

**Title:** Integrating General Practice into the Australian COVID-19 response: A description of the GP Respiratory Clinic program in Australia

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## **Abstract**

Integrating primary care within the health response is key to managing pandemics and other health emergencies. In recognition of this role the Australian Government established a network of General Practitioner (GP) led respiratory clinics (GPRCs) in response to the COVID-19 pandemic, as part of a suite of broader measures aimed at sustaining community access to primary care. GPRCs provide holistic face to face assessment and treatment to those with respiratory symptoms in an environment with strict protocols for infection prevention and control; ensuring that this patient cohort is able to access high quality primary care whilst protecting the General Practice workforce and other patients. The GPRC model was rapidly developed and operationalised with the first 2 GPRCs opening on March 21, 10 days after the policy was announced. Subsequently a total of 150 GPRCs have opened with broad geographic coverage that have serviced over 800,000 individuals living in more than 99% of Australia's postcodes. Through use of a standardised data collection tool GPRCs also provide the largest and most complete source of primary care surveillance data of respiratory illness in Australia. The success of the GPRC model has been possible through strong partnerships with Primary Health Networks and individual general practices who rapidly shifted operations to embrace this new approach. The GPRC network offers ongoing infrastructure and workforce capability to manage other health emergencies, and may be able to be adapted to other settings.

**Keywords:** Primary care, general practitioners, pandemic, COVID-19

### **Abbreviations:**

**General Practitioner:** (GP)

**PHN:** Primary Health Network

**ACCHO:** Aboriginal Community Controlled Health Organisation

**GPRC:** General Practitioner led Respiratory Clinic

**IPC:** Infection prevention and control

**PPE:** Personal Protective Equipment

## **Introduction**

Primary care represents the frontline of the health system and has a critical role in responding to pandemics and other health emergencies<sup>1,2</sup>. However experience has demonstrated that primary care is frequently poorly integrated within overarching pandemic health planning, preparedness and response<sup>2-4</sup>.

The last pandemic to have a significant impact on the Australian healthcare system was 2009 H1N1 influenza. General practitioners (GPs) who are the main primary care providers in Australia, were integral to triaging, diagnosis and managing H1N1 influenza cases in the community, mainly through incorporating care of people with influenza symptoms into their mainstream workflow<sup>2</sup>. However, GPs frequently felt unsupported within this role; reporting concerns around the risks of infection (to staff and other patients), interruptions to regular healthcare delivery, lack of clear communication from public health authorities, and difficulty accessing personal protective equipment (PPE)<sup>3,5</sup>.

The Australian Government review of the H1N1 pandemic found that ‘general practice had a larger role than had been identified in planning’<sup>6</sup>. Subsequently, in the context of the COVID-19 pandemic, primary care has been a major component of the Australian Government response<sup>7</sup>. In early March 2020 the National COVID-19 Primary Care Response action plan was released. The plan described six key activity areas<sup>8</sup>. One of these was the establishment by the Australian Government Department of Health of specialised GP-led respiratory clinics (GPRCs) across Australia for dedicated assessment and treatment of those with respiratory illness; the first time this approach has been used in Australia. In this paper we describe Australia’s GP led respiratory clinic program, its establishment and implementation.

## **General Practice in Australia**

Around 90% of Australians visit a GP at least annually<sup>9</sup>; and general practice is the first point of contact with the health system for the majority of Australians. General practices are mostly private businesses; with Australian citizens and permanent residents able to access a rebate (funded through Medicare, Australia’s universal health insurance scheme) when seeing a GP<sup>10</sup>; individuals may also be required to pay an

additional out of pocket payment. A specific model of primary care utilised by many Aboriginal and Torres Strait Islander people is an Aboriginal Community Controlled Health Organisation (ACCHO); this is a primary healthcare service initiated and operated by the local Aboriginal community to deliver holistic, comprehensive and culturally appropriate health care to the community<sup>11</sup>. ACCHOs employ GPs to deliver primary healthcare alongside Aboriginal Health Workers and allied health staff and receive a mix of direct grant funding from the Australian Government and rebates through Medicare.

Geographically each Australian region is covered by a Primary Health Network (PHN), an administrative organisation funded by the Australian Government and designed to improve access to primary care services through coordination between GPs, other primary care services and local hospitals.

