# A health service user profile:
Children's Development Team, Darwin and
Community Allied Health Team

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# Executive Summary

The Children's Development Team (CDT) and the Community Allied Health Team (CAHT) are two teams of allied health professionals which are part of Community Allied Health (CAH) & Aged Care Services (ACS) within NT Health. A health service user profile can help clinicians and management to better understand the broader population of service users.

De-identified data for cases were extracted from Community Care Information System (CCIS) within the date range between July 2015 to June 2020, including provider, Indigenous status, birth country, locality of residence, sex, age, preferred language, and 'referral in' reason. A case is defined as a unique individual who is referred to CDT or CAHT. It is possible that an individual is a case on more than one time point.

51% of CDT cases are made up of 0–4-year-old children. The majority of CAHT cases are made up of people aged 0-19 years, closely followed by those aged 65 and over. Males make up nearly two-thirds of CDT cases across all service areas, whereas they represent just over half of CAHT cases. In comparison to the whole of the NT population, Indigenous cases are over-represented in every service area in CAHT and are over-represented in CDT in the Darwin and Palmerston areas. The preferred language for CDT and CAHT cases is English, with other languages preferred in relatively small percentages. 75% of the CAHT cases contained information about preferred language on the CCIS profile. Of these cases, 25.9% preferred to speak an Aboriginal language.

# Introduction

The Children's Development Team (CDT) and the Community Allied Health Team (CAHT) are two teams of allied health professionals which are part of Community Allied Health (CAH) & Aged Care Services (ACS) within NT Health. The teams employ speech pathologists, occupational therapists, physiotherapists as well as therapy assistants and administration staff.

CDT comprises of three teams which provide services to children living in the Darwin urban area. Teams include the Early Years Team (EYT), with approximately 9.6 FTE staffing. EYT provides services to children 0-4 years of age. The School Aged Team (SAT) has approximately 4.6 FTE staffing and provides services to children 5-18 years of age. The Developmental Diagnostic Clinic (DDC) team has approximately 1.8 FTE staffing and provides developmental and diagnostic assessments to children 0-8 years.

CAHT provides services to the adults and children residing in the Darwin remote, East Arnhem remote, and Katherine urban and remote areas. CAHT also provides services to adults in the Darwin urban area, as well as children residing in rural areas classified as the Darwin urban area. CAHT provides services to clients in early childhood (0-6 years of age), of school age (7-18 years), adults, and aged.

Clinicians, management and administrative staff use several databases to record client information. The primary database in which client data is entered is Community Care Information System (CCIS). CCIS holds a range of demographic data about the CAH clientele. This basic health service user profile has been created to help clinicians and management to better understand the broader population of service users.

# Methods

The de-identified data extract was provided by the Top End Health Service Performance Reporting and Decision Support team. Data within the date range between July 2015 to June 2020 was extracted from eight fields within CCIS, namely:

- Provider
- Indigenous Status
- Birth Country
- Locality
- Sex
- Age
- Preferred Language
- 'Referral In' Reason

Each row of data containing these eight fields represented a CCIS case. A case is defined as a unique individual who is referred to CDT or CAHT. It is possible that an individual is a case on more than one time point. Data were then tabulated using the statistical analysis program stata.

Data from the 2016 Census for the Northern Territory were extracted from the Australian Bureau of Statistics 2016 Census QuickStats: https://quickstats.censusdata.abs.gov.au/census_services/getproduct/census/2016/quickstat/7?opendocument.

Postcodes were grouped into the main regions of operation: Darwin, Palmerston, rural and remote areas and the rest of the Top End. Cases that had interstate addresses or that were from Central Australia were coded as 'Other'.

Ethics approval was given by the Menzies Human Research Ethics Committee (HREC Reference Number: 2021-3975).

# Results

## Children's Development Team (CDT)

### AGE AND LOCATION

Across all age groups, most CDT cases live in the Darwin area. This includes the city, surrounding suburbs, and the northern suburbs. This aligns with CDT's primary base being in Casuarina Plaza where there are staff offices, resources storage and seven clinic rooms.

