

## 2.2

# Health Status and Health Services Utilization

The observations in this section are based on:

- a review of Medical Services Plan data (Tables 1 and 3), and Aboriginal comparison (Table 2)
- a review of PharmaNet data (Tables 4 and 6) and Aboriginal comparison (Table 5)
- a review of hospital data (Tables 7 and 9) and Aboriginal comparison (Table 8)
- major themes arising across the data sets.

In order to identify the most common diagnoses for children, and where health care usage differs the most between children in continuing care and the general population, we looked at both the percentage of individual children diagnosed and the average volume of health services used in three areas: medical practitioner visits (Tables 1 and 2), prescriptions dispensed (Tables 3 and 4) and hospital admissions (Tables 5 and 6).

The numbers in Tables 1, 2, 4, 5, 7, and 8 represent the cumulative percentage of children under the age of 19 accessing health services between 1995 and 2005. The cumulative percentages would change by shortening or extending the time period, but they provide an indication of the major categories of health conditions that affect children.

Tables 3, 6, and 9 provide a picture of how much service the populations used between 1995 and 2005. Tables 2, 5 and 8 contrast Aboriginal and non-Aboriginal children in continuing care.

The most meaningful statistic in each of the tables is the difference ratio between children in continuing care and in the general population, which shows where the two populations are similar and where they differ.

Children in continuing care received services for the same kinds of conditions as children who had never been in care. Overall, however, more children in continuing care used more health care services more often than children not in care.

Patterns of health care service use were similar for Aboriginal children in continuing care and non-Aboriginal children in continuing care in most instances – with some notable exceptions, such as use of services related to perinatal conditions and pregnancy.

### Notes about the health services utilization data

The data and observations in this section are for children under the age of 19 who were in the continuing care of the Ministry of Children and Family Development for all or part of the period 1997–2005 and for children under the age of 19 in the general population during this same period. (For more information on how these numbers were calculated, see Appendix A.) However, the health records analyzed were for services received during the period 1995–2005.

In the report, when we refer to children in continuing care receiving health care services, these services could have been received before, while or after the children were in care, anytime between 1997 and 2005.

The data are presented in tables and figures.

All data in the tables and figures in section 2.2 are for children under age 19 and for the period 1995–2005, unless otherwise noted.

In addition, to avoid the effect of any age discrepancies between the populations of children in continuing care and children who have never been in care, the data in the tables in section 2.2 as well as Figures 10, 13, 16, 26, 33, 37 and 38 have been age-standardized. As well, statistical testing was done to identify those differences between the two populations that are unlikely to be due to chance.

Discrepancies in numbers between tables comparing Aboriginal and non-Aboriginal children in continuing care and tables comparing children in continuing care with the general population are due to the Aboriginal tables being age-adjusted to the Aboriginal population and the tables contrasting children in continuing care with the general population being age-adjusted to children in continuing care.

In presenting the data, we have used the International Classification of Disease Revision 9 (ICD9), an international system of disease classification used by both the Medical Services Plan and hospitals.

For the PharmaNet data, we have used the American Hospital Formulary Standard (AHFS). Because the AHFS has such a large number of medication classes, we decided to consider all AHFS therapeutic class level IIs where at least 7% of children were affected. The therapeutic class level II was selected because it provides a level of detail similar to the ICD9 chapter classifications for Medical Services Plan and hospital data; the 7% cutoff was selected because below 7% the numbers of children affected are very small.

## Medical Services Plan (MSP) data

### *Children in continuing care and children in the general population*

Table 1 gives the percentages of children who were diagnosed by a medical practitioner for broad categories of conditions.

The most common conditions for which both children in continuing care and children in the general population were diagnosed by a medical practitioner at least once were:

- general symptoms and ill-defined conditions (e.g., where more specific diagnoses are not made)
- respiratory conditions (e.g., infections, colds, sore throats and bronchitis)
- the nervous system and sense organs (e.g., near/short-sightedness, earaches, pink eye)
- injuries (e.g., sprains, strains and wounds)
- skin conditions (e.g., patchy skin colour, eczema, infections), and
- infectious and parasitic diseases (e.g., intestinal infections, chicken pox, strep throat and viruses).

However, children in continuing care were diagnosed for these conditions 1.2 to 1.4 times more often than were children in the general population.

Table 1 also shows that while mental disorders (e.g., conduct disorder, ADHD, depression, anxiety) were not a common diagnosis for children in the general population, they were experienced by approximately 65% of children in continuing care. This was approximately four times greater than for children who have never been in care.

Although fewer children were diagnosed with the remaining conditions, children in continuing care were diagnosed more frequently and at a greater rate than children who had never been in care in the following circumstances:

- Children in continuing care were more than 1.5 times more likely to be diagnosed with endocrine system conditions (e.g., diabetes, obesity), circulatory system conditions (e.g., hypertension, irregular heartbeat) and congenital anomalies (e.g., heart, musculoskeletal and limbs) than were children who had never been in care.
- Children in continuing care themselves experienced perinatal health conditions (i.e., during gestation and during the first week after birth) more than 3.7 times as frequently as children who had never been in care.

Children in continuing care and children in the general population experienced the same common health conditions. However, children in continuing care were diagnosed for these conditions in greater numbers.

***While mental disorders are not a common diagnosis for children in the general population, they are experienced by approximately 65% of children in continuing care.***

- Young women in continuing care became pregnant at a rate more than four times that of young women who had never been in care.

In general, with the exception of neoplasms (cancer), children in continuing care were 1.2 to 4.1 times as likely to be diagnosed with a medical condition than were children who had never been in care.

**Table 1: Children who have ever received services, by ICD9 chapter**

ICD9 chapter and description	Females general population	Females continuing care	Difference ratio	Males general population	Males continuing care	Difference ratio
1. Infectious and parasitic diseases	43%	62%	1.4*	41%	51%	1.3*
2. Neoplasms	8%	9%	1.1*	7%	7%	1.0
3. Endocrine system	6%	10%	1.7*	5%	8%	1.5*
4. Blood disorders	4%	6%	1.5*	3%	4%	1.2*
5. Mental disorders	17%	63%	3.8*	17%	67%	3.9*
6. Nervous system and sense organs	68%	87%	1.3*	66%	82%	1.2*
7. Circulatory system	5%	9%	1.8*	5%	8%	1.7*
8. Respiratory system	70%	89%	1.3*	69%	84%	1.2*
9. Digestive System	25%	37%	1.5*	24%	33%	1.4*
10. Genitourinary system	31%	55%	1.7*	14%	17%	1.3*
11. Pregnancy/birth	4%	17%	4.1*	N/A	N/A	N/A
12. Skin	51%	64%	1.2*	48%	59%	1.2*
13. Musculoskeletal system	33%	47%	1.4*	33%	42%	1.3*
14. Congenital anomalies	5%	9%	1.7*	6%	10%	1.8*
15. Perinatal period	3%	13%	4.1*	3%	11%	3.4*
16. Symptoms & signs	73%	95%	1.3*	72%	92%	1.3*
17. Injury and poisoning	51%	73%	1.4*	58%	78%	1.4*

\* Statistically significant at the 95% confidence level.

### ***Aboriginal children and non-Aboriginal children in continuing care***

Table 2 compares the percentages of Aboriginal children and non-Aboriginal children in continuing care as diagnosed by a medical practitioner by category of condition and disease.

In general, Aboriginal children in continuing care were diagnosed for health conditions in a pattern similar to non-Aboriginal children. This similarity mirrors

our mortality findings, which showed similar rates for Aboriginal children and non-Aboriginal children in care (see 2.3 Mortality).

Notable exceptions to the similarity in diagnoses were:

- blood disorders (e.g., anemias)
- services required during the perinatal period, and
- pregnancy and childbirth.

For these conditions, Aboriginal children in continuing care were diagnosed about 30% more often than were non-Aboriginal children in continuing care.

There are also a number of areas where Aboriginal children were diagnosed about 10% less frequently than non-Aboriginal children were, including neoplasms (cancers), endocrine system conditions, and congenital anomalies.

**Table 2: Children in continuing care who have ever received services, by ICD9 chapter, by Aboriginal status and gender**

ICD9 chapter and description	Females Aboriginal	Females non- Aboriginal	Difference ratio	Males Aboriginal	Males non- Aboriginal	Difference ratio
1. Infectious and parasitic diseases	62%	65%	1.0	55%	55%	1.0
2. Neoplasms	8%	9%	0.9	6%	7%	0.9
3. Endocrine system	9%	10%	0.9	7%	9%	0.7*
4. Blood disorders	7%	5%	1.3*	4%	4%	1.2
5. Mental disorders	63%	63%	1.0	68%	69%	1.0
6. Nervous system and sense organs	91%	86%	1.1*	86%	84%	1.0*
7. Circulatory System	10%	8%	1.2	8%	8%	1.1
8. Respiratory system	91%	89%	1.0*	86%	86%	1.0
9. Digestive system	39%	35%	1.1*	35%	35%	1.0
10. Genitourinary system	49%	48%	1.0	17%	19%	0.9*
11. Pregnancy/birth	15%	12%	1.3*	N/A	N/A	N/A
12. Skin	65%	63%	1.0	60%	59%	1.0
13. Musculoskeletal system	43%	43%	1.0	39%	40%	1.0
14. Congenital anomalies	9%	10%	0.9	10%	12%	0.9
15. Perinatal period	16%	12%	1.4*	15%	12%	1.2*
16. Symptoms & signs	95%	95%	1.0	93%	93%	1.0
17. Injury and poisoning	75%	71%	1.0*	79%	77%	1.0

\* Statistically significant at the 95% confidence level.

## Services

Not only were children in continuing care more likely to be diagnosed with a health condition in general, they also required more services to address that condition.

Table 3 shows the average number of services per patient and the difference in service use between children in continuing care and children who had never been in care.

Children in continuing care required 1.3 to 2.7 times more services for conditions related to the endocrine system, perinatal period, congenital anomalies, mental disorders, general symptoms and ill-defined conditions, and genitourinary systems (e.g., menstruation disorders, urinary tract disorders, bladder infections, genital organ disorders) and for females, pregnancy and birth-related conditions.

**Table 3: Average number of services per patient, by ICD9 Chapter**

ICD9 chapter and description	Females general population	Females continuing care	Difference ratio	Males general population	Males continuing care	Difference ratio
1. Infectious and parasitic diseases	3.0	3.1	1.0*	3.0	3.1	1.0*
2. Neoplasms	2.7	2.5	0.9*	2.8	2.6	0.9*
3. Endocrine system	3.2	4.0	1.3*	3.1	4.8	1.6*
4. Blood disorders	2.0	2.4	1.2*	2.3	2.9	1.3*
5. Mental disorders	5.1	11.9	2.3*	5.8	15.4	2.7*
6. Nervous system and sense organs	5.4	6.7	1.3*	5.6	6.7	1.2*
7. Circulatory system	1.8	2.3	1.3*	1.9	2.2	1.2*
8. Respiratory system	7.6	8.5	1.1*	8.2	8.0	1.0*
9. Digestive system	2.6	3.3	1.2*	2.7	3.4	1.3*
10. Genitourinary system	3.2	5.4	1.7*	2.5	2.3	0.9*
11. Pregnancy/birth	3.3	5.5	1.7*	N/A	N/A	N/A
12. Skin	3.7	3.3	0.9*	3.7	3.2	0.9*
13. Musculoskeletal system	6.8	6.2	0.9*	5.2	4.5	0.9*
14. Congenital anomalies	3.7	6.8	1.9*	3.9	6.6	1.7*
15. Perinatal period	3.5	5.8	1.7*	3.5	7.1	2.0*
16. Symptoms & signs	7.4	11.2	1.5*	7.3	9.9	1.4*
17. Injury And poisoning	5.2	6.0	1.1*	5.8	6.5	1.1*

\* Statistically significant at the 95% confidence level.

## PharmaNet data

A common outcome of seeing a medical practitioner is being prescribed medication. Table 4 shows the percentage of children in continuing care and in the general population who had at least one prescription dispensed during the period 1995–2005.

