

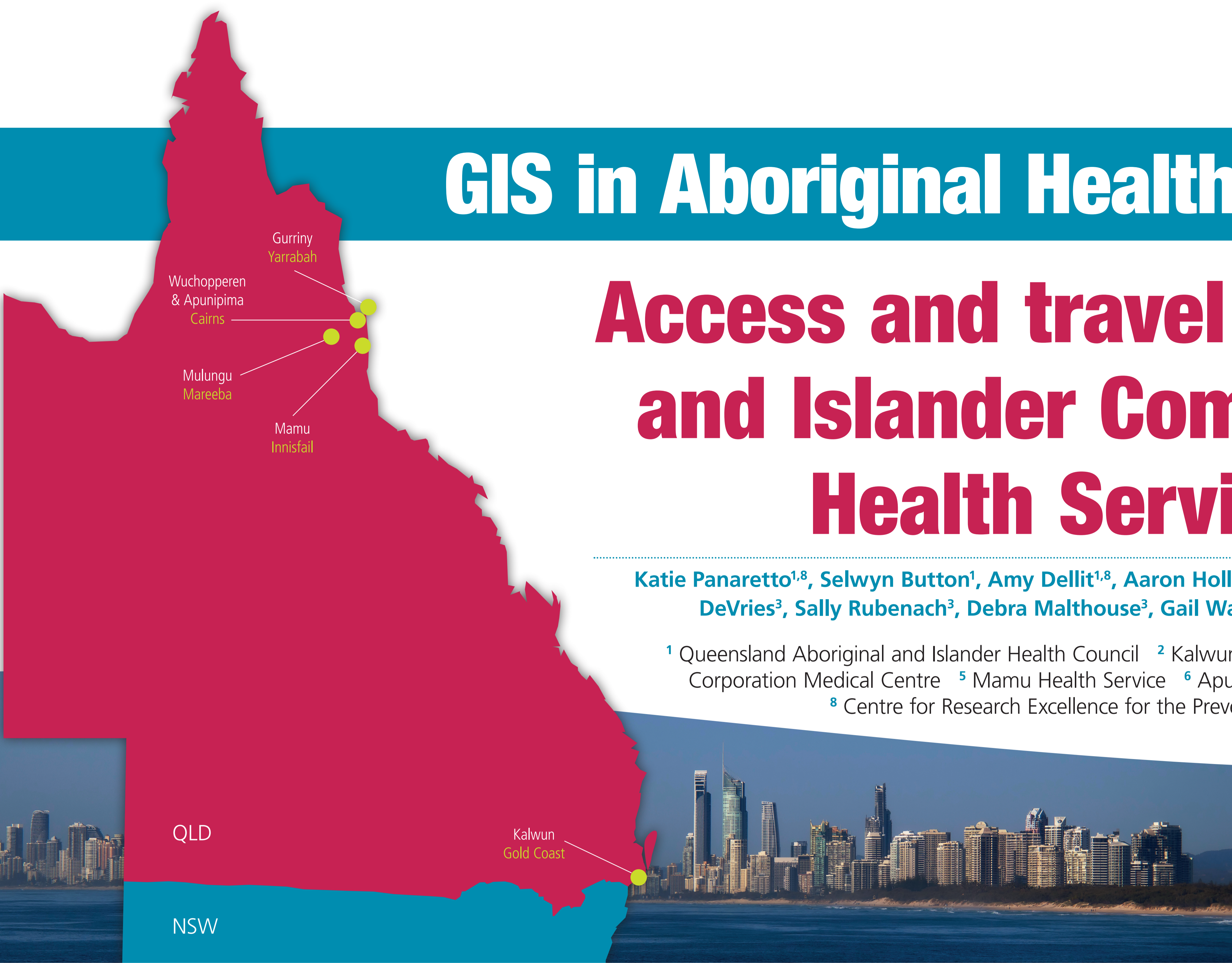
Are we there yet?

GIS in Aboriginal Healthcare in Queensland

Access and travel time to Aboriginal and Islander Community Controlled Health Services in Queensland

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Introduction

This project seeks to increase our understanding of how Aboriginal and Torres Strait Islander patients use primary health care services and particularly the impact of distance on accessibility and the quality of care delivered by clinical teams.