CDT services children of all ages, with a primary focus on the early years. Data from Table 1 shows that approximately 51% of CDT cases are made up of 0–4-year-olds (serviced mostly within the Early Years Team), with remaining cases being aged from 5-18 years (serviced in the School Aged Team). With less than 1% of cases being in the 15-19 year old age group, they make up the smallest age category.

*Table 1: Percent distribution of Children's Development Team cases by age category and region*

|  | Total | Darwin (%) | Palmerston (%) | Rural/remote* (%) | Other** (%) |
|---|---|---|---|---|---|
| **0-4 years** (n=1618) | 51.5 | 47.1 | 28.2 | 18.6 | 6.1 |
| **5-9 years** (n=1215) | 38.7 | 47.0 | 28.8 | 20.6 | 3.6 |
| **10-14 years** (n=273) | 8.7 | 48.0 | 32.2 | 15.0 | 4.8 |
| **15-19 years** (n=34) | 0.1 | 50.0 | 29.4 | 14.7 | 5.9 |
| Total |  | 47.2 | 28.8 | 19.0 | 5.0 |

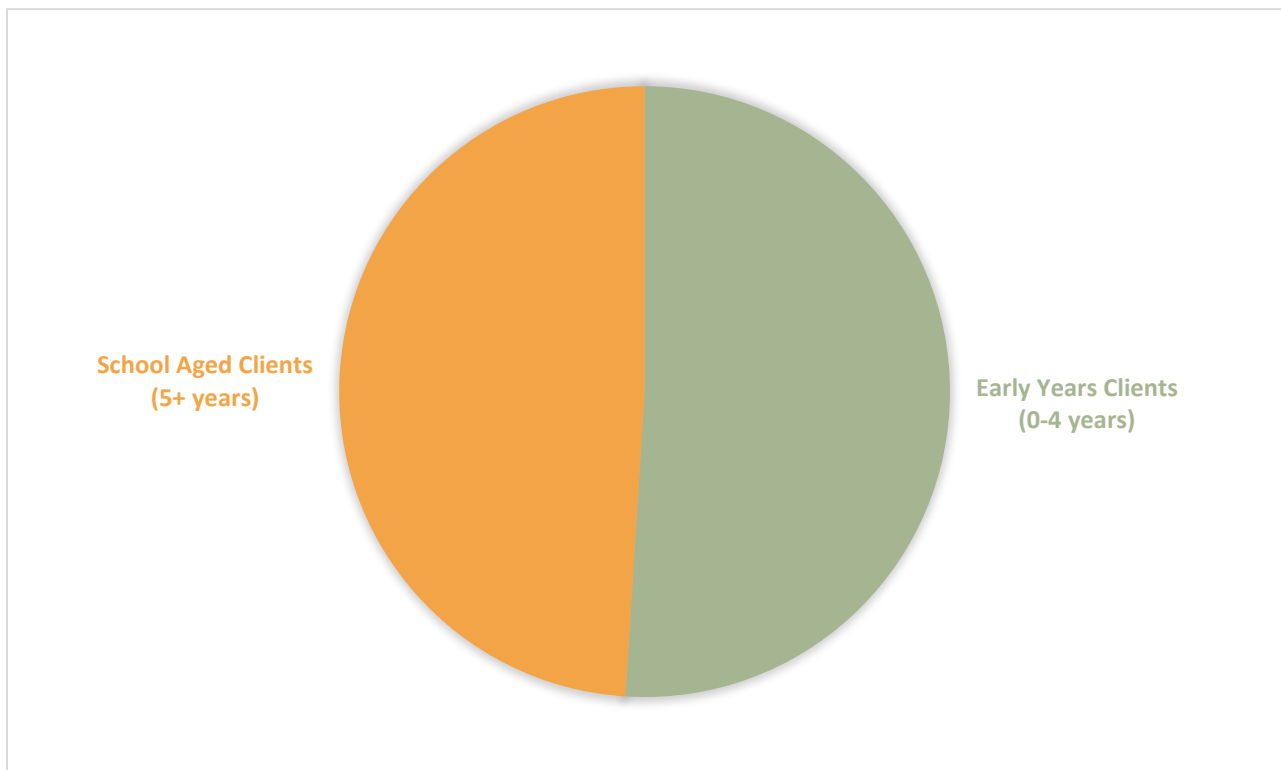*Katherine to outer Palmerston rural areas

**Out of area, interstate



*Figure 1: Percent CDT cases by age*

SEX

Males make up nearly two-thirds of CDT cases across all service areas. The percentage of males is consistent across all service areas.

