

6 Follow-up: hospital services

6.1 Introduction

Chapters 4 and 5 of this report presented information from Audiology and Dental data collections on follow-up activities with audiology and dental services for children who had had a Child Health Check (CHC). Besides these data, the AIHW has been working closely with the NT DHF to find out what other follow-up services may have been provided to these children through NT hospitals. To do so, the AIHW and the NT DHF worked collaboratively to link children who had CHCs with NT DHF databases on follow-up services, using the hospital registration number (HRN). These follow-up data sets include the following:

- Northern Territory hospital inpatient data (hospitalisation)
- Northern Territory hospital outpatient data

This data linkage allowed the AIHW to see what follow-up services had been provided by DHF hospital services to children whose health conditions were identified during their health check and had referrals that were either directly or indirectly made at CHCs.

This chapter reports on the key findings based on the data obtained from the linkage process. The hospital services reported in this chapter include the services provided up to 30 June 2009 only.

6.2 Method of data linkage and data limitations

This section provides a brief description of how this data was linked as well as an overview of the limitations of this linkage.

6.2.1 Method of data linkage

In order to link the CHC and NT DHF data warehouse data sets, valid and unique HRNs are required in both collections. To ensure the HRNs used for data linkage were accurate, all records for CHCs performed up to 30 June 2009 that were in the AIHW CHC database as at 15 September 2009 were validated HRN against the DHF data warehouse using date of birth, sex and community IDs. Once the NT DHF had verified the accuracy of the AIHW database, a repaired CHC data set was sent to the NT DHF to be linked to their hospital data. The data linkage was performed from 30 September to 1 October 2009.

The results of the data linkage were provided to the AIHW from the NT DHF as either individual records (i.e. unit record data) or as totals for various categories listed in NT DHF's records (i.e. aggregate data), depending on whether or not the child was referred for follow-up services from their CHC. That is, it was agreed that unit record data regarding NT hospital inpatients and outpatients would only be provided by the NT DHF for those children who were referred for at least one service following their CHC (regardless of the type of service), because this was the process through which consent for the sharing of such information was obtained. For those children who had not been referred for any services at

the time of their CHC, but had nonetheless received follow-up services, only aggregated NT hospital data were provided.

6.2.2 Limitations

There are several limitations to the data presented in this chapter that should be taken into account when interpreting the information provided.

The data obtained from the data linkage process only included the hospital services that can be identified as CHC-related follow-up in the NT DHF hospital data set. The NT DHF believes that the follow-up services received as part of CHCs may not have been appropriately recorded in the NT DHF hospital data set, and therefore the data provided to the AIHW may reflect a subset of the hospital services that NT DHF provided to these children.

The final issue to consider relates to the fact that certain types of services, such as mental health and social worker services, are of a sensitive nature and access to such information is restricted. Follow-up information on these services is therefore not included in these analyses.

Given these limitations, it is likely that the findings presented in this chapter understate the number of children who had received health services and the number of health services provided to children as part of their health checks.

6.3 Hospital services received by children with a referral from CHC

This section presents the number and type of follow-up hospital services provided to children who were referred for at least one type of follow-up service at the time of their first CHC.

It must be noted that unit record data on any number of follow-up hospital services received by that child are presented as long as that child had at least one referral at their first CHC. However, the type of service for which the child was referred does not necessarily correspond to the type of hospital services they received. This is because these services were most likely provided as a result of a secondary referral given to the child when they attended the referral they were given at their CHC.

Table 6.1 shows that 1,526 (24%) children who had a referral at their CHC received 3,485 hospital services between 10 July 2007 and 30 June 2009. Of these, 326 children were hospitalised at least once. The most common causes of hospitalisation were ear disease, diseases of the oral cavity, salivary gland and jaws, and respiratory diseases.

In addition, 1,433 children received health services in hospital outpatient clinics, which mainly consisted of visits to paediatricians, physicians and ENT specialists at these outpatient clinics (Table 6.1).