## **GPRC model**

### **Rationale**

The assumption behind the GPRC model was that diverting those with respiratory illness away from mainstream general practice into an environment specifically designed to maximise infection prevention and control (IPC) would benefit patients with respiratory illness by ensuring access to care; protect the general practice workforce and other patients, and preserve access to regular services. It was also assumed that continuous rather than ad-hoc use of PPE would ultimately conserve this scarce resource.

### **Program aims**

The establishment of at least 100 GPRCs across Australia was intended to provide comprehensive GP-led assessment of those with mild to moderate respiratory illness during the COVID-19 pandemic.

The program's stated aims were to:

1. Reduce pressure on public hospitals and primary care providers
2. Reduce the risk of COVID-19 exposure across the community

3. Ensure that the usual business of general practice could continue
4. Conserve PPE

Initially funded to run until 30 September 2020, funding was subsequently extended to 30 March 2021. Extensions beyond this time depend on the state of the pandemic and decisions of government.

### **Clinic selection and set up**

Physical criteria, based on standard infection control measures, were developed to guide site selection (see box 1). These were used by PHNs, in consultation with local health districts, to identify suitable practices who might be willing to host a GPRC. Concurrent to this process, disease-modelling determined geographical areas of greatest need where inputs to the model included location of existing hospital fever clinics, population demographics, access to other primary care services and potential risk of COVID-19 transmission (based on the then current areas of community transmission, and model predicted spread of disease). When a clinic was identified as an appropriate site, an initial site inspection was undertaken by the external contractor engaged by the Department. This inspection determined how many assessment rooms the clinic was able to provide, and what, if any, adjustments were required for existing infrastructure, including whether any external huts or other temporary structures were needed to allow appropriate and safe patient flow. Site selection was an iterative process accounting for geographic location and site suitability including the speed at which a clinic could be operationalised. There was a preference to place GPRCs in regional and rural areas, where there is less access to health facilities, and within ACCHOs, reflecting the need for culturally appropriate and safe care for Aboriginal and Torres Strait Islander Australians.

When sites were confirmed the Department entered into contracts with the clinic owner providing them with an upfront payment (including a payment per assessment room to a maximum of 4 rooms) and subsequently a flat fee per patient consultation. Payment per patient was higher than the usual Medicare rebate for a patient consultation, accounting for the high costs of operating the GPRC and ensuring financial viability across times of high and low demand. Payments were not linked to Medicare, meaning

that Medicare ineligible individuals (e.g. non-Australian citizens) were able to access the GPRCs, and there was no out of pocket cost to individuals.

Prior to a clinic's opening, the same external contractor who undertook the first inspection undertook further inspection of any site modifications, conducted staff training (including information about the disease, use of PPE and other aspects of IPC and data collection requirements) and provided initial stocks of PPE. To provide quality assurance, GPRCs were only able to open following a final walk through by an independent IPC expert.

### **Patient flow and infection prevention and control**

A suggested patient flow model, designed according to strict IPC principles to protect both clinic staff and patients, was developed and disseminated to GPRCs via PHNs and the external assurance contractor (Figure 1). A core tenet of the IPC protocols was that each patient must be treated as a case of COVID-19, regardless of exposure history or local epidemiology (noting that most of Australia has had extremely low COVID-19 prevalence levels throughout the pandemic). GPRCs were welcome to develop their own patient flow models and processes, as long as they were clinically safe and adhered to the same level of IPC. Key to the patient flow model was that patients spent as little time as possible in the clinic. This included an online booking system, including self-entry of demographic and clinical details prior to an appointment. Also key to the model was PPE conservation where clinically safe; this included promoting a 'no touch assessment' when appropriate and safe, enabling clinicians to wear the same PPE between patients with non-differentiated illness.

### **Staffing**

GPRCs were required to provide sufficient staff; drawing on existing resources and supplementing via external recruitment where necessary. Minimum staffing requirements included at least one individual to fulfil a clerical/triage role, one clinician per examination room (at least one of whom had to be a fully qualified GP) and sufficient staff to clean rooms between patients. Some GPRCs also recruited

security personnel and staff to greet and direct patients within the clinic car park or building.