*Table 2: Percent males by region*

|  | Darwin (% Male) | Palmerston (% Male) | Rural/remote* (% Male) |
|---|---|---|---|
| CDT | 63.6 | 62.8 | 62.4 |

* Katherine to outer Palmerston rural areas

## INDIGENOUS STATUS

According to the Census, Aboriginal and/or Torres Strait Islander people make up less than 10% of Darwin's population. However, 44% of CDT's Darwin cases had Indigenous status. This is similar for Palmerston, with Aboriginal and/or Torres Strait Islander people making up less than 10% of the population but over 30% of Palmerston cases.

*Table 3: Percent distribution of CDT cases by Indigenous status*

|  | Darwin (% Indigenous) | Palmerston (% indigenous) | Rural/remote* (% Indigenous) | Other (% Indigenous) |
|---|---|---|---|---|
| CDT Indigenous cases (n=1,052) | 44.3 | 30.7 | 18.9 | 6.1 |
| NT Census (n=58248) | 9.5 | 8.6 | 52.2 | 29.8 |

* Katherine to outer Palmerston rural areas

## PREFERRED LANGUAGE

The most frequently preferred languages shown in CDT cases were English (88%), followed by Greek, Indonesian, Swahili and Mandarin (see Figure 2). Other languages were listed in small percentages, with approximately 36 languages making up the remaining 10%.
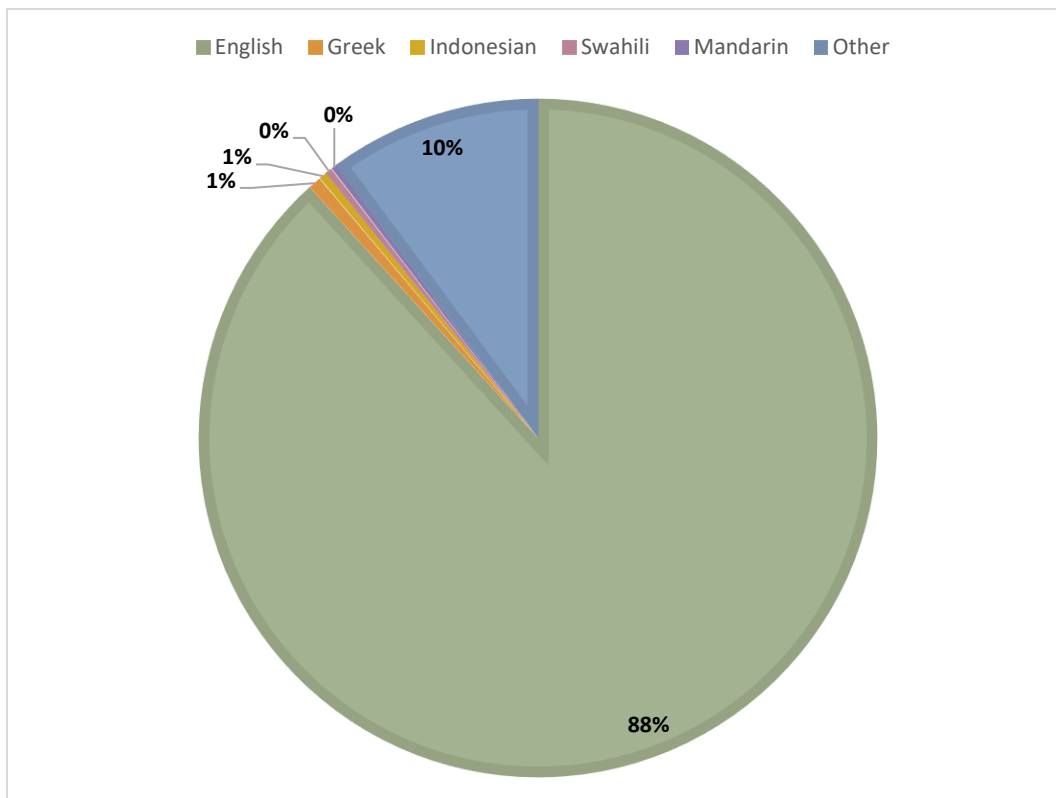


