population and increased incidence with age. However, this study demonstrates that patients at Barwon Health have greater severity of disease, with a greater number of patients requiring mechanical ventilation and rehabilitation.

## References

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