### **Data management system**

A bespoke data collection Respiratory Clinic app was co-designed by the Department and an external contractor. The Respiratory Clinic app operated as a mini patient record and collected demographic data, clinical symptoms and findings, diagnosis management and plan, medication prescribed, whether a test was taken, referral to hospital, test results and follow-up. To standardise data collection, relevant fields in the Respiratory Clinic app (e.g. chronic conditions and symptoms) were designed as tick boxes and drop down menus rather than free text. Fields were designed to reflect the data specifications of the National Notifiable Disease Surveillance System. The Respiratory Clinic app functionality included the ability to print patient encounter summary, medical certificates and pathology forms. It did not have the ability to print prescriptions. Some GPRCs chose instead to use their usual patient management systems.

### **Communications and integration with usual care providers and public health authorities**

GPRCs were intended for primary assessment and patients were encouraged to review with their regular GP (via telehealth if needed) for any ongoing care. Where the usual GP was not seeing patients with any respiratory symptoms, or not conducting any face-to-face consultations this was not available and so reviews were conducted in the respiratory clinic. To optimise continuity of care, GPRCs were encouraged to send details of patient attendance and copy test results to each patients' regular GP. GPRCs, supported by PHNs were required to be aware of local care pathways for COVID-19 in their area, including creating linkages with other clinical services and local public health units. In line with public health legislation, GPRCs were required to notify the relevant public health authority of any individuals who tested positive for COVID-19.

### **Surveillance**

GPRCs provided anonymised patient consultation and follow-up data to the Department daily. Data were

also available to PHNs via the same system, for those GPRCs within their area. This mostly occurred via a direct upload of specified fields from the RC app to a secure server. For GPRCs who chose to use their own data collection systems, a workaround was developed to extract data in the required format. Only data on those patients who gave consent (indicated via a checkbox) was able to be accessed by the Department and PHNs.

The Department held weekly data quality meetings, where data (aggregated at the clinic level) were reviewed for accuracy and completeness. Results were fed back to GPRCs for ongoing quality improvement. Weekly surveillance reports (which included information on number of assessments, tests, positive cases, demographics of patients seen and symptom profiles) were distributed to state and Commonwealth public health authorities. GPRC data were also used to report against indicators in the National COVID-19 Disease Surveillance plan<sup>12</sup>, the Australian Pandemic Health Intelligence Plan<sup>13</sup> and to produce a number of other surveillance products.

## **Activity**

The first two GPRCs opened 21 March 2020 in NSW and Queensland, 10 days after the policy was announced. By 29 April 50 GPRCs had opened, with a further 66 GPRCs opening in May and the full 150 GPRCs open by September 2020. See Figure 2 for a map of GPRCs.

From first clinic opening date to 30 October 2020, GPRCs conducted 741,430 assessments with 646,431 tests (96.3% of the 671,212 individuals assessed who consented to share information). COVID-19 tests taken at GPRCs represented around 8% of total tests taken in Australia (at the time of writing), with a percent positivity of 0.08%. This is lower than the overall test positivity in Australia of 0.3%. This can be explained by the fact that the sampling frame for GPRCs is the community and so does not include individuals living in Residential Aged Care Facilities and overseas travellers who are tested in mandatory hotel quarantine; both groups who are overrepresented amongst Australian COVID-19 cases. GPRCs have serviced individuals living in 2,360 postcodes across Australia, representing 99.3% of postcodes. Eighty-three (57%) GPRCs were in non-urban areas and 23 (1.3%) were run by ACCHOs. By



comparison 16% of the Australian population live in non-urban areas and 2.8% of the Australian population identify as Aboriginal and/or Torres Strait Islander.

While adhering to the IPC principles outlined in Figure 1, GPRCs used different approaches to ensuring appropriate infrastructure and infection control; from repurposing individual rooms or wings of existing clinic buildings, to modifying outdoor permanent structures (e.g. carports) or erecting temporary structures adjacent to clinic buildings. Two GPRCs were entirely mobile (using a van or other vehicle to set up in different locations as needed) and three other GPRCs had both a permanent structure and a mobile capacity. Several GPRCs made extensive use of telephone triage and video-conferencing facilities to minimise the time patients were in direct contact with staff. GPRCs demonstrated the ability for rapid scale-up in response to cases in an area through opening for additional hours or opening additional rooms. They were responsive and flexible to local need, including through integration with other health and community services (see illustrative vignette, Box 2).