Objectives

- To explore patient access to Queensland Aboriginal and Islander Health Council (QAIHC) member Aboriginal and Islander Community Controlled Health Services and general practices in Queensland, in one urban area (Gold Coast) and one regional/rural area (Far North Queensland)
- To describe time travelled to access an Aboriginal and Islander Community Controlled Health Service

Methods

- 6 AICCHS were involved: 1 urban (RA1) service in South East Queensland and 5 outer regional (RA3) services in Far North Queensland.
- Data was extracted for all services between August 2013 and February 2014.
- The number of Aboriginal and Islander patients who had made a visit to the 6 services within the previous 2 years were compared with catchment populations by drive time and at SA2 level.
- Patient addresses were extracted using Pen Computer Systems Clinical Audit Tool (PenCAT) for patients who made at least one visit in two years.
- Addresses were mapped and 10, 30 and 60 minute travel times were calculated using GIS software - MapInfo Professional v12.0, MapInfo Drivetime Queensland and Spectrum on Demand.
- Layered mapping of patient information with population, the relative accessibility of mainstream GPs, allied health, pharmacies, hospitals and public transport was produced using the CheckUp Directory.

Results

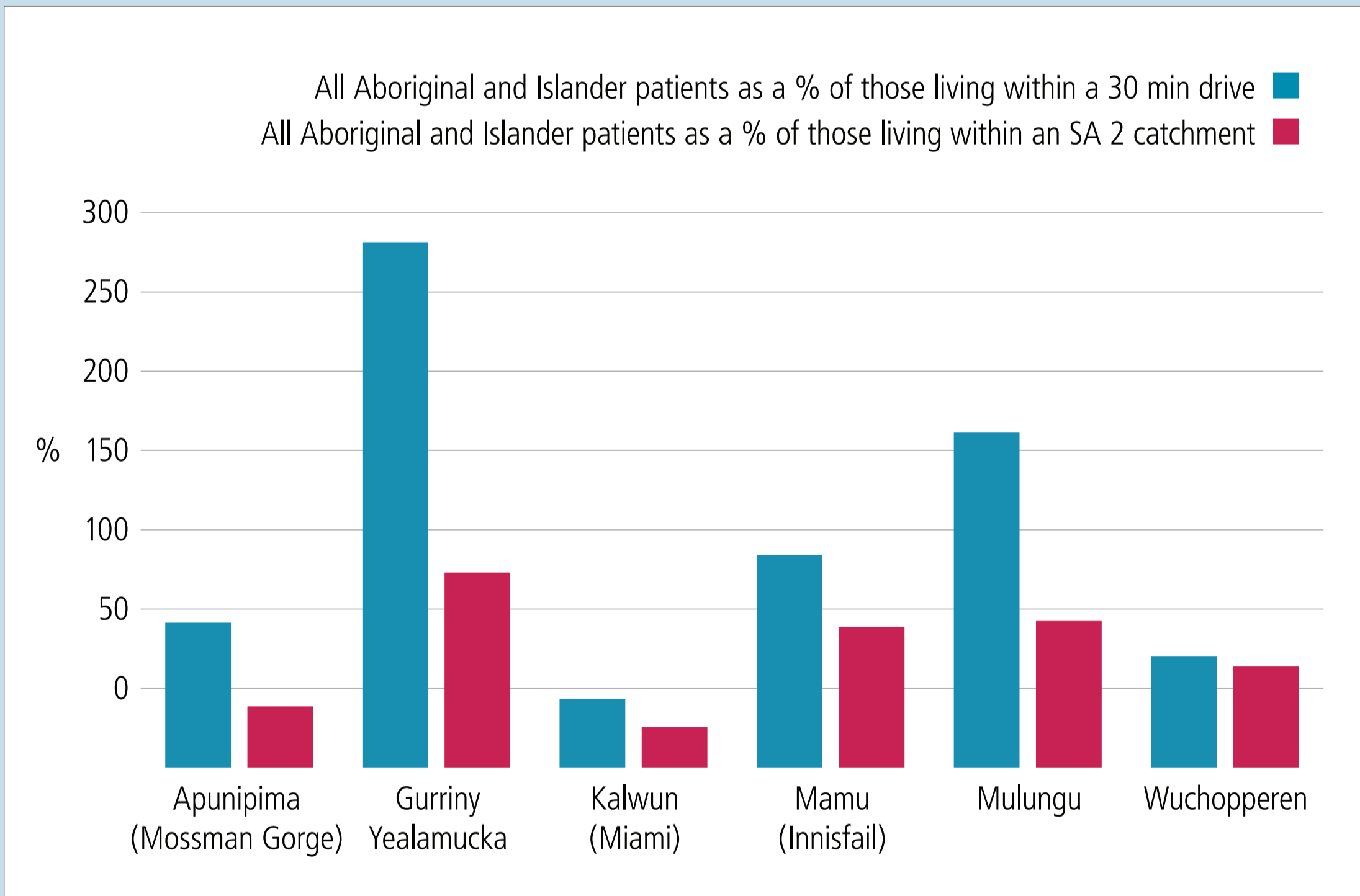
- A total of 26,199 patients had made 1 visit to the 6 participating services in the 2 years prior to data extraction. For the 5 services around Cairns, between 40-123% of the ABS population in their SA2 catchment areas or 70-331% of the Aboriginal population within a 30 minute drive time used these services (Figure 1). For the SE corner service, the proportion of the ABS population using the service was much lower as might be expected in a major metropolitan area.
- For the mapping work, 96-98% of patient addresses were successfully Geo-coded. Travel times for patients to services varied widely, Table 1, Figures 2-5.
- More than 1 in 5 patients travel more than 30 minutes to visit an Aboriginal and Islander Community Controlled Health Service.