*Figure 2: Preferred languages in CDT cases*

## COUNTRY OF BIRTH

The vast majority of cases have Australia listed as the country of birth, followed by the Philippines, India, New Zealand and Indonesia. Other countries, countries not stated or adequately described, make up the remainder. Although the numbers of cases born outside of Australia are relatively small, there can be implications for service provision with non-Visa holders.
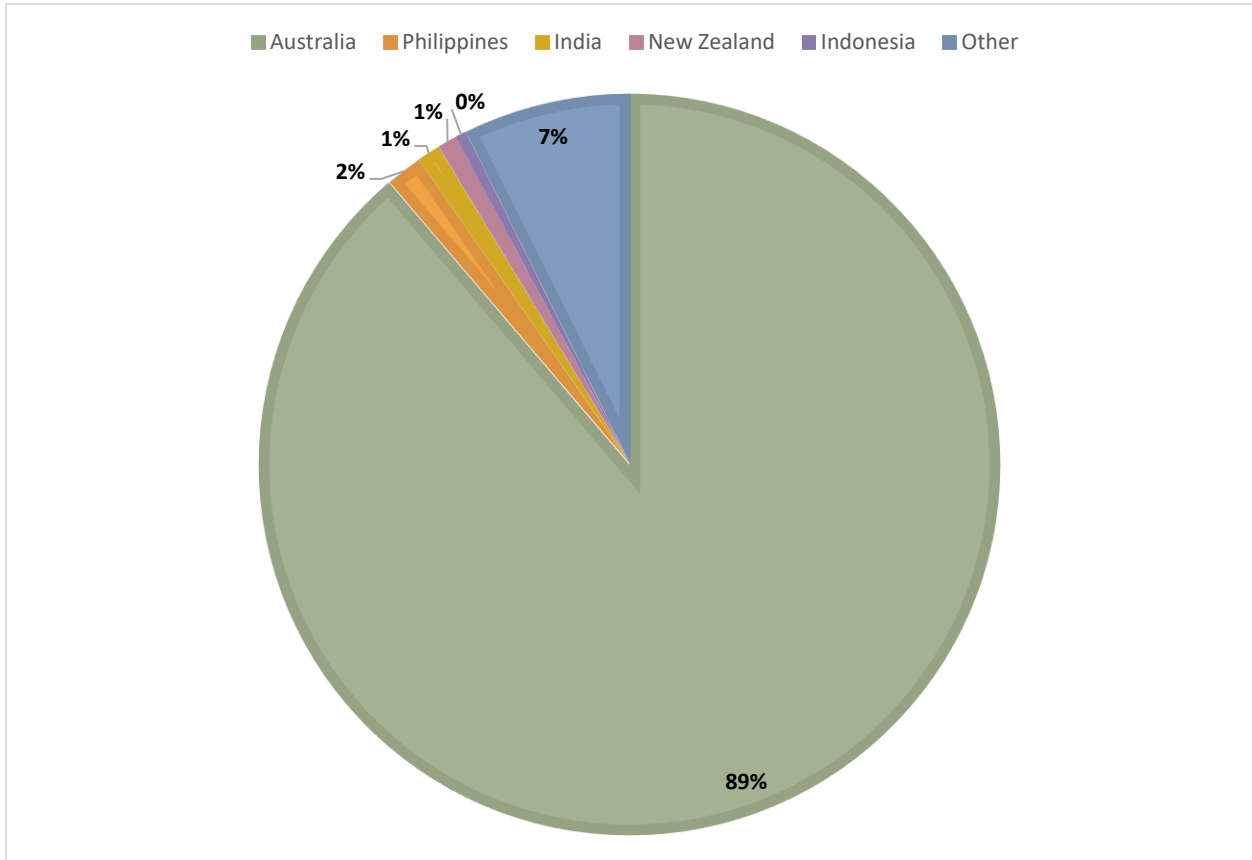


*Figure 3: Most common countries of birth for CDT cases*

## REASON FOR REFERRAL

Reason for referral was not analysed, as CDT cases were typically labelled similarly, for the reason of "Assessment".