The four most commonly prescribed medication classes for all children, as shown in Table 4, were:

- antibiotics
- anti-infectives (topical antibiotics, topical anti-fungals and topical anti-virals)
- anti-inflammatory medications, and
- analgesics and antipyretics.

In these four classes, 1.3 to 1.9 times more children in continuing care were prescribed these medications than were children in the general population.

Table 4 also shows that children in continuing care were prescribed mental health–related drugs at a much higher rate than were children who had never been in care. Children in continuing care were prescribed respiratory and cerebral stimulants (Ritalin-type medications) at a rate 8.5 to 12 times higher than children who had never been in care, and psychotherapeutic agents (anti-depressants, tranquilizers and anti-psychotics) at a rate 5.5 to 8 times higher. Anxiolytic, sedative and hypnotic medications (anxiety, tension and neurosis medications) were prescribed at a rate 2.5 times that of the general population, and unclassified therapeutic agents more than 1.5 times the general population rate. Analgesic and antipyretic medications (pain relievers) were also prescribed at a rate 1.8 times as often.

In addition, Table 4 and Figure 32 show that birth-control medications (contraceptives and progestins) were prescribed for females in continuing care at rates two to seven times higher than for females who had never been in care.

The PharmaNet data show a pattern similar to the MSP data: children in continuing care were prescribed more medications much more frequently and for longer periods of time than were children who had never been in care.

***Birth-control medications (contraceptives and progestins) were prescribed for females in continuing care at rates two to seven times higher than for females who had never been in care.***

Although they affected fewer children generally, anti-anemia drugs (iron), antiemetics (used to control vomiting) and miscellaneous gastrointestinal drugs (heartburn and ulcerative colitis–type medications) were prescribed for children in continuing care at rates 2.4 to 7 times greater than for children who had never been in care.

**Table 4: Children having at least one prescription dispensed**

AHFS Therapeutic Class Level II	Females general population	Females continuing care	Difference ratio	Males general population	Males continuing care	Difference ratio
08:12 Antibiotics	71%	92%	1.3*	71%	89%	1.3*
08:40 Misc. anti-infectives	24%	42%	1.7*	17%	23%	1.3*
12:12 Adrenergic agents	17%	31%	1.9*	19%	30%	1.5*
20:04 Antianemia drugs	1%	7%	7.0*	1%	3%	5.1*
28:08 Analgesics & antipyretics	25%	48%	1.9*	23%	40%	1.7*
28:16 Psychotherapeutic agents	5%	29%	5.5*	4%	31%	8.1*
28:20 Respiratory & cerebral stimulants	1%	14%	12.1*	4%	33%	8.5*
28:24 Anxiolytics sedatives & hypnotics	7%	19%	2.7*	6%	14%	2.4*
48:08 Antitussives	12%	14%	1.2*	11%	11%	1.0
52:04 Anti-infectives	23%	35%	1.5*	22%	30%	1.3*
52:08 Anti-inflammatory agents	11%	19%	1.6*	13%	18%	1.4*
56:22 Antiemetics	2%	9%	4.5*	1%	3%	2.8*
56:40 Misc. gastrointestinal drugs	5%	12%	2.6*	3%	7%	2.4*
68:04 Adrenals	15%	24%	1.6*	16%	24%	1.5*
68:12 Contraceptives	15%	32%	2.1*	N/A	N/A	N/A
68:32 Progestins	3%	24%	7.2*	N/A	N/A	N/A
84:04 Anti-infectives	23%	51%	2.3*	20%	41%	2.0*
84:06 Anti-inflammatory agents	30%	46%	1.5*	27%	37%	1.4*
92:00 Unclassified therapeutic agents	4%	7%	1.8*	4%	6%	1.5*
92:99 Cmps/Corr/Invest**	17%	26%	1.5*	14%	21%	1.4*

\* Statistically significant at the 95% confidence level.

\*\* Compounds/Corrections Use/Investigational Drugs.

As shown in Table 5, dispensing patterns for Aboriginal children in continuing care resembled those for non-Aboriginal children in care, with a few notable exceptions: Aboriginal children were prescribed antiemetics almost 2.5 times more often than non-Aboriginal children were, and antitussive medications (cough suppressants) were prescribed for Aboriginal children 1.7 times more often than for non-Aboriginal children. In addition, iron supplements were prescribed more than twice as often for Aboriginal children as they were for non-Aboriginal children.

**Table 5: Children in continuing care by Aboriginal status having at least one prescription dispensed**

AHFS Therapeutic Class Level II	Females Aboriginal	Females non-Aboriginal	Difference ratio	Males Aboriginal	Males non-Aboriginal	Difference ratio
08:12 Antibiotics	93%	91%	1.0*	91%	89%	1.0*
08:40 Misc. anti-infectives	41%	40%	1.0	24%	26%	0.9
12:12 Adrenergic agents	31%	31%	1.0	31%	33%	1.0
20:04 Antianemia drugs	10%	4%	2.7*	5%	3%	1.8*
28:08 Analgesics & antipyretics	49%	36%	1.4*	42%	31%	1.4*
28:16 Psychotherapeutic agents	24%	28%	0.9*	27%	33%	0.8*
28:20 Respiratory & cerebral stimulants	14%	16%	0.9	32%	36%	0.9*
28:24 Anxiolytics sedatives & hypnotics	16%	18%	0.9*	13%	15%	0.9
48:08 Antitussives	18%	11%	1.6*	16%	9%	1.8*
52:04 Anti-Infectives	40%	35%	1.1*	35%	31%	1.1
52:08 Anti-inflammatory agents	19%	18%	1.0	18%	19%	0.9
56.22 Antiemetics	12%	5%	2.1*	5%	2%	2.8*
56:40 Misc. gastrointestinal drugs	10%	10%	1.0	7%	7%	0.9
68:04 Adrenals	23%	23%	1.0	25%	26%	1.0
68:12 Contraceptives	25%	27%	0.9	N/A	N/A	N/A
68:32 Progestins	23%	19%	1.3*	N/A	N/A	N/A
84:04 Anti-infectives	58%	46%	1.3*	47%	38%	1.2*
84:06 Anti-inflammatory agents	49%	44%	1.1*	40%	39%	1.0
92:00 Unclassified therapeutic agents	8%	6%	1.3*	8%	6%	1.4*
92:99 Cmps/Corr/Invest**	26%	28%	0.9	24%	21%	1.1

\* Statistically significant at the 95% confidence level.

\*\* Compounds/Corrections Use/Investigational Drugs.

*Children in continuing care were prescribed mental health-related drugs at a much higher rate than were children who had never been in care. Children in continuing care were prescribed Ritalin-type medications at a rate 8.5 to 12 times higher than children who had never been in care, and anti-depressants, tranquilizers and anti-psychotics at a rate 5.5 to 8 times higher.*

**Table 6: Number of days' supply prescribed per patient**

AHFS Therapeutic Class Level II	Females general population	Females continuing care	Difference ratio	Males general population	Males continuing care	Difference ratio
08:12 Antibiotics	60	73	1.2*	64	71	1.1*
08:40 Misc. anti-infectives	26	30	1.2*	29	43	1.5*
12:12 Adrenergic agents	107	134	1.3*	125	163	1.3*
20:04 Antianemia drugs	93	111	1.2*	86	104	1.2*
28:08 Analgesics & antipyretics	23	39	1.7*	17	24	1.4*
28:16 Psychotherapeutic agents	295	564	1.9*	388	882	2.3*
28:20 Respiratory & cerebral stimulants	540	1006	1.9*	704	1262	1.8*
28:24 Anxiolytics sedatives & hypnotics	41	112	2.7*	44	169	3.8*
48:08 Antitussives	22	18	0.8*	24	17	0.7*
52:04 Anti-infectives	14	17	1.2*	15	17	1.1*
52:08 Anti-inflammatory agents	45	46	1.0*	55	52	0.9*
56:22 Antiemetics	29	41	1.4*	31	98	3.2*
56:40 Misc. gastrointestinal drugs	68	136	2.0*	80	220	2.7*
68:04 Adrenals	90	143	1.6*	117	172	1.5*
68:12 Contraceptives	315	314	1.0	N/A	N/A	N/A
68:32 Progestins	240	321	1.3*	N/A	N/A	N/A
84:04 Anti-infectives	30	33	1.1*	28	30	1.1*
84:06 Anti-inflammatory agents	57	55	1.0*	61	58	0.9*
92:00 Unclassified therapeutic agents	124	181	1.5*	153	314	2.0*
92:99 Cmps/Corr/Invest**	54	63	1.2*	52	75	1.4*

\* Statistically significant at the 95% confidence level.

\*\* Compounds/Corrections Use/Investigational Drugs.

In addition to medications being prescribed more often for children in continuing care, medications were also prescribed for longer periods. Table 6 shows the average number of days' supply for prescribed medications.

While children in continuing care were prescribed mental health drugs (psychotherapeutics, cerebral stimulants and anxiolytics) at rates 2.4 to 12 times higher than children never having been in care, they were also prescribed these drugs for periods 1.8 to 3.8 times as long. This could suggest that children in continuing care have more severe mental health issues than children who have not been in care, or that children in continuing care are treated differently from children who have not been in care – for example, with greater reliance on drug therapies than on psychotherapies.

Miscellaneous gastrointestinal drugs were prescribed for more than twice as long for children in continuing care as for patients who had never been in care, and analgesics/antipyretic, adrenals and unclassified therapeutic agents were prescribed for more than 1.5 times as long.

## Hospital data

Children in continuing care were admitted to hospital mostly for the same reasons as children who had never been in care, but more frequently and in general for longer periods of time.

As shown in Table 7, the three most common reasons for admission to hospital shared by all children were digestive conditions, respiratory conditions, and injuries and poisonings, although children in continuing care were admitted at rates almost 2 to 3.5 times greater than the rate for children in the general population.

For children in continuing care, mental health disorders were the second most common reason for admission, at a rate almost 15 to 19 times greater than for children who had never been in care. For females in continuing care, the most common reason for a hospital admission was for a pregnancy or childbirth–related issue, at a rate five times greater than for females in the general population.

Hospital admissions for digestive system conditions were primarily related to dental diseases, disorders and anomalies, and to a much lesser extent appendicitis. Respiratory-related admissions were primarily for children under the age of three, and were for tonsils and adenoids, bronchitis, asthma and pneumonia.

Many fewer children were admitted to hospital than saw a medical practitioner to deal with their health conditions. Acute hospital care is required for more serious health issues where treatment and observation require the patient to be admitted.

The most common injuries and poisonings requiring children in continuing care to be hospitalized were fractures, poisonings by analgesics and antipyretics, and poisonings by psychotropic agents (mood-altering drugs). The most common reason for hospital admission in the general population was also for fractures; however, poisonings were far less common in the general population. Mental disorders requiring hospitalization included adjustment reaction (psychological reaction to profound change in a person's life), affective psychoses (e.g., bi-polar disorder) and neurotic disorders (e.g., anxieties and phobias). Children who had never been in care were also admitted to hospital for the same kinds of reasons as children in continuing care, although less frequently.

Children in continuing care were also hospitalized, although less frequently, for infectious and parasitic diseases (e.g., intestinal infections and viral infections), nervous system and sense organs conditions (e.g., ear tubes, ear infections, crossed eyes and epilepsy), circulatory system conditions (e.g., irregular heartbeat), and congenital anomalies (e.g., anomalies of the genitals, digestive tract, face and cleft palate); during the perinatal period (e.g., disorders due to low birth weight, respiratory conditions, and jaundice); and for signs, symptoms and ill-defined conditions – but at rates 1.8 to 3.4 times greater than for children who had never been in care.