- More than 1 in 10 patients are travelling over 1 hour to access these comprehensive culturally specific services.
- For one AICCHS, about 40% of their patients live more than 30 minutes from the service (Figure 4).
- Most services are in regions with alternate primary health care providers available although the numbers of these greatly diminishes with remoteness. For example:
 - In the South East there are 162 mainstream GPs, 11 hospitals and 61 pharmacies in the Kalwun catchment area.
 - In Cairns there are 32 mainstream GP practices, 2 hospitals and 5 pharmacies in the Wuchopperen catchment area.
 - For Ravenshoe there are 6 mainstream GPs, 1 hospital and 5 pharmacies in the catchment area.

Table 1. Drive times for all services

Service	2011 Remoteness Area (RA)	All Patients	0 - 10 min	10 - 30 min	30 - 60 min	60+ min
Mulungu (Mareeba)	RA3	2290	1782 (80%)	120 (5%)	177 (8%)	158 (7%)
Mamu (Ravenshoe)	RA3	1134	426 (38%)	210 (19%)	278 (25%)	202 (18%)
Wuchop (Cairns)	RA3	8581	5835 (71%)	1980 (24%)	331 (4%)	125 (2%)
Wuchop (Midin)	RA3	1896	1178 (63%)	435 (23%)	146 (8%)	115 (6%)
Gurriny (Yarrabah)	RA3	3955	3165 (81%)	51 (1%)	323 (8%)	383 (10%)
Mamu (Innisfail)	RA3	5195	2547 (51%)	455 (9%)	1183 (24%)	815 (16%)
Apunipima (Mossman Gorge)	RA3	343	212 (63%)	72 (21%)	5 (1%)	50 (15%)
Kalwun All Patients Miami (from Miami)	RA1	2805	963 (35%)	1274 (46%)	328 (12%)	213 (8%)

Figure 1. Patients as proportion of Aboriginal & Torres Strait Islander people in catchment area



Conclusion and future direction

- Aboriginal and Islander Community Controlled Health Services see the majority of Aboriginal and Torres Strait Islander people living in their region according to Census data and data from Electronic Medical Records.
 - 30 minutes is possibly the longest a patient should be expected to drive to access primary health care.
 - Using 30 minutes as a cut off, many patients (between 10-40%) using Aboriginal and Islander Community Controlled Health Services have poor access to their choice of culturally specific comprehensive primary health care.
 - Large numbers of patients living outside service catchment areas has implications for the use of the EPC item number system and thus an ability to link in allied health care.
 - Use of GIS systems is helping clinics with their planning and advocacy.
- Future work will further explore how patients use services and how distance impacts on the quality of care received.