## Community Allied Health Team (CAHT)

### AGE AND LOCATION

Across all age groups, most CAHT cases have addresses in remote areas. As shown in Table 4, 10% of cases aged 0-19 years are located in Darwin and Palmerston. Considering CAHT is not allocated paediatric cases who reside in the Darwin urban areas, this may represent cases who have moved from or to a remote area and have not changed their address, or who have changed their address since receiving a CAHT service. This may also reflect children under the care of Territory Families who have moved to Darwin urban areas, and people who are unwell and have had to move from a remote community to the Darwin urban area to seek medical support.

As shown in Table 4, the majority of CAHT cases are aged 0-19 years, closely followed by those aged 65 and over.

*Table 4: Percent distribution of CAHT cases across regions (n=3500)*

| Age category (Years) | Darwin (%) | Palmerston (%) | Rural (%) | Remote (%) | Out of area/ interstate (%) | Total Number (%) |
|---|---|---|---|---|---|---|
| 0-19 | 6.4 | 3.6 | 1.0 | 85.1 | 4.0 | 1030 (29.4) |
| 20-54 | 21.5 | 11.7 | 4.1 | 61.8 | 0.9 | 801 (22.9) |
| 55-64 | 17.6 | 8.6 | 3.2 | 68.5 | 2.0 | 686 (19.6) |
| 65+ | 6.2 | 1.5 | 1.3 | 88.4 | 2.5 | 983 (28.1) |
| Total (N) | 12.0 (420) | 5.9 (205) | 2.2 (78) | 77.4 (2710) | 2.5 (87) | 3500 |

CAHT is divided into four teams which represent four different service areas. Figure 4 indicates the breakdown of cases in each team, showing the service area containing the most cases is the Katherine region.
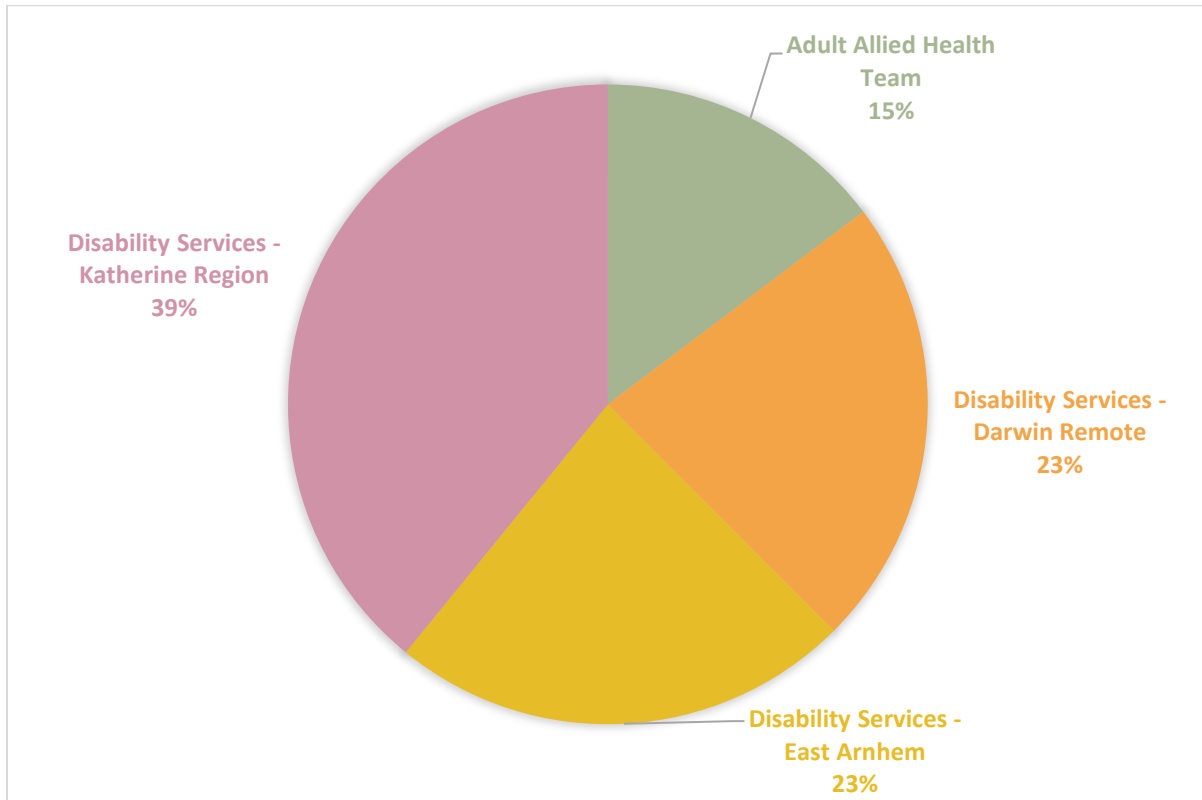