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*For females in continuing care, the most common reason for a hospital admission was for a pregnancy or childbirth-related issue, at a rate five times greater than for females in the general population.*

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**Table 7: Children who have ever been hospitalized, by ICD9 chapter**

Hospital admission by ICD9 chapter and description	Females general population	Females continuing care	Difference ratio	Males general population	Males continuing care	Difference ratio
1. Infectious and parasitic diseases	1.0%	2.3%	2.4*	1.0%	1.9%	1.9*
2. Neoplasms	0.5%	0.7%	1.4*	0.4%	0.4%	1.0
3. Endocrine system	0.3%	0.5%	1.7*	0.3%	0.7%	2.4*
4. Blood disorders	0.2%	0.2%	1.1	0.2%	0.3%	1.4
5. Mental disorders	0.7%	10.8%	14.7*	0.6%	10.8%	19.3*
6. Nervous system and sense organs	1.7%	5.3%	3.1*	2.3%	5.5%	2.4*
7. Circulatory system	0.1%	0.3%	1.9	0.2%	0.4%	2.1*
8. Respiratory system	4.1%	8.4%	2.0*	4.8%	9.0%	1.9*
9. Digestive system	4.7%	10.2%	2.2*	5.3%	11.1%	2.1*
10. Genitourinary system	1.2%	3.7%	3.0*	1.8%	2.1%	1.1
11. Pregnancy/birth	2.7%	13.4%	5.0*	N/A	N/A	N/A
12. Skin	0.4%	0.7%	1.8*	0.5%	0.9%	1.9*
13. Musculoskeletal system	1.0%	1.6%	1.6*	1.0%	1.6%	1.6*
14. Congenital anomalies	0.8%	1.5%	1.8*	1.3%	2.8%	2.1*
15. Perinatal period	0.5%	1.7%	3.4*	0.6%	1.5%	2.4*
16. Symptoms and signs	1.3%	4.3%	3.3*	1.2%	3.5%	2.8*
17. Injury and poisoning	2.6%	9.0%	3.4*	4.5%	9.5%	2.1*

\* Statistically significant at the 95% confidence level.

Aboriginal children in continuing care were admitted to hospital for the same reasons as non-Aboriginal children in continuing care, including digestive system issues, respiratory system, mental health disorders, injuries and poisoning, and for females, pregnancy and childbirth–related issues.

Aboriginal children in continuing care were admitted to hospital at 1.3 times the rate of non-Aboriginal children for digestive system issues (teeth), and Aboriginal females were admitted to hospital at a rate 1.4 times greater than non-Aboriginal females were for pregnancy and childbirth–related issues.

As shown in Table 9, when children in continuing care were admitted to hospital, they were admitted on average for longer periods of time than were children who had not been in care.

**Table 8: Children in continuing care by Aboriginal status who have ever been hospitalized, by ICD9 chapter**

Hospital admission by ICD9 chapter and description	Females Aboriginal	Females non-Aboriginal	Difference ratio	Males Aboriginal	Males non-Aboriginal	Difference ratio
1. Infectious and parasitic diseases	2.1%	2.6%	0.8	2.3%	1.9%	1.2
2. Neoplasms	0.8%	0.6%	1.3	0.3%	0.5%	0.7
3. Endocrine system	0.6%	0.4%	1.6	0.7%	0.7%	1.0
4. Blood disorders	0.2%	0.2%	1.4	0.3%	0.3%	1.1
5. Mental disorders	9.5%	9.8%	1.0	7.6%	11.7%	0.7
6. Nervous system and sense organs	6.3%	6.0%	1.0	5.9%	7.0%	0.8
7. Circulatory system	0.2%	0.3%	0.8	0.5%	0.4%	1.5
8. Respiratory system	9.5%	8.6%	1.1	11.2%	9.8%	1.1*
9. Digestive system	11.8%	8.4%	1.4*	13.0%	10.7%	1.2*
10. Genitourinary system	2.7%	3.8%	0.7*	1.6%	2.6%	0.6
11. Pregnancy/birth	11.9%	8.6%	1.4*	N/A	N/A	N/A
12. skin	0.7%	0.7%	1.0	0.9%	0.9%	1.0
13. Musculoskeletal system	1.4%	1.6%	0.9	1.2%	1.8%	0.7
14. Congenital anomalies	1.8%	1.6%	1.1	2.7%	3.8%	0.7
15. Perinatal period	2.0%	1.4%	1.4	2.1%	1.7%	1.2
16. Symptoms and signs	3.9%	4.7%	0.8	3.1%	4.2%	0.7
17. Injury and poisoning	9.4%	8.0%	1.2	9.9%	8.6%	1.2*

\* Statistically significant at the 95% confidence level.

When admitted for a congenital anomaly, children in continuing care remained in hospital more than twice as long as children who had never been in care and more than twice as long with respect to perinatal health conditions.

In terms of the most common reasons children in continuing care were admitted to hospital, they remained in hospital almost twice as long for respiratory issues as children who had never been in care, 1.5 times as long for injuries and poisonings, and 1.4 times as long for males with respect to digestive system issues. Females remained in hospital 1.7 times longer than females who had never been in care did for pregnancy and childbirth–related issues.

However, with respect to mental health disorders, children in continuing care were admitted on average for shorter periods of time than were children who had never been in care – 30% shorter for females and 20% shorter for males.

**Table 9: Average number of hospital days per case, by ICD9 chapter**

Hospital admission by ICD9 chapter and description	Females general population	Females continuing care	Difference ratio	Males general population	Males continuing care	Difference ratio
1. Infectious and parasitic diseases	2.6	3.9	1.5*	2.7	4.3	1.6*
2. Neoplasms	2.9	5.5	1.9*	3.6	2.0	0.5*
3. Endocrine system	5.5	3.7	0.7*	5.1	5.1	1.0*
4. Blood disorders	4.0	4.3	1.1*	3.8	3.9	1.0*
5. Mental disorders	10.8	7.9	0.7*	12.2	10.2	0.8*
6. Nervous system and sense organs	0.8	1.3	1.6*	0.7	1.3	1.9*
7. Circulatory system	3.8	6.6	1.7*	3.7	5.4	1.4*
8. Respiratory system	1.7	3.1	1.9*	1.8	3.5	1.9*
9. Digestive system	1.0	1.0	1.0*	0.9	1.3	1.4*
10. Genitourinary system	1.9	3.6	1.9*	0.9	1.4	1.5*
11. Pregnancy/birth	1.1	1.8	1.7*	N/A	N/A	N/A
12. Skin	1.7	2.4	1.4*	2.0	2.9	1.5*
13. Musculoskeletal system	1.5	3.2	2.1*	1.6	2.5	1.6*
14. Congenital anomalies	2.4	5.4	2.3*	1.8	4.4	2.5*
15. Perinatal period	8.0	15.5	1.9*	7.7	18.5	2.4*
16. Symptoms and signs	1.9	4.2	2.2*	1.9	2.9	1.6*
17. Injury and poisoning	2.2	3.3	1.5*	2.1	3.0	1.4*

\* Statistically significant at the 95% confidence level.

## Themes arising across the data sets

A number of themes arise across the data sets shown in Tables 1 through 9. While each of the ICD9 chapter headings could become the basis for a separate report, the intention here is to comment on a number of health issues either that affect the majority of children and youth in care or where the differences in health care utilization between children in care and the general population are large.

These themes include:

- perinatal health and congenital anomalies
- respiratory conditions
- injuries and poisonings
- mental health disorders, and
- pregnancy and childbirth–related issues.

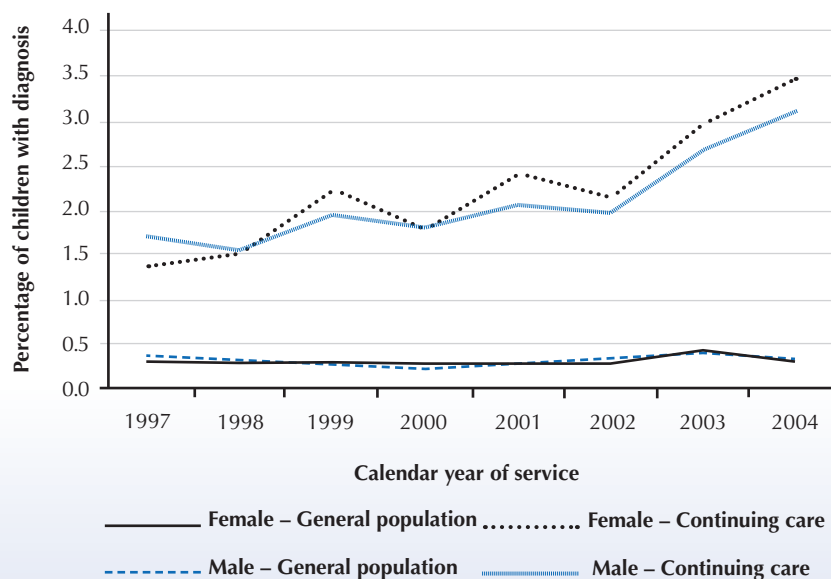
### *Perinatal health and congenital anomalies*

As shown in Tables 1, 3, 7 and 9, children in continuing care as a group were more vulnerable in terms of their health – right from birth – than were children in the general population. An average of 12% of children in continuing care had been diagnosed with health concerns during the perinatal period (during the later stages of gestation and up to the first week after birth), as compared with 3% of children in the general population.

The most common perinatal diagnoses were related to the fetus or newborn being affected by maternal conditions (including hypertension, renal and urinary tract diseases, and infections), other

## Figure 10

**Children with perinatal conditions by care status (ICD9 codes 740-759)**



# Figure 11

## Children who saw an MSP-paid medical practitioner for a congenital anomaly (ICD9 Chapter 14)

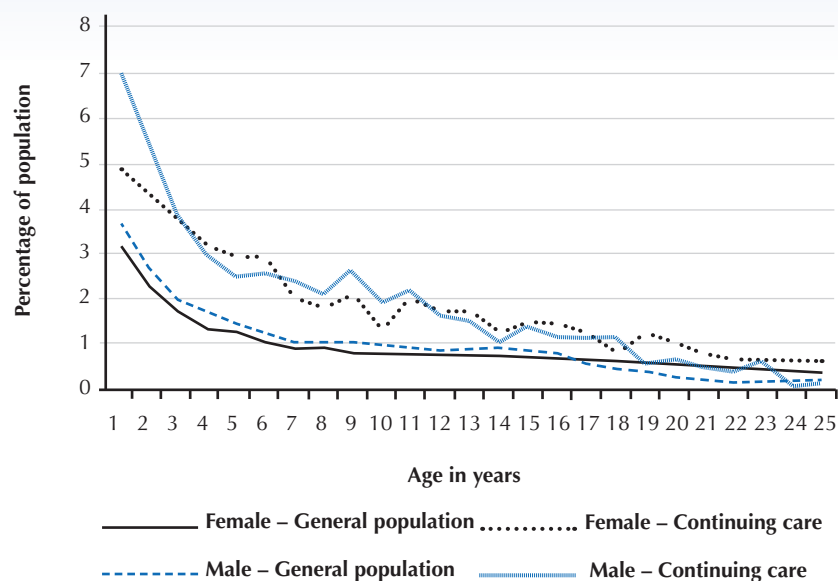
and ill-defined conditions (e.g., convulsions, central nervous system dysfunction, feeding problems and drug withdrawal syndrome), respiratory distress, and disorders relating to low birth weight.

Perinatal health was one of the areas where Aboriginal children in continuing care were more vulnerable than non-Aboriginal children in continuing care (Tables 2 and 8), with 16% of Aboriginal children having been diagnosed with perinatal health conditions (compared with 12% of non-Aboriginal).

Between 1997 and 2004, the rate of children in continuing care diagnosed with a perinatal condition more than doubled – from around 1.5% to 3% – while the rate in the general population remained constant at 0.3% (Figure 10). This might suggest that more children with compromised health are coming into care, which has implications for both services for children and challenges for caregivers.

The most common congenital anomalies for children in continuing care were the same anomalies affecting the general population of children: heart anomalies, musculoskeletal deformities (e.g., deformities of the skull, spine, and feet, and bowed legs), and anomalies in the limbs. Between 1995 and 2005, 10% of males and 9% of females in continuing care had been diagnosed with congenital anomalies (see Table 1). Overall, children in continuing care were diagnosed with a congenital anomaly 1.7 times more often than children in the general population were.

