

Mental Health and Social Program Usage: Analyses for Integrated Mental Health Hubs

INTRODUCTION

In response to Valuing Mental Health: Report of the Alberta Mental Health Review Committee 2015, the report Valuing Mental Health: Next Steps (Next Steps)^a was released June 2017 and called for a transformation of Alberta's addiction and mental health system to integrate child and adult services to better serve the needs of youth.

Action 1 from the Next Steps report is to implement a community-based service hub model (Integrated Hubs) where services are jointly planned and delivered by multiple sectors. Integrated Hubs are an emerging practice to address service access issues that youth experience. Integrated Hubs typically focus on prevention and early intervention and the provision of resources to help youth manage their concerns and navigate pathways to specialized services, as required. Services can include, but are not limited to: housing, physical and mental health services, primary health care, addiction services, justice involvement, social services, and school-based services¹.

PolicyWise for Children & Families (PolicyWise) has been contracted by Alberta Health to create an implementation framework that will support community-led implementation^a of Integrated Hubs in small to medium population centres^b in Alberta for youth, defined as 11 to 24 years of age. This framework and associated supports include implementation consideration, and collaborative governance and coordination. An evaluation component comprises developmental and summative evaluation approaches.

In October 2017, PolicyWise released an Expression of Interest application that contained two stages. All applications were reviewed by external review panel members using specific, pre-defined criteria. The first stage determined the level of community interest and readiness for piloting an Integrated Hub. Three communities in Alberta (Sites A, B, and C) moved forward to be supported in the second stage implementation application process, which would determine funding and support to move forward to actual implementation. The three community sites all included 1 or 2 municipalities and the surrounding rural areas – some of which were quite large geographically. Community sites provided postal codes to identify the region of their site.

KEY FINDINGS

- **Between 2005/06 and 2010/11, 20% of youth aged 11-24 years received a mental health diagnostic code, with the highest rate (30%) in young women aged 19-24 years.**
- **Depression, anxiety and ADD/ADHD were the most common diagnostic codes given.**
- **Youth with mental health diagnostic codes were more likely to:**
 - **Have been involved with the criminal justice system.**
 - **Have received assistance from Income Support, Assure Income for the Severely Handicapped (AISH), Persons with