Figure 2. Patients of Far North Queensland AICCHSs

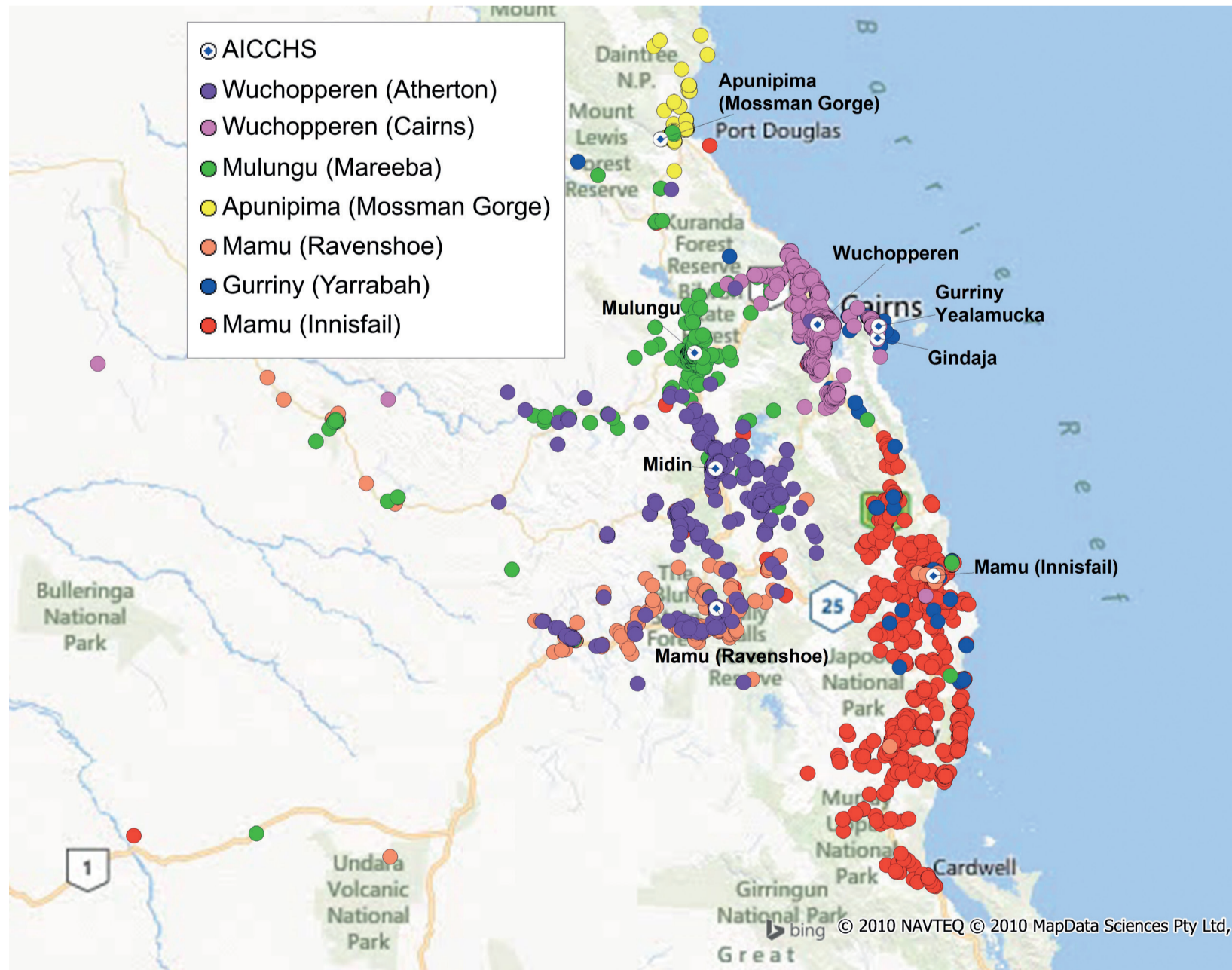


Figure 3. Drive time map – Gurriny Yealamucka