Table 6.1: Number of follow-up services received by type of service, Indigenous children who had a NTER Child Health Check and were referred for follow-up services

Type of service	Number of children who received services		Number of services received
	Number	Percent	
Hospitalisation			
Ear disease	191	3.0	191
Diseases of the oral cavity, salivary glands and jaws	146	2.3	146
Respiratory disease	6	0.1	6
Other diseases	9	0.1	9
<i>Subtotal for hospitalisation</i>	<i>326^(a)</i>	<i>5.1</i>	<i>352</i>
Outpatient clinics			
Paediatrician	348	5.5	727
Internal medicine	332	5.2	500
ENT	316	5.0	559
Surgeon	173	2.7	225
Orthopaedic	124	2.0	241
Optometrist or ophthalmologist	67	1.1	122
Allied health services	37	0.6	113
Other specialists	19	0.3	43
Unknown	517	8.1	629
<i>Subtotal for outpatient services</i>	<i>1,433^(a)</i>	<i>22.6</i>	<i>3,159</i>
Total number of children who received hospital services	1,526^(a)	24.0	3,485
Total number of children who had at least one referral	6,353	100.0	..

.. Not applicable

(a) Because a child can receive multiple hospital services, these totals do not reflect the sum of all above services.

Source: AIHW analysis of NTER CHCI Child Health Check data and NT DHF linked data for services on or before 30 June 2009.

6.4 Other follow-up services received by children without a referral from CHC

About 30% of children who had a CHC did not receive any referral. Some of these children have had a referral in place or was on a waiting list before the CHC. Therefore, they were not received same referral from Child Health Check teams. In addition, some of these children did not receive a referral although such conditions were identified at their CHC, because their conditions were only deemed necessary for which further treatment or follow-up at a later date.

Because these children did not receive a referral at their CHC, consent for AIHW to receive unit record data on their follow-up services was not obtained. The data reported in this section are the aggregated data that were provided directly by the NT DHF to the AIHW.

There were 986 hospital services that were provided to 774 children who had a CHC, but did not have a referral from the CHC (Table 6.2). These included 111 episodes of hospital care and 875 health services in outpatient clinics. The most common causes of hospitalisation for these children without a referral were ear disease and diseases of the oral cavity, salivary glands and jaws. As with the children with referrals, they were also more likely to visit paediatricians, physicians and ENT specialists in these outpatient clinics (Table 6.2).

Table 6.2: Number of follow-up services received by type of service, Indigenous children who had a NTER Child Health Check and were not referred for follow-up services

Type of service	Number of children who received services		Number of services received
	Number	Percent	
Hospitalisation			
Ear disease	60	2.0	60
Diseases of the oral cavity, salivary glands and jaws	43	1.4	43
Other diseases	8	0.3	8
<i>Subtotal for hospitalisation</i>	<i>106^(a)</i>	<i>3.5</i>	<i>111</i>
Outpatient clinics			
Paediatrician	142	4.7	349
Internal medicine	130	4.3	156
ENT	128	4.3	201
Surgeon	86	2.9	110
Orthopaedic	67	2.2	140
Optometrist or ophthalmologist	28	0.9	45
Allied health services	9	0.3	29
Other specialist	5	0.2	10
Unknown	265	8.8	340
<i>Subtotal for outpatient services</i>	<i>668^(a)</i>	<i>22.3</i>	<i>875</i>
Total number of children who received hospital services	774^(a)	25.8	986
Total number of children who had no referral at CHC	3,000	100	..

.. Not applicable

(a) Because a child can receive multiple types of hospital services, these totals do not add up to the sum of numbers above them.

Source: AIHW analysis of NTER CHCI Child Health Check data and NT DHF linked data for services on or before 30 June 2009.

6.5 Summary

Linking the NTER CHCI database and the NT DHF's hospital database revealed that:

- Overall, 1,526 (24%) children who were given referrals during their CHCs received follow-up services in hospitals. Of these, about 5% were hospitalised and 23% visited medical professionals at outpatient clinics.
- Of the children who were not referred for follow-up services during their CHC, 774 (26%) received follow-up services in hospitals. Of these, about 4% were hospitalised and 26% visited medical professionals at outpatient clinics.
- Ear disease was the most common cause of hospitalisation, and ENT specialists were the most commonly visited specialists by children who had a CHC, regardless of whether they were referred for follow-up services or not. This finding is consistent with the high prevalence of ear disease in children who had CHCs.