Figure 11 shows that the highest percentages of children seeing a medical practitioner for a congenital anomaly occurred during the first year of life. About 7% of males and 5% of females in continuing care were seen for a congenital anomaly, compared with about 4% of males and 3.5% of females



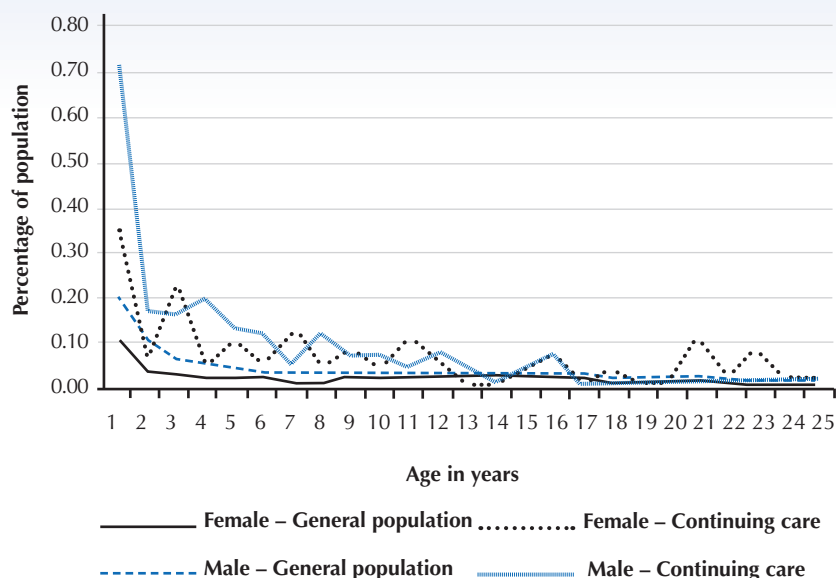
in the general population. By age three, the figure dropped to around 3% for children in continuing care and less than 2% for the general population. As a group, Aboriginal children in continuing care were diagnosed with congenital anomalies about 10% less often than were non-Aboriginal children in continuing care.

Hospitalization rates for congenital anomalies affected a minority of children, with around 20% of children identified with congenital anomalies requiring hospitalization. The highest rate of hospitalization occurred within the first year of life for all children as shown in Figure 12. However, children in continuing care were hospitalized at a rate almost twice that of children who had never been in care (see Table 7).

The most common reasons for hospitalization for congenital anomalies were different from the most common congenital anomaly-related diagnoses by a medical practitioner, and included cleft palate and anomalies of the genital organs, upper digestive tract,

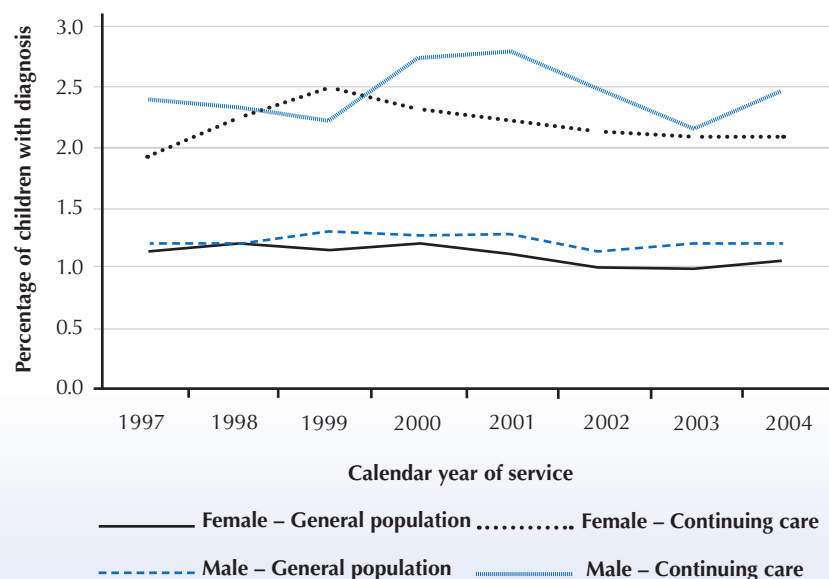
**Figure 12**

### Children hospitalized for a congenital anomaly-related issue (ICD9 Chapter 14)



**Figure 13**

### MSP-recorded congenital anomaly diagnosis trends (ICD9 codes 740-759)



ear, face and neck. Hospitalizations were highest within the first two years of life, although children in continuing care continued to be hospitalized throughout their lives at a higher rate than children who had never been in care – possibly suggesting more chronic conditions.

Between 1997 and 2004, the overall rate of children with congenital anomalies remained relatively stable, with children in continuing care being diagnosed at a rate about twice that of children who had never been in care, as shown in Figure 13. (The greater fluctuation in the figures for children in continuing care was likely a result of the relatively small number of children in continuing care with congenital anomalies.)

### Respiratory conditions

Respiratory conditions were the most commonly identified reason why children visited a medical practitioner. The most common respiratory conditions were upper respiratory infections, colds, sore throats, bronchitis, tonsillitis and asthma.

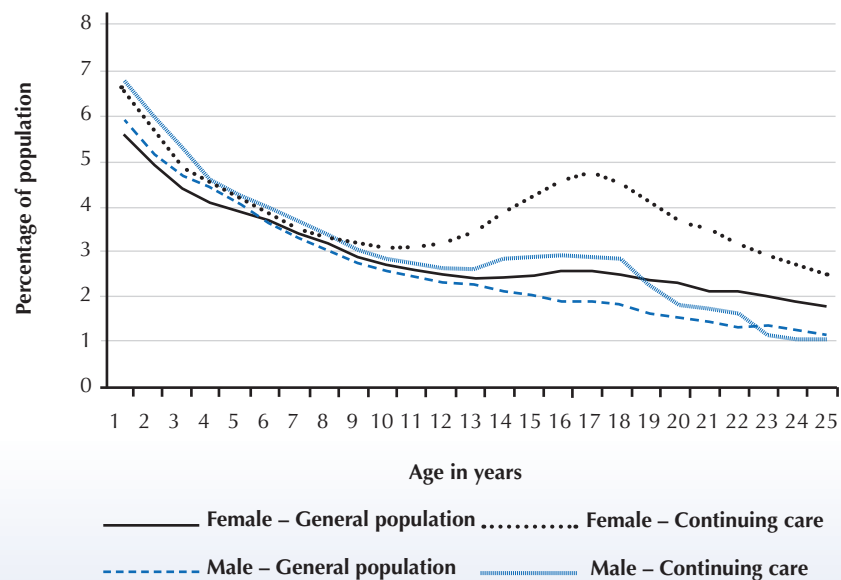
More than 85% of children in continuing care saw a medical practitioner at least once because of a respiratory issue before turning 19, compared with about 70% of children who had never been in care.

Figure 14 shows how respiratory conditions affected children by age. The rate at which children were diagnosed with respiratory conditions dropped steadily for all children from 60% to 70% at birth to around 30% at about age 10. Female children in continuing care then saw a considerable increase in respiratory conditions until age 17, where rates peaked near 50%, while respiratory

Respiratory conditions in children are related to multiple causes, including low birth weight, viruses, bacteria, molds and fungi, and outdoor and indoor air pollution, including second-hand smoke and particulate matter from fireplaces.

**Figure 14**

**Children who saw an MSP-paid medical practitioner for a respiratory condition (ICD9 Chapter 8)**



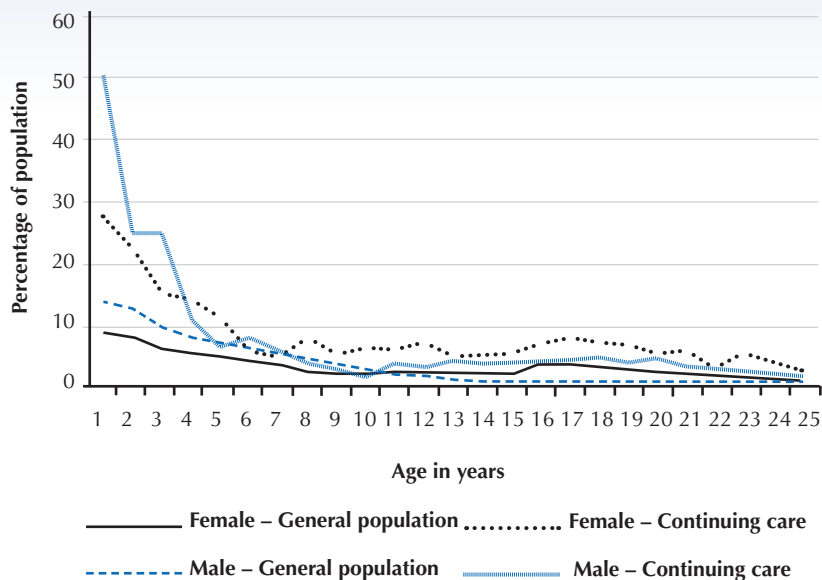
condition rates for other children either continued to decline or remained steady.

Respiratory conditions continued to decline after age 19, although the rate for females formerly in continuing care remained much higher than for the rest of the population. After age 19, females in the general population saw a medical practitioner for respiratory issues more often than did males who were formerly in continuing care.

The highest rate of hospitalization for a respiratory condition occurred early in life. As shown in Figure 15, the rate at one year of age was 5% for males and 2.7% for females in continuing care, compared with 1.4% for males and 0.8% for females in the general population. By age six, hospitalizations fell to below 1% in all groups, although those in continuing care continued to have rates higher than for the general population. The higher rates of hospitalization among

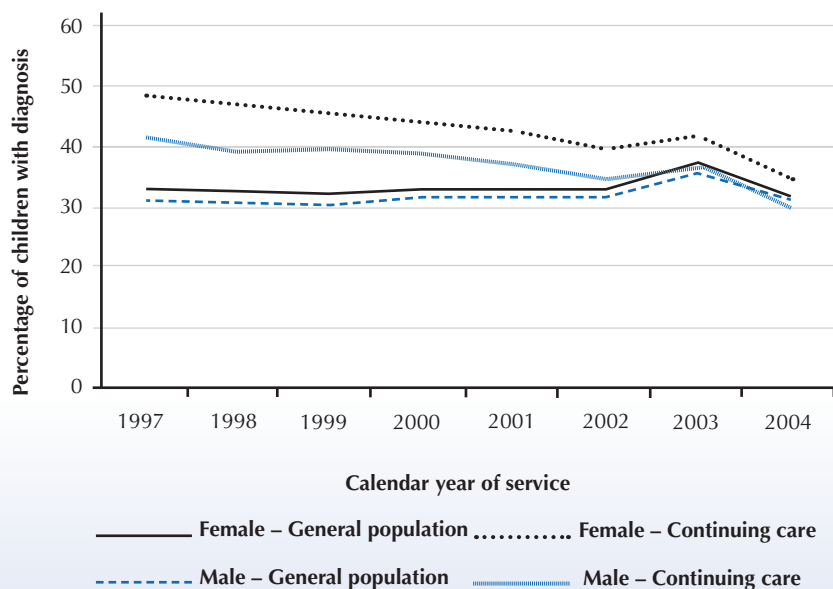
**Figure 15**

### Children hospitalized for a respiratory condition (ICD9 Chapter 8)



**Figure 16**

### MSP-recorded respiratory diagnosis trends (ICD9 codes 460-519)



very young children in continuing care may be related to perinatal health conditions, which often involve the respiratory system.

Over time, respiratory conditions among children in continuing care appear to be improving, with outcomes similar to those in the general population by 2004 (Figure 16). (The increased frequency of respiratory diagnoses in 2003 may have been because of an influenza virus serotype that was noted by the Ministry of Health for causing more serious illness in children.)

As shown in Figure 17, infectious and parasitic disorders (e.g., viruses, food poisoning, strep throat, chickenpox) followed a pattern similar to respiratory disorders.