## Discussion

Pandemic or fever GPRCs are a standard component of Australian pandemic plans but these are usually hospital affiliated<sup>14</sup>. Internationally, primary care clinic-based models have been used for COVID-19 case identification and testing in Singapore<sup>15</sup>, during H1N1 influenza in New Zealand<sup>16</sup> and in health emergencies such as the Christchurch earthquake in 2011<sup>17</sup>. Mobile clinics were deployed as COVID-19 testing sites in the United States, repurposing existing services to meet community needs<sup>18</sup>. This is the first time that this type of model has been used in Australia and demonstrates that an effective program can be swiftly established, even under the conditions of high fear and uncertainty as were prevailing at the beginning of the COVID-19 pandemic. GPs willing to adapt their practices to establish a GPRC showed professional and community leadership, while at the same time embracing a degree of personal and financial risk. This is reflective of previous evidence demonstrating that with support and training Australian GPs are willing to provide care in a pandemic<sup>19</sup>.

Diverting patients with respiratory symptoms to GPRCs ensured that general practices could continue to fulfil

their usual core primary care functions. This was essential to minimise interruptions to regular healthcare delivery experienced in previous epidemics<sup>20-22</sup>. It is also important to recognise the specific gap that GPRCs addressed that centres aimed only at collecting specimens for COVID-19 testing did not; providing holistic care to those with respiratory illness from any cause. In both the context of COVID-19 and previous pandemics, GPs have sometimes not been able to adequately assess those with respiratory symptoms due to concerns about risk to clinicians, staff and other patients.

At the time of writing, GPRCs have been the largest and most complete national source of primary care surveillance data for COVID-19 in Australia. The wide geographical footprint of the GPRCs and the systematic collection of demographics and symptoms furnished a valuable data set and resource for ongoing surveillance and future research. As frontline clinicians with sound knowledge of what is occurring in their own communities GPs are an important source for outbreak detection<sup>1</sup>. The standardised collection of data through the GPRCs systematises this role and the role of the GP within the public health response more broadly.

## **Conclusions**

The GPRC program recognises and formalises the key role of GPs in pandemic response, providing a level of integration that is long overdue for primary care. We have described how this program was implemented under intense time pressure, to provide a valuable service to communities including those with particular needs and vulnerabilities. In a world of increasingly frequent pandemics this program may also offer ongoing infrastructure and workforce capability for management of infectious disease outbreaks and other health emergencies in primary care.

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to establishing this network.

**Conflict of interest statement:** All authors are or were directly involved in developing this program and/or working in GPRCs.

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### Box 1: Site specifications for GP Respiratory Clinics; guide provided to primary health networks

#### Physical requirements

- Located in either a temporary or existing structure that gives protection from the weather
- Direct external access that does not require patients to transit through any other part of the general practice
- Wheelchair access
- Well ventilated, ideally with separate air conditioning system to rest of practice
- Access to toilets for patients (separate to usual practice toilet) and staff
- Sufficient isolation rooms for patients to wait in for assessment; if this is not possible then alternative, workable arrangements (e.g. patients wait in cars for assessment), if this is not possible then the waiting area needs to be large enough to provide separate areas for symptomatic and asymptomatic patients and provide at least 1 metre of distance between all patients

#### Physical location

- Close proximity to sufficient car parking
- Close proximity to public transport (where relevant)
- Accessible by other patient transport services (including ambulance)
- Priority given to practices located within area of need (e.g. high proportion of vulnerable population) or under serviced area (e.g. not in close proximity to other health services)

#### Infrastructure

- Adequate facilities for hand hygiene (at minimum hand washing facilities in each examination room and access to alcohol based hand rub in all other areas)
- Reliable water and electricity supply
- Access to telephone and computer networks
- Access to patient management system

#### Staffing

- At least one clinician per examination room (nurse or GP); if nurses reviewing patients then at least one GP providing oversight in addition
- At least one clerical/triage staff member

#### Waste disposal

- Facilities to dispose of all waste appropriately in accordance with standard precautions