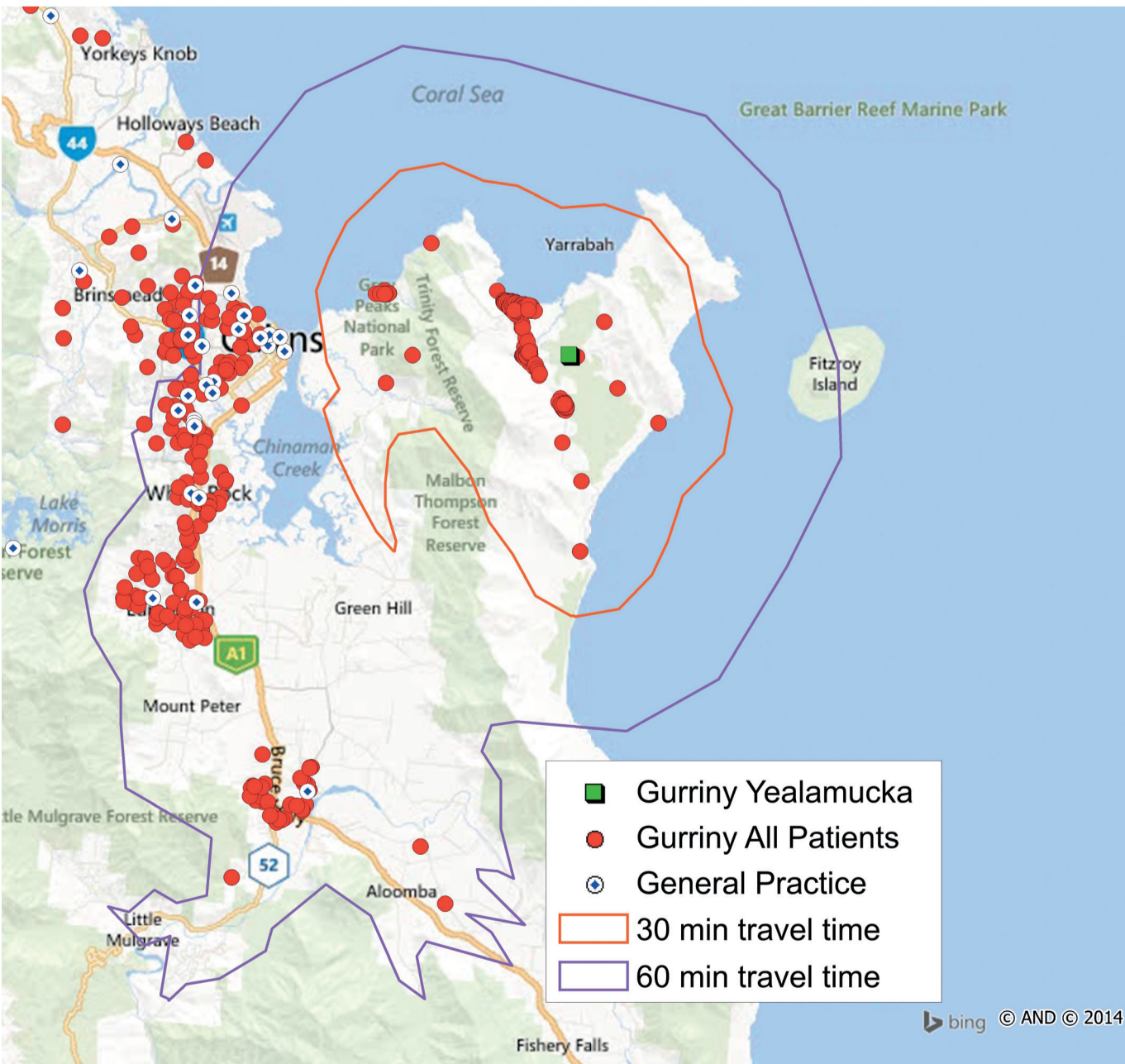


Figure 4. Patients of Mamu



Figure 5. Drive time map – Kalwun