*Figure 4: Distribution of cases by region and service delivery team*

Males outnumber females in all CAHT's service areas, except for cases located in the rural area where females make up slightly more.

*Table 5: Percent males by region (n=3499)*

| Sex * | Darwin (%) | Palmerston (%) | Rural (%) | Remote (%) | Out of area/ interstate (%) | Total Number (%) |
|---|---|---|---|---|---|---|
| Males | 57.6 | 56.1 | 47.4 | 50.2 | 58.6 | 1806 (51.6) |

* Sex of one case could not be determined with data available

## INDIGENOUS STATUS

Aboriginal and/or Torres Strait Islander people are over-represented in CAHT's cases across all service areas. This includes remote areas, whereby according to the census approximately 50% of the population have an Indigenous background. This contrasts with over 80% of remote CAHT cases having an Indigenous background.

*Table 6: Percent distribution of CAHT cases by Indigenous status*

|  | Darwin (%) | Palmerston (%) | Rural (%) | Remote (%) | Out of area/ interstate (%) | Total Number (%) |
|---|---|---|---|---|---|---|
| Indigenous | 39.5 | 44.9 | 42.3 | 81.6 | 67.8 | 2561 (73.2) |
| NT Census (n=58248) | 9.5 | 8.6 | 2.4 | 49.7 | 29.8 | 100 |

## COUNTRY OF BIRTH

Nearly all CAHT cases listed Australia as the country of birth (93.6%), with the next largest group by birthplace being England (1.1%) and New Zealand (1%).

## PREFERRED LANGUAGE

Only 2,656 cases (75% of CAHT cases) provided information on their preferred language. Of these cases, 25.9% had an Aboriginal language listed as the preferred language (see Appendix), and 69.4% listed English. The most frequently preferred Aboriginal languages were Kriol, Tiwi, Walpiri, Dhuwul-Dhuwala, and Kunwinjku.

## REASON FOR REFERRAL

There were many possible reasons for referral, with over half being for assessment of some kind. The top ten reasons for referral are shown in Table 7. All other referral reasons are not listed, as they each made up less than 1% of reasons for referral.

*Table 7: Most common reasons for CAHT case referrals*

| Referral Reason | % |
|---|---|
| Assessment | 51.5 |
| Allied Health Assessment | 15.2 |
| Comprehensive Assessment | 6.5 |
| Eligibility for Disability Equipment Program | 6.8 |
| Eligibility for Home Care Package | 5.4 |
| Care Coordination | 3.9 |
| Review | 3.3 |
| Eligibility for Permanent Residential Care | 1.6 |
| Eligibility for Residential Respite Care | 1.3 |
| Eligibility for Community Aged Care Package | 1.3 |

# Discussion

The data presented represent a robust profile of CDT and CAHT service users over the past five years. It is the first time such information has been compiled into a user-friendly format, to aid service planning for clinicians and managers. It allows comparison of the service user profiles of CDT and CAHT, and the results are likely to be helpful as a resource for orienting new staff become familiar with the CAH client population.

There are some limitations of the data. Firstly, each segment of data provided represents a CCIS case. Future research could extract individual clients (HRNs) to provide more specific demographic information about each client.