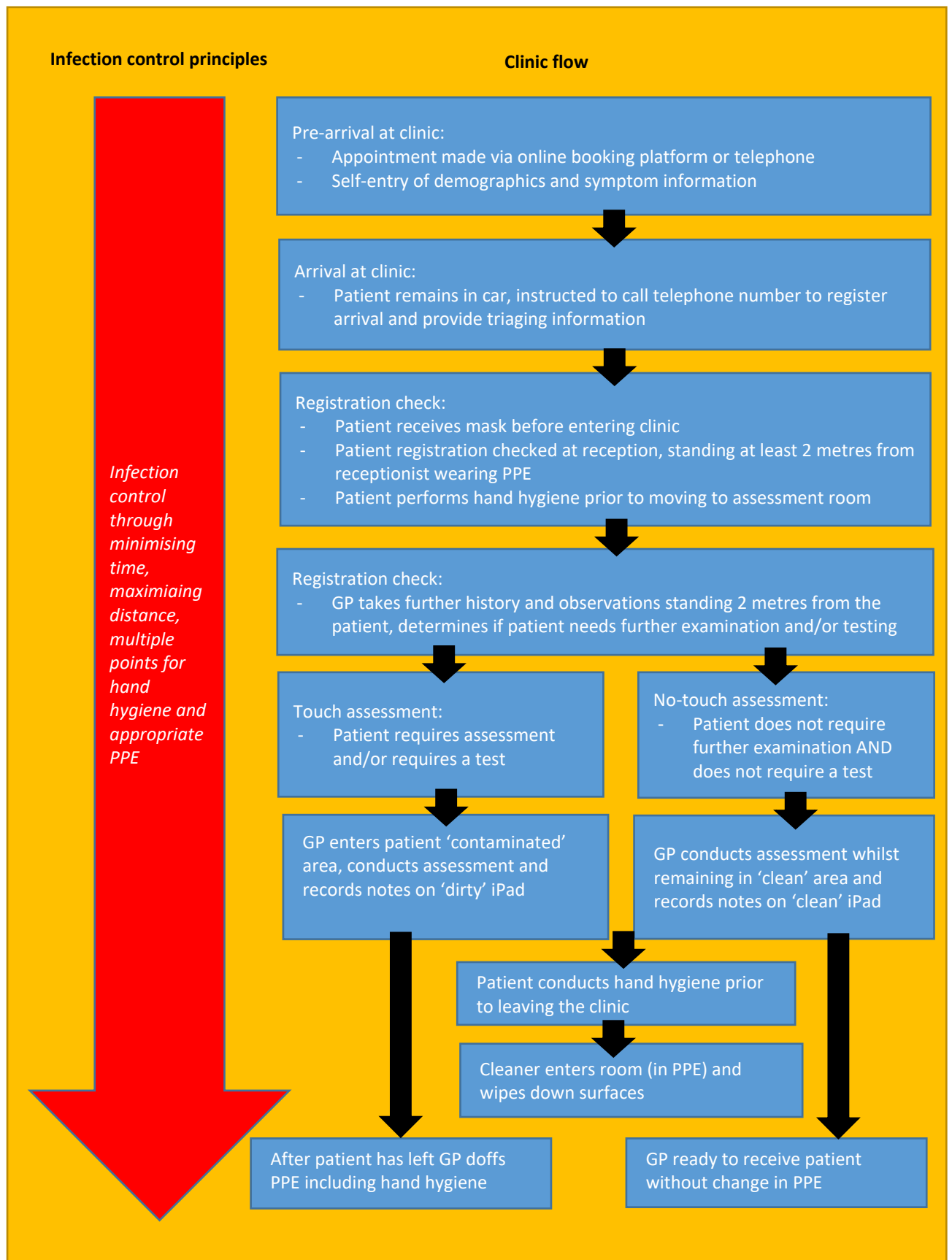
#### Personal protective and other medical equipment

- Sufficient supplies of gloves, gowns and goggles (Dept. of Health will provide masks)
- Adequate supplies of other medical equipment e.g. stethoscopes, examination tables, diagnostic testing equipment