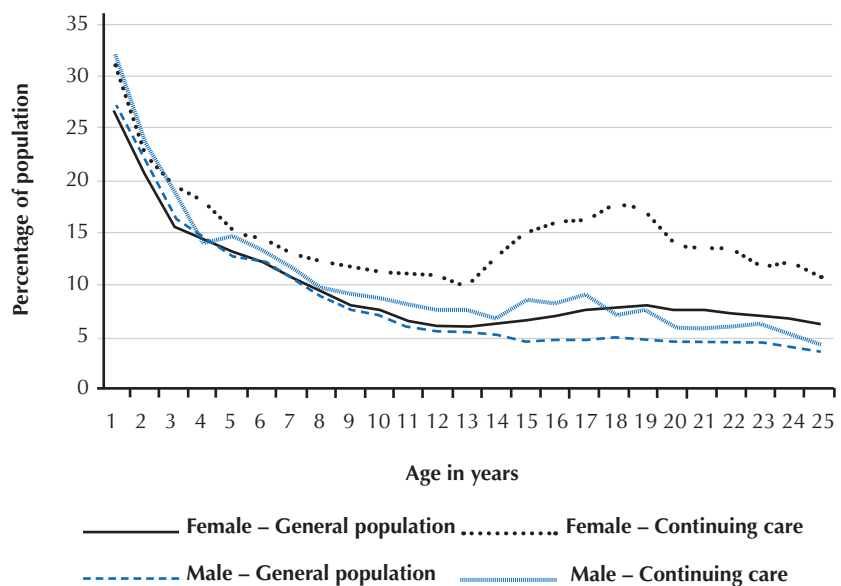
About 27% of children in the general population and 32% of children in continuing care saw a medical practitioner in the first year of life for infectious and parasitic disorders, with rates subsequently declining to 5% at age 13 for the

general population and 7–10% for children in continuing care. For females in continuing care, the rate began to increase steadily again at age 13, up to 18% at age 18. There was also an increase for females in the general population at this age, but far less dramatic, with the rate reaching about 8% at age 19.

Cumulatively, around 1% of children who had never been in care and 2% of children in continuing care were hospitalized for infectious and parasitic disorders at some point between 1995 and 2005, which was about one quarter the rate for respiratory conditions.

**Figure 17**

### Children who saw an MSP-paid medical practitioner for an infectious/parasitic condition (ICD9 Chapter 1)



We do not know why teenage females in continuing care were diagnosed with markedly higher rates of respiratory and infectious or parasitic conditions than males in continuing care were. This may represent a previously unreported susceptibility to these conditions in females, or it may represent miscoding.

The prescribing of antibiotics also followed a pattern similar to respiratory and parasitic and infectious conditions, although antibiotics are obviously prescribed for other conditions as well.

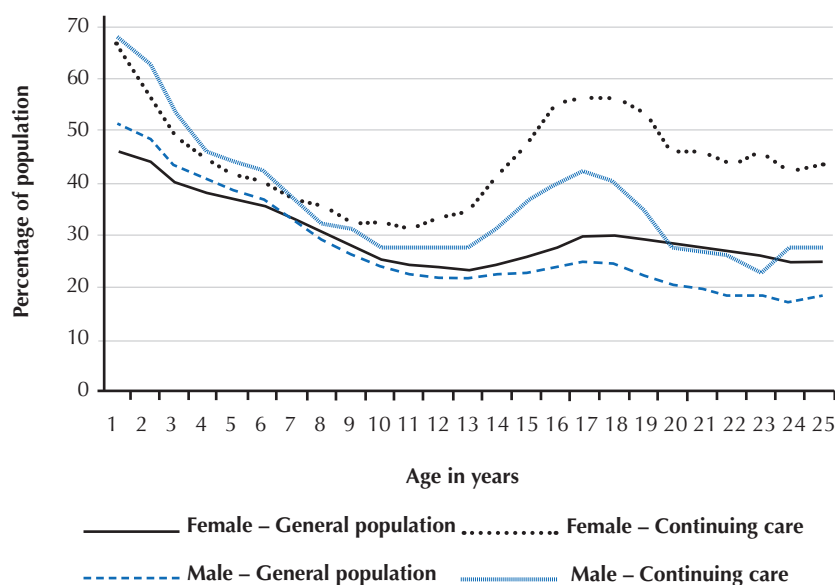
Figure 18 shows that children in continuing care were prescribed more antibiotics than the general population. The use of antibiotics for both populations steadily declined from birth to around age 11. Again, there was a notable increase in antibiotic prescriptions for female children in continuing care after age 11, peaking at age 17, with an accompanying increase for males in continuing care, although not to the same extent.

In addition to respiratory antibiotics, two other categories of anti-infective medications were also

commonly prescribed for children in continuing care: those for infections related to the ear, nose and throat (35% of females and 30% of males) and topical drugs used to deal with skin infections, viruses and funguses (51% of females and 41% of males). The prescribing of these medications was about 1.3 to 2.3 times the rate for the general population, and in both cases the rates were higher for females than for males (see Table 4).

**Figure 18**

### Children prescribed an antibiotic medication by age at time of dispensation (AHFS 08:12)



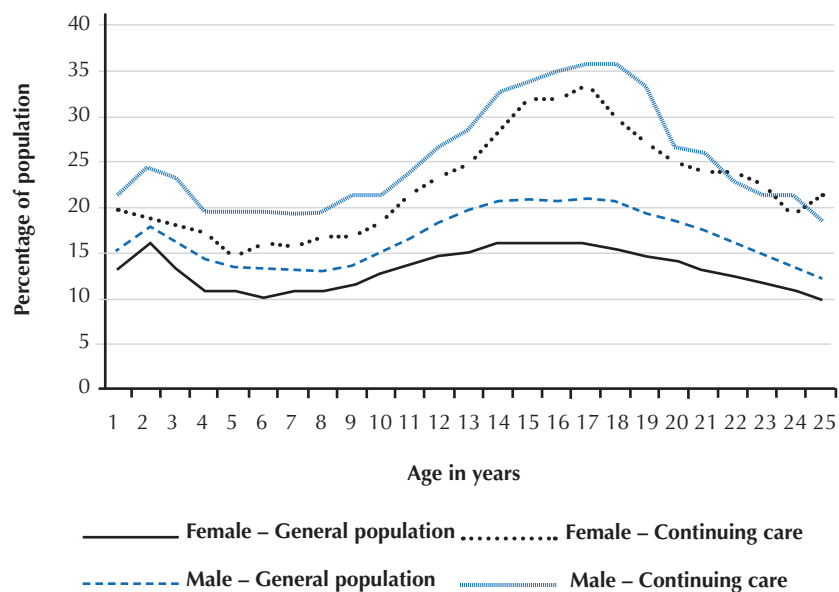
## Injuries and poisonings

As with respiratory issues, children in continuing care had higher rates of injury than the general population had, as shown in Figure 19. The most common types of injuries for which children saw a medical practitioner were sprains and strains, open wounds, contusions and fractures. Poisonings were quite rare for children in the general population, and were not among the 25 most common injuries for which children saw a medical practitioner; however, for children in continuing care, poisonings ranked 19th (MSP billing data for injuries and poisonings, 1995–2005).

For all groups, the rate of injury increased between ages one and two and then declined until around age five. Injuries began to increase again around age eight and peaked in the late teens, before beginning to decline once more. In the later teen years, females in continuing care were 1.9 times more likely to see a medical practitioner because of an injury than were females in the general population; and males in continuing care were 1.7 times more likely to see a medical practitioner because of an injury than were males in the general population. Males had a higher rate of injury than females in all age groups up to age 19.

**Figure 19**

**Children who saw an MSP-paid medical practitioner for an injury or poisoning-related condition (ICD9 Chapter 17)**

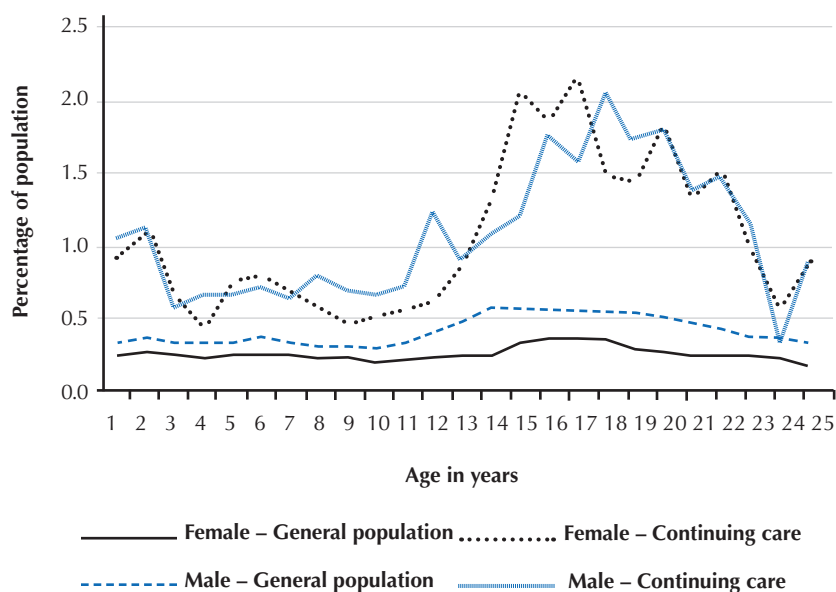


Relatively few children and youth injuring themselves required hospitalization. In general, as shown in Figure 20, conditions requiring hospitalization differed from conditions prompting a physician visit. The most common reasons for hospitalization for children in continuing care were for fractures, poisonings and complications resulting from medical or surgical procedures.

For the general population, the need for hospitalization because of injuries and poisonings remained quite steady throughout childhood and peaked at around 0.5% through adolescence, again with the rate for males being higher than for females. For children in continuing care, the hospitalization rate was also quite low, peaking at around 2%; however, the rate was three to six times higher for children in their late teens in continuing care than for the general population. From around age 12 the gap between children in continuing care and children who had never been in care became much more pronounced.

**Figure 20**

### Children hospitalized for an injury or poisoning-related condition (ICD9 Chapter 17)

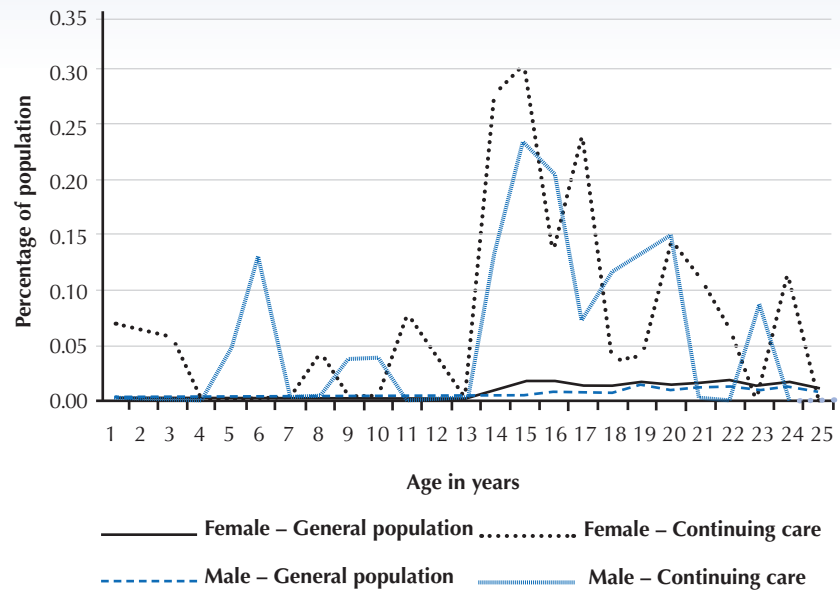


Figures 21 to 25 show injuries requiring hospitalization resulting from such things as falls, motor vehicle accidents, assaults and accidental poisonings. Young children in continuing care were more likely to have injuries caused by falls and accidental poisonings, while motor vehicle accidents and assaults were more common among youth in continuing care.