Regarding the information provided on preferred languages, only one language can be entered into CCIS. This it does not adequately capture the potentially complex language preferences of culturally and linguistically diverse clients and families. It is not known exactly who entered preferred language data or when, and whether this has changed over time to reflect a person's preferred language as their language

develops. For example, a bilingual child's preferred language may initially be the language spoken by their parents at home. Over time, the child may prefer English as they are exposed to it more during their schooling years. Another example is when a child may be referred to CAH services when they are pre-verbal or non-verbal. The 'preferred language' entered on CCIS may reflect the language of one (or both) parents. With only 75% of CAHT cases having a preferred language listed, it is difficult to accurately ascertain which languages are being spoken by clients and their families.

The age of cases reported is understood to be the age of the client at the time of data extraction, rather than their age at the time of referral. Future research could involve analyses of the ages of presenting cases at time of referral, which would be particularly helpful for paediatric clients. This would enable the CAH teams to better understand whether they are providing early intervention at appropriate times in clients' lives, or whether they can provide targeted education to stakeholders and the community about timely referral.

A limitation of this demographic profile is that it was not able to indicate which CDT clients were allocated to each of the different teams (i.e. Developmental Diagnostic Clinic, Early Years Team, and School-Aged Team). As the data were extracted from a 5-year period, this does not reflect changes in service delivery models over time.

The sex of different cases has been shown as an overall figure for the teams. However, it is not known how many clients of each sex are seen by each discipline. This may be dependent on clients' conditions, for example, stuttering, Autism Spectrum Disorder. Future research could focus on this and whether CAH clients' sex is similar to what is seen in other services.

The reasons for referral for CDT cases were not analysed due to the lack of detailed information. Reasons for referral for CAHT cases were more specific but lacked information as to what the referrer wanted from the referral, or what allied health discipline they wished for the client to access. Future research could include the random selection of a subset of clients, analysed further to indicate their reason for referral (speech pathology, occupational therapy and/or physiotherapy), as well as what services they received.

This research highlights the opportunities presented to CDT and CAHT when recording client information on the new digital health system Acacia, which is due to fully roll out over the next few years. If clinicians, management, and administrative staff enter more specific information such as reasons for referral and languages spoken at home, this can provide more meaningful data to enable service planning.

Overall, this service profile is a simple overview of client characteristics that provide data for planning and resource allocation, and potentially useful in future grant applications.

*Appendix 1: Preferred languages listed on CAHT cases*

| Preferred Language | % |
| --- | --- |
| Aboriginal - Alyawarr (Alyawarra) | 0.2 |
| Aboriginal – Anindilyakwa | 0.6 |
| Aboriginal - Bardi | <0.1 |
| Aboriginal - Burarra | 1.1 |
| Aborigina - Dhalwangu | <0.1 |
| Aboriginal - Dhuwul-Dhuwala | 1.8 |
| Aboriginal - Djinang | <0.1 |
| Aboriginal - Karrwa (Garawa, Garrwa) | <0.1 |
| Aboriginal - Kaytetye (Kaititj) | <0.1 |
| Aboriginal - Kriol | 8 |
| Aboriginal - Kunwinjku (Gunwinggu) | 1.5 |
| Aboriginal - Kuurinji (Gurindji) | 1 |
| Aboriginal - Maung | 0.4 |
| Aboriginal - Murrinh-Patha | 0.8 |
| Aboriginal - Mutputta (Mudburra) | <0.1 |
| Aboriginal – Ngangkikurungurr | <0.1 |
| Aboriginal - Nunggubuyu | <0.1 |
| Aboriginal- Pitjantjatjara | <0.1 |
| Aboriginal - Rembarrnga | <0.1 |
| Aboriginal - Tiwi | 3.2 |
| Aboriginal - Warlpiri | 2.4 |
| Aboriginal - Yanyuwa (Anula) | <0.1 |
| Arabic (including Lebanese) | <0.1 |
| Australian Indigenous Language | 4.3 |
| English | 69.4 |
| French | <0.1 |
| German | <0.1 |
| Greek | <0.1 |
| Inadequately Described | <0.1 |
| Indonesian | <0.1 |
| Non-verbal | <0.1 |
| Non-verbal (sign languages) | 0.1 |
| Not stated | 3.3 |
| Other | 0.8 |
| Filipino | <0.1 |