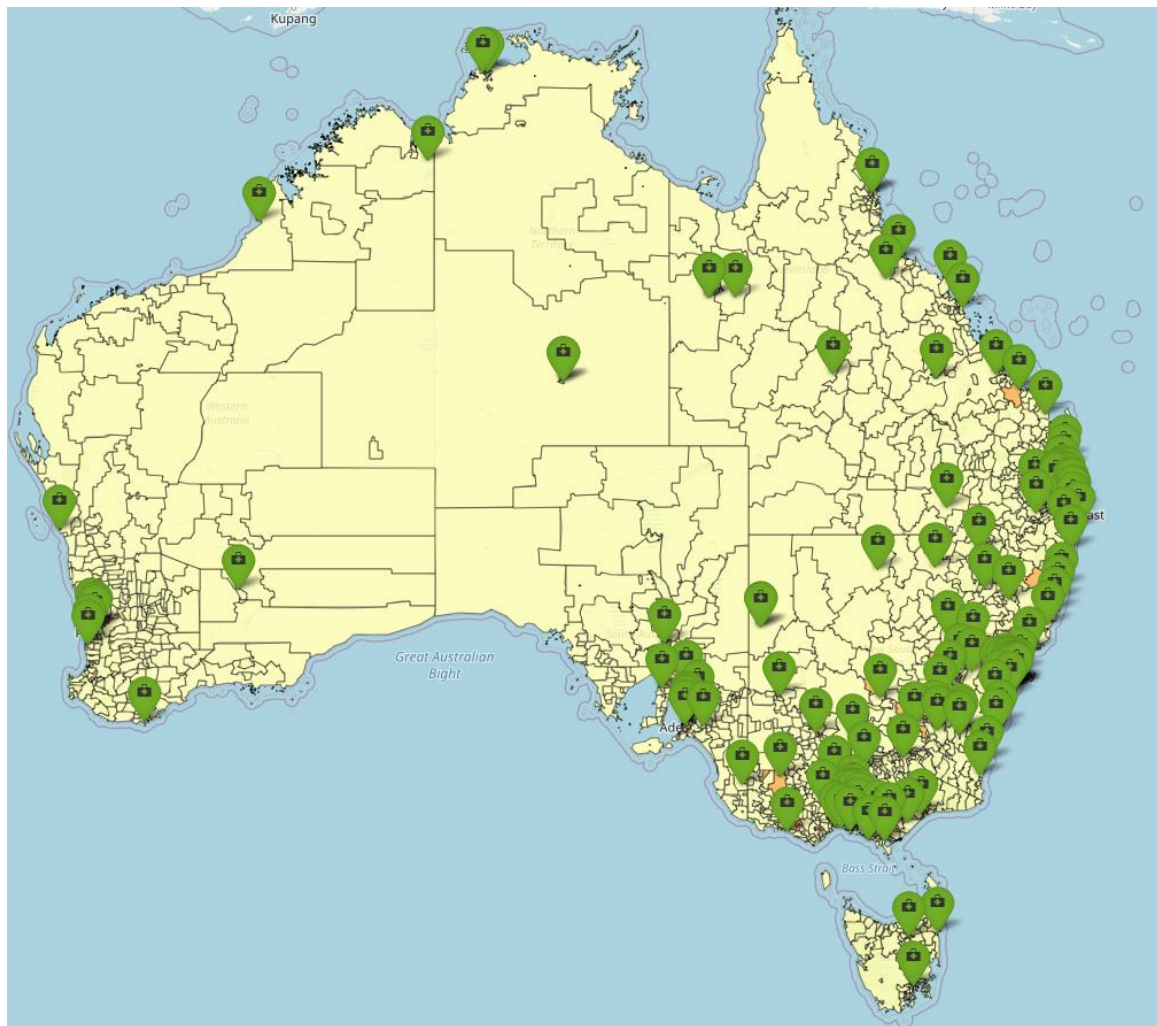
#### Accreditation requirements

- Run by accredited General Practice (or equivalent standard)
- Willingness to comply with compulsory infection control training and external quality assurance procedures

**Figure 1: Patient flow and infection control principles (note that many GP Respiratory Clinics developed their own patient flow models whilst adhering to the stated IPC principles)**



**Figure 2: General Practice Respiratory Clinic locations across Australia**





**Box 2: Responding to local need**

A state funeral for an Aboriginal Elder was occurring in community A, a small town in regional Australia. The community had a GPRC but were concerned about their ability to cope with the demand from the large number of people from out of town who were expected to attend the funeral and stay for several days. In response, the neighbouring community's mobile GPRC van drove to Community A where it operated for the duration of the funeral. Staff from the local PHN assisted with administrative tasks, while Aboriginal Health Workers from the local health district assisted with patient care and community liaison.