**Figure 21**

### Children hospitalized for an injury (undetermined whether accidentally or purposely inflicted)

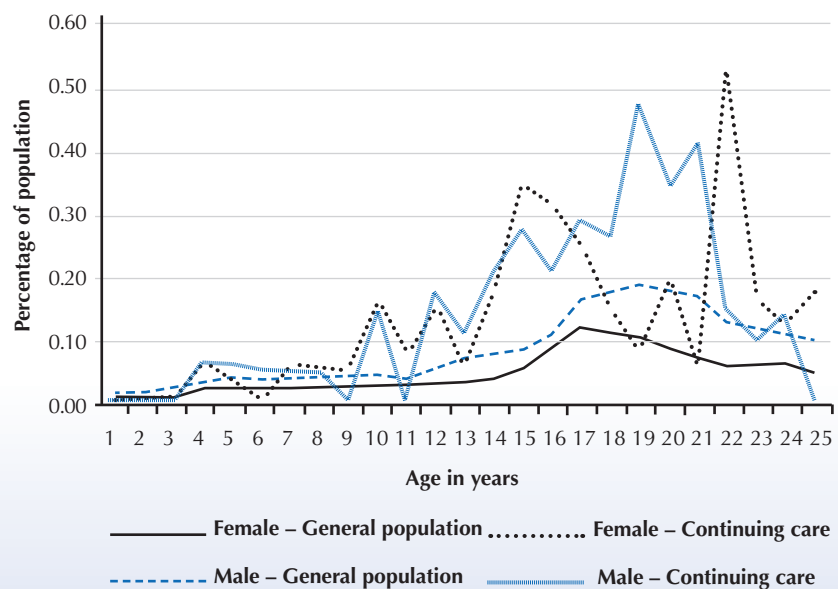
Relative to children who had never been in care, children in continuing care had a higher rate of hospital admissions for injuries where the cause was undetermined (i.e., it was unclear whether the injury was the result of an accident or was purposely inflicted).



**Figure 22**

### Children hospitalized for a motor vehicle accident-related injury

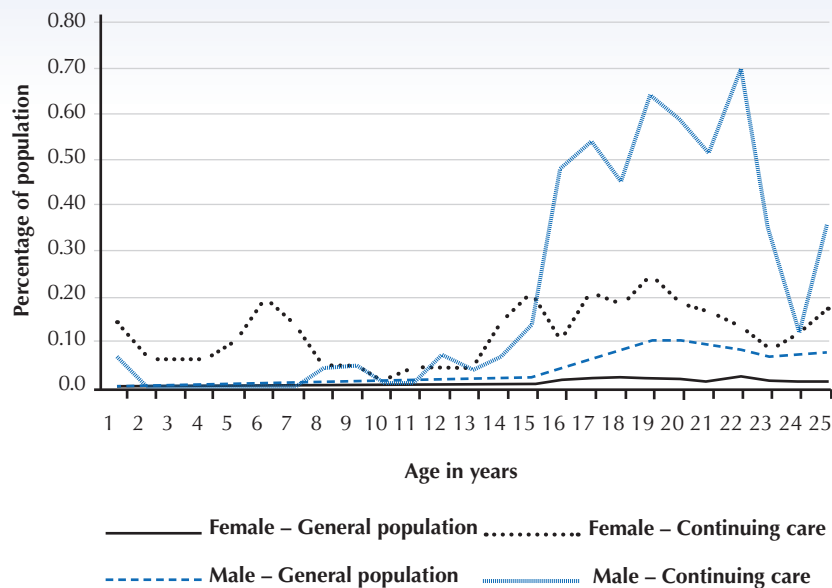
Both male and female youth in continuing care experienced higher rates of hospitalization for injuries related to motor vehicle accidents, although the rate for females dipped below the rate for males in the general population between ages 18 and 19.



**Figure 23**

### Children hospitalized for an assault-related injury

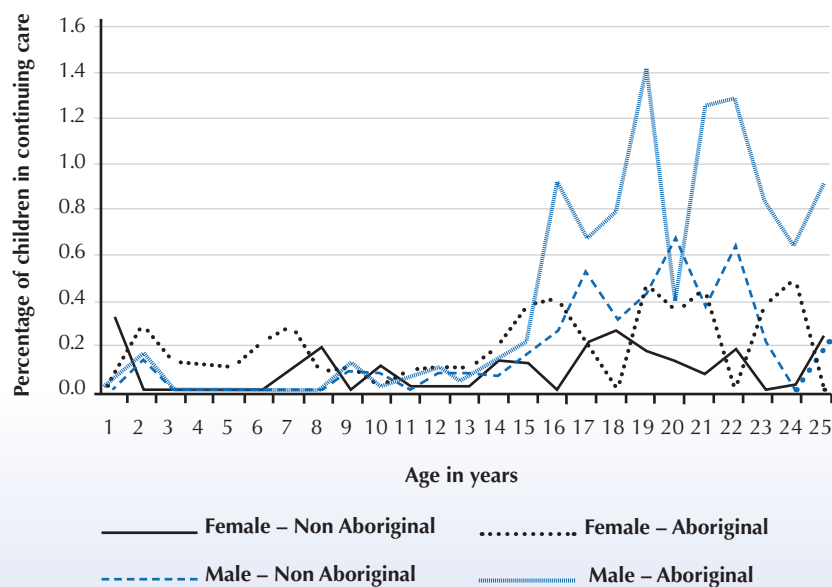
Males in continuing care aged 16 to 19 experienced most of the assault-related injuries and at higher rates than any other group. Females in continuing care had higher assault-related injuries than males in the general population.



**Figure 24**

### Children in continuing care hospitalized for an assault-related injury

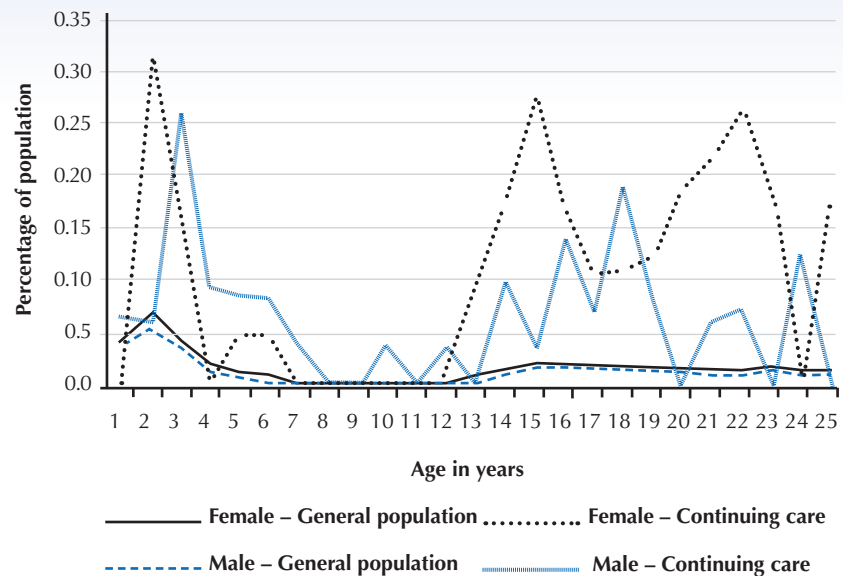
Aboriginal males in continuing care have the highest rates of assault-related injuries of all groups.



**Figure 25**

### Children in care hospitalized for an accidental poisoning

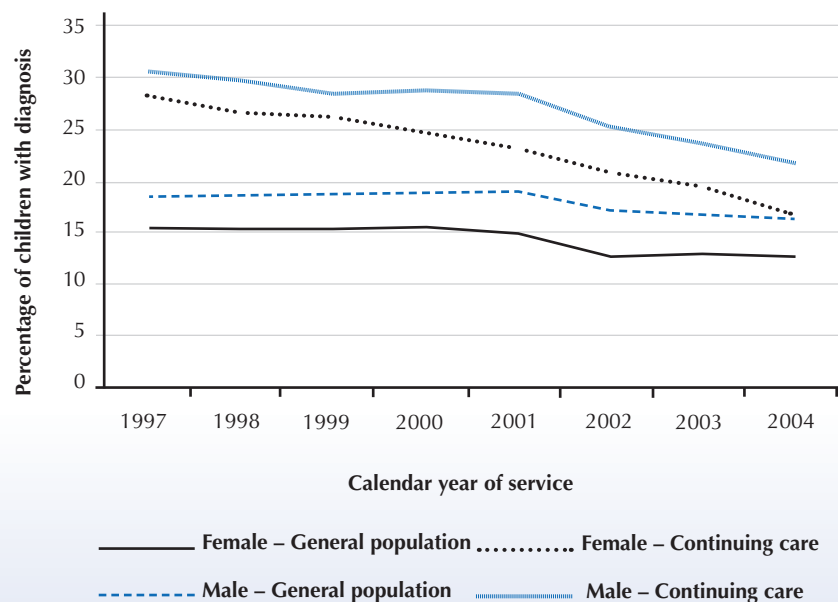
There was also a spike in accidental poisonings among females in continuing care aged 12 to 15; the high number of accidental poisonings in this group, compared with females who had never been in care, raises the question of whether they were accidental poisonings or suicide attempts (see also Figure 32).



**Figure 26**

### MSP-recorded injury and poisoning diagnosis trends

As shown in Figure 26, injuries and poisonings both for children in continuing care and for the general population declined over time, with proportionally greater declines for children in continuing care than for children who had never been in care.



## Injuries in the post-19 age group

Between the ages of 19 and 25, children formerly in continuing care continued to experience much higher rates of injury (requiring a visit to a medical practitioner) than the general population had – 1.9 times higher for females and 1.5 times higher for males. The rate of injury for youth formerly in continuing care was similar for both males and females, while in the general population women continued to have a lower rate of injury than men (Figure 19).

## Mental disorders

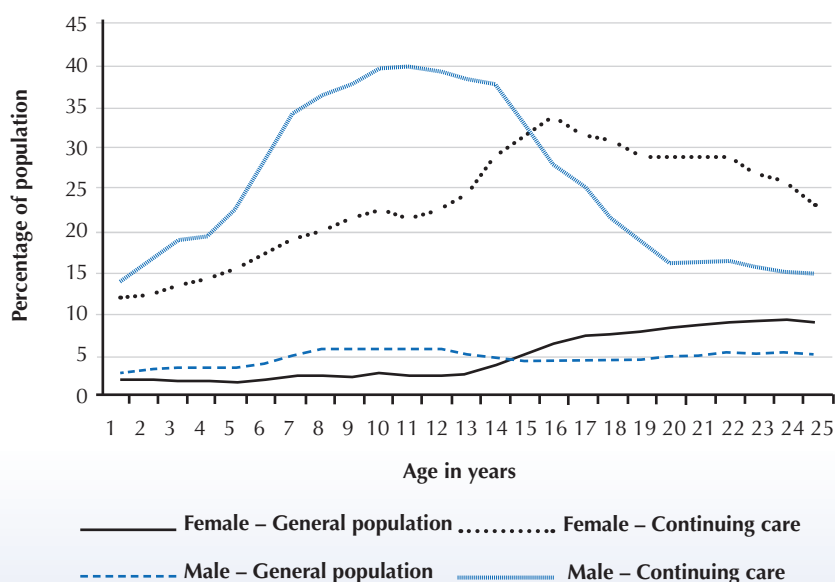
As shown in Table 1, approximately 65% of children in continuing care were diagnosed at least once with a mental disorder by a medical practitioner, compared with about 17% of the general population. A child in continuing care was almost four times as likely to be diagnosed with a mental disorder as a child in the general population.

The most common mental disorder diagnoses for children in continuing care were:

- disturbance of conduct (which mainly involves aggressive and destructive behaviour, as well as disorders involving delinquency)
- hyperkinetic syndrome (including short attention span, distractibility, hyperactivity and impulsiveness)
- depression
- neurotic disorders (including anxiety, phobias, and obsessive-compulsiveness)

**Figure 27**

### Children who saw an MSP-paid medical practitioner for a mental disorder (ICD9 Chapter 5)



- disturbance of emotions specific to childhood and adolescence
- developmental delays, and
- adjustment reactions.

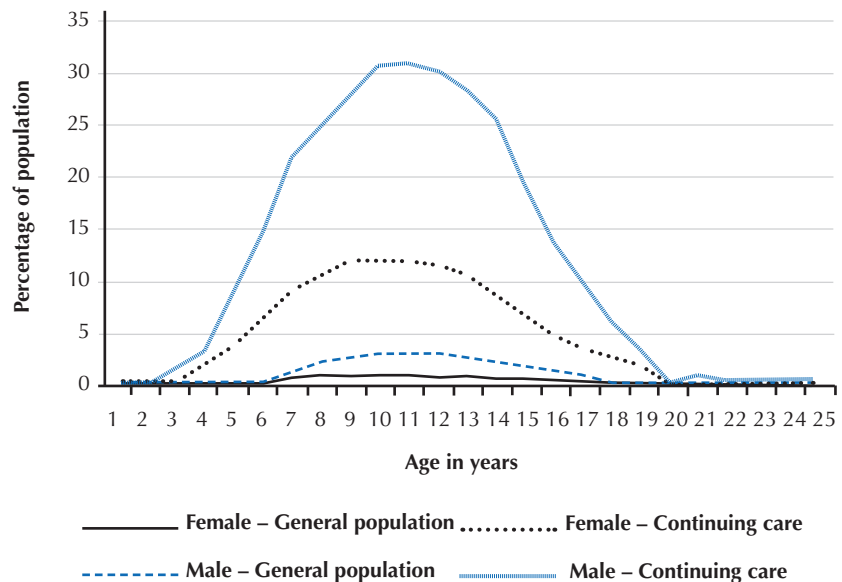
Figure 27 shows that more males were diagnosed with a mental disorder at a younger age than were females. This trend changed at about age 15, when more females, both in the continuing care population and the general population, were diagnosed with a mental disorder. The differences may be due to the differences in the types of diagnosis: males were more frequently diagnosed with conduct and hyperkinetic disorders than were females, who were more likely to be diagnosed with depression and neurotic disorders.

The prescribing patterns for cerebral stimulants (Ritalin-type medications) shown in Figure 28 are consistent with the age distribution of mental disorders for males. Mental disorder diagnoses appear to be most frequent from about age 7 to 15.

Males in continuing care were almost 10 times as likely to be prescribed a cerebral stimulant medication as males in the general population, and one third of all males in continuing care will have been prescribed one of these medications at least once. Males in continuing care were prescribed cerebral stimulants more than twice as often as females in continuing care were, and females in continuing care were prescribed these medications more than 12 times more often than females in the general population were.

**Figure 28**

### Children prescribed a respiratory and cerebral stimulant medication by age at time of dispensation

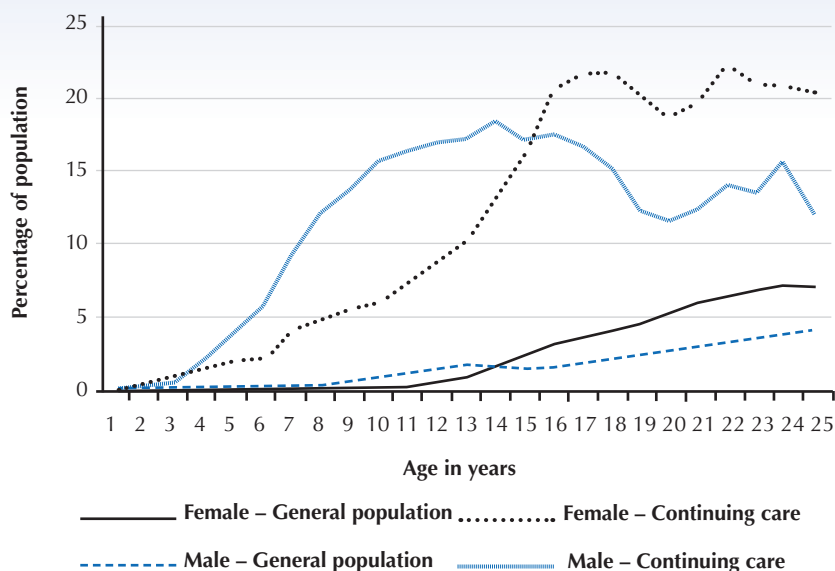


The age distribution for the prescribing of psychotherapeutic drugs (e.g., anti-depressants and tranquilizers), shown in Figure 29, was similar to the age distribution for mental disorders, continuing to rise for females as they aged. As was the case with mental disorder diagnoses, psychotherapeutic medications began to be prescribed for greater numbers of females than males at around age 15. This held true for children both in continuing care and in the general population.

Anxiolytics (medications used to treat the symptoms of anxiety) were not prescribed as often as psychotherapeutic medications although, overall, children in continuing care were prescribed these medications about 2.5 times as often as children in the general population were, as shown in Figure 30. The prescribing of these medications began to increase at around age 14, with a higher prescribing rate for females than for males, and the rate for children in

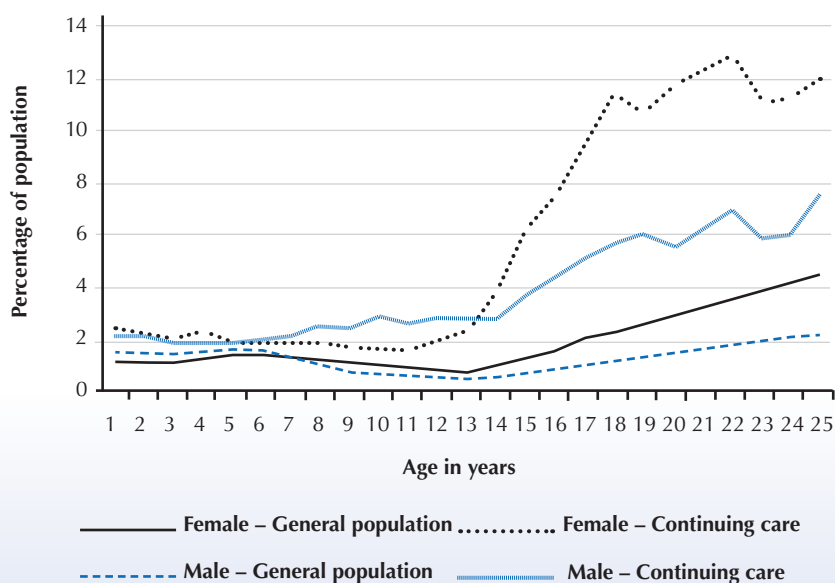
**Figure 29**

### Children prescribed a psychotherapeutic medication by age at time of dispensation



**Figure 30**

### Children prescribed an anxiolytic medication by age at time of dispensation

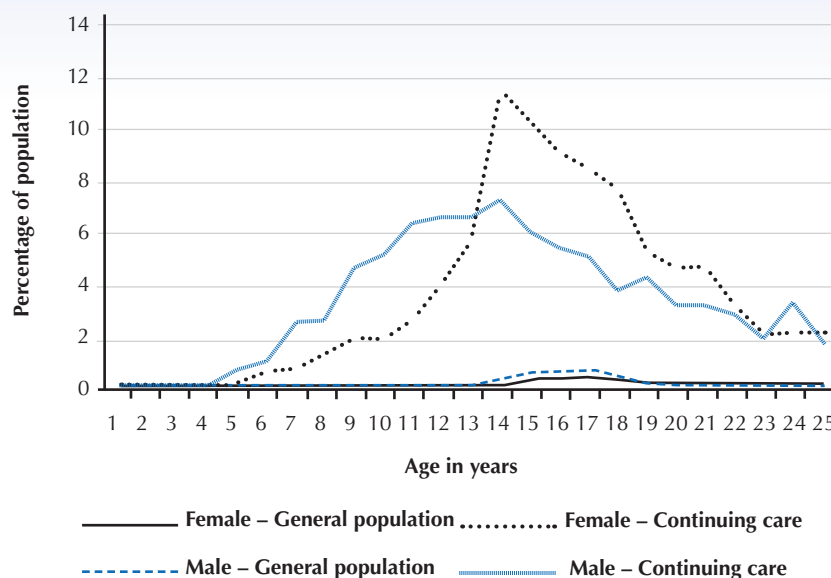


# Figure 31

## Children hospitalized for a mental disorder (ICD9 Chapter 5)

continuing care peaking at about five times that for the general population at age 18.

Hospital admissions (Figure 31) followed a pattern similar to mental disorder diagnoses. Males in continuing care were more likely to be hospitalized earlier in their lives, but the pattern changed around age 13, where more females were hospitalized than males. While children in continuing care were almost four times as likely to be diagnosed with a mental disorder as children in the general population, they were 17 times more likely to be hospitalized for a mental disorder.



While adjustment reactions were the seventh most common mental disorder-related diagnosis by a medical practitioner for children in continuing care, they were the most common reason for hospitalization for a mental disorder-related condition, followed by disturbance of conduct, affective psychoses, neurotic disorders, hyperkinetic syndrome, non-dependent use of drugs, and depressive disorders (MSP billing data for mental disorders, 1995–2005). The most common reason for hospitalization for a mental disorder among children who had never been in care was affective psychoses, followed by adjustment reactions, neurotic disorders and depressive disorders.

**Overall, children in continuing care were prescribed medications for anxiety about 2.5 times as often as children in the general population were.**

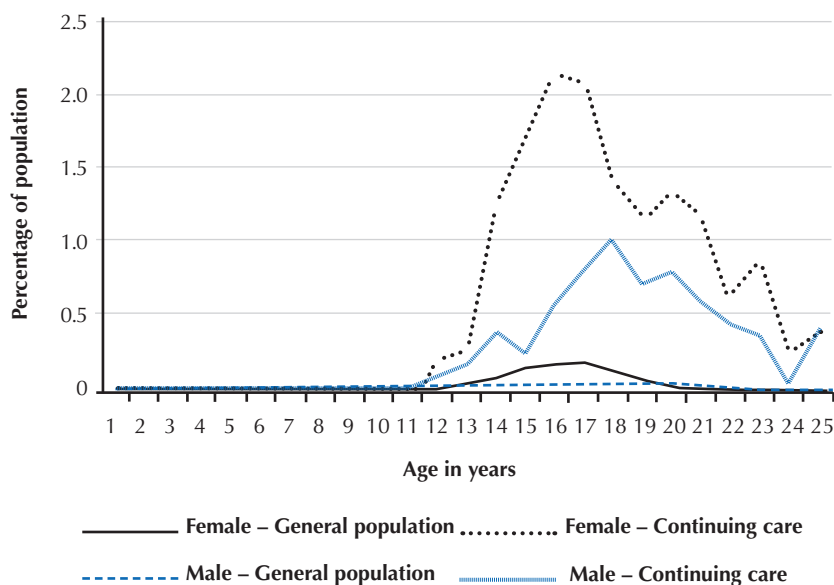
*At ages 16 and 17, just over 2% of females in continuing care were hospitalized at least once for an attempted suicide, which was more than 12 times the rate for the females in the general population.*

Figure 32 shows that the rate of hospitalization for a suicide attempt was much higher in the continuing care population than in the general population. At ages 16 and 17, just over 2% of females in continuing care were hospitalized at least once for an attempted suicide, which was more than 12 times the rate for the females in the general population. Although the rate of hospital admission for suicide-related issues for males was less than for females, males in continuing care aged 14–19 were on average 14 times more likely to be hospitalized for a suicide-related issue than were males in the general population.

There was no improvement over time in the area of mental disorders. The trend for mental disorders increased for children and youth between 1997 and 2004. The trend for children in continuing care leveled off for females around 2001 and for males around 2003, while the rate for the general population continued to increase gradually (Figure 33). Overall, the rate for mental disorders for children in care remained six times greater than for the general population, with the rate being higher for males than for females.

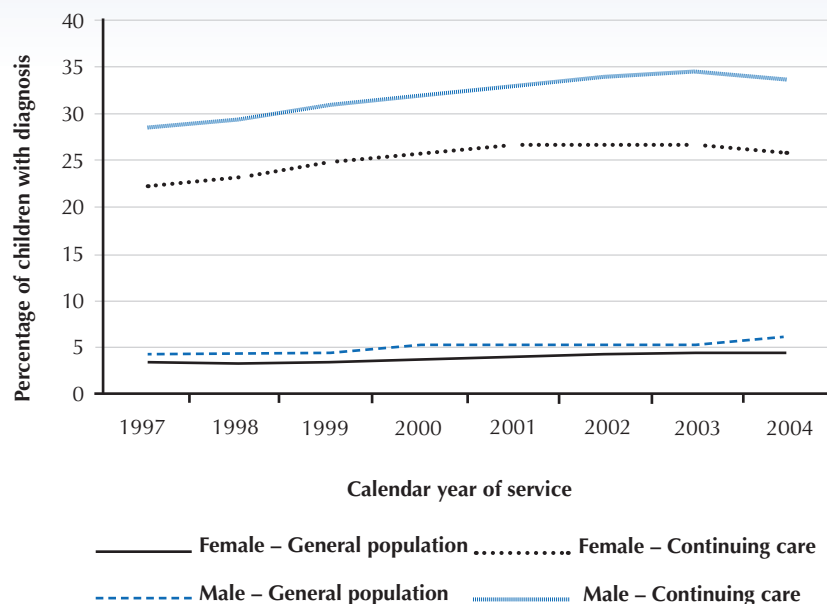
**Figure 32**

### Suicide-related hospitalization in children



**Figure  
33**

### MSP-recorded mental disorder diagnosis trends (ICD9 codes 290–319)



### *Mental disorders in the post-19 age group*

Between the ages of 19 and 25, young people who had been in continuing care continued to fare more poorly than the general population. With respect to mental disorders, Figure 27 shows that for several years after discharge from care at age 19, rates for both males and females remained stable but high. In the general population of females, the rate increased until age 25, but between the ages of 19 and 25 was more than three times less than the rate for females in continuing care. For males in continuing care, the rate flattened out at age 20 and then remained at about 15% until age 25 – still more than three times higher than for males in the general population.

The prescribing of psychotherapeutic medications remained at its highest level for females who had been in continuing care – about three times greater than for females in the general population, whose prescription rate continued to increase up to age 25, as shown in Figure 29. For males in continuing care, prescription rates declined between ages 14 and 20 and then leveled off at around 13%, which was 3.5 times the rate for males in the general population.

*Males in continuing care were almost 10 times as likely to be prescribed a cerebral stimulant medication as males in the general population, and one third of all males in continuing care will have been prescribed one of these medications at least once.*

Anxiolytic medication prescription rates continued to rise for all groups beyond age 19; however, anxiolytic medications were prescribed more than three times as often for young adults who had been in continuing care (Figure 30).

The rate of hospitalization for mental disorders continued to drop until about age 23 for young people who had been in continuing care, although it remained 10 times higher than for those who had never been in care (Figure 31).

Hospitalization for suicide attempts increased between ages 19 and 20 for young people formerly in continuing care and then declined again (Figure 32). The rate continued to remain higher for youth who had been in continuing care than for the general population.

For males and females who had been in continuing care, the likelihood of being hospitalized because of a suicide attempt was twice as high as for a motor vehicle accident. Females who had never been in care were also more likely (1.5 times) to be admitted for a suicide attempt. Males who had never been in care were almost three times more likely to be admitted to hospital because of a motor vehicle accident than because of an attempted suicide (Figures 22 and 32).

Hospital admissions resulting from assault also continued to drop after age 19 to around age 24, with males having higher rates than females (Figures 23 and 24). However, females in continuing care had a higher rate of hospital admission resulting from assault than males in the general population had. Aboriginal males formerly in continuing care were admitted to hospital for assault-related injuries more than twice as often as non-Aboriginal males formerly in continuing care were. The rate was almost three times higher for Aboriginal females than for non-Aboriginal females.

## Pregnancy and childbirth-related conditions

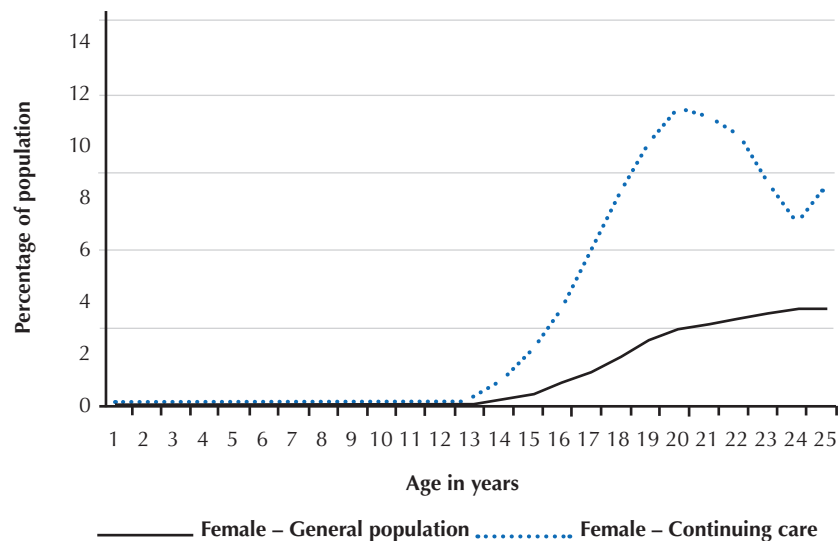
Pregnancy and childbirth-related conditions include abortions, pregnancy and childbirth.

Females in continuing care to age 19 saw a medical practitioner for a pregnancy or birth-related condition more than four times as often as did females in the general population (Figure 34). The most common reasons were related to abortions, normal deliveries and pregnancy complications.

The rate of pregnancy increased until age 20 for females in continuing care, and then began to decline. For the general population, the percentage of females seeing a medical practitioner about a pregnancy or childbirth-related issue continued to rise until age 25, but remained at less than half that of the continuing care population. Aboriginal females in care visited a medical practitioner for a pregnancy or childbirth-related condition at a rate 1.3 times higher than for non-Aboriginal females in continuing care.

**Figure 34**

**Females who saw an MSP-paid medical practitioner for a pregnancy or childbirth-related condition (ICD9 Chapter 11)**



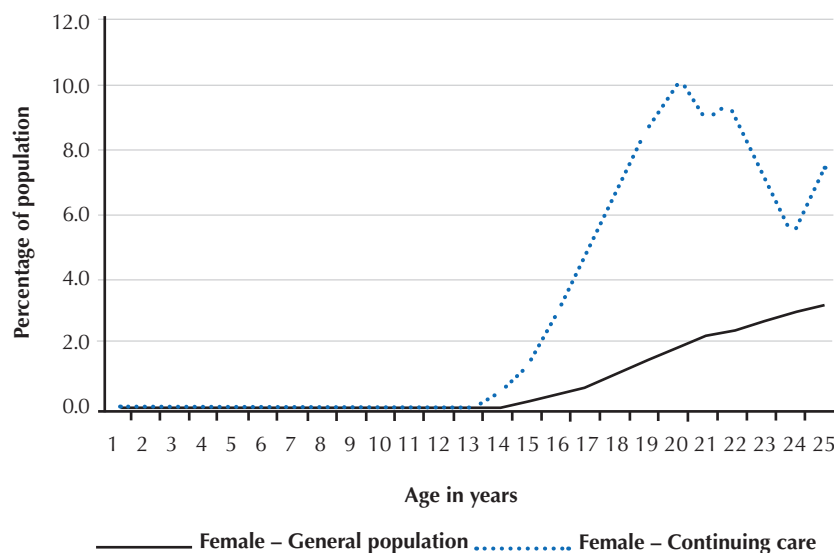
*Females in continuing care to age 19 saw a medical practitioner for a pregnancy or birth-related condition more than four times as often as did females in the general population.*

Females in continuing care between the ages of 13 and 19 were admitted to hospital for a pregnancy or childbirth–related condition approximately nine times as often as females who had never been in care (Figure 35). The most commonly identified services were for abortions, trauma to the perineum and vulva during delivery, and early or threatened labour.

Females in the general population aborted pregnancies 1.4 times more often than females in continuing care did. Females in continuing care experienced trauma to the perineum and vulva during delivery 1.6 times more frequently than females in the general population and experienced early or threatened labour almost twice as often as females in the general population.

**Figure  
35**

### Females hospitalized for a pregnancy or childbirth–related condition (ICD9 Chapter 11)

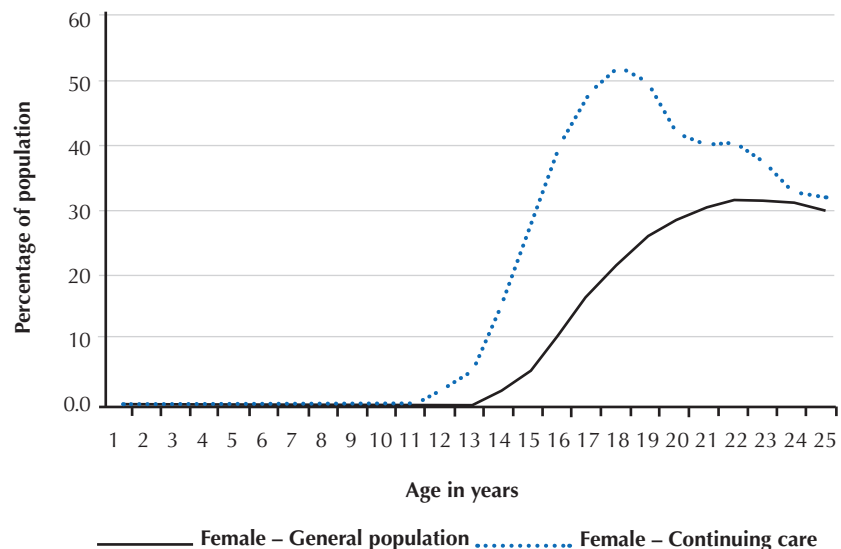


Females in continuing care aged 12 to 19 were also prescribed contraceptive medications (contraceptives and progestins) about 3.5 times more frequently than were females who had never been in care. A sharp increase began at age 14 and peaked at 50% of females in continuing care at age 18. For the general population, the increase in dispensation began at age 15, and by age 24, 30% of both populations were being prescribed contraceptives (Figure 36).

**Note:** This information does not tell us whether contraceptives were prescribed before or after a medical practitioner had been seen about a pregnancy. Figure 21 refers only to prescribed contraceptives. Condoms, spermicides and other over-the-counter contraceptives are not included.

**Figure  
36**

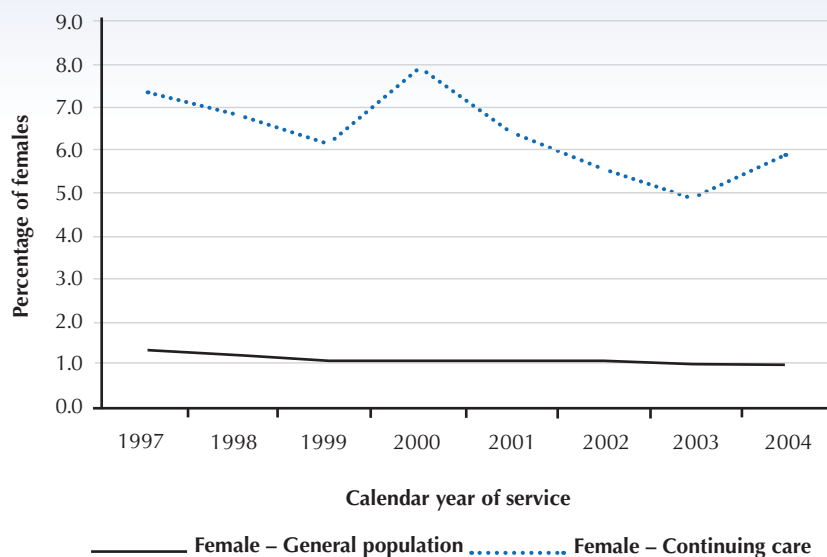
**Females prescribed a contraceptive medication by age at time of dispensation (AHFS 68:12 Contraceptives or 68:32 Progestins)**



The pregnancy-related MSP service rate for females in continuing care under age 19 declined from 7.3% to 5.8% between 1997 and 2004 (Figure 37); the rate for the general population fell from 1.2% to 0.9%. Over this same period there was an increase in the prescribing of contraceptive medications for females (Figure 38), the rate having almost doubled for the general population from 4.8% to 9.0%, while increasing from 21.2% to 24.7% for females in continuing care.

**Figure 37**

### MSP-recorded pregnancy-related diagnosis trends (ICD9 codes 630–679)



**Figure 38**

### PharmaNet-recorded contraceptive and progestin prescription trends (AHFS codes 68:12 and 68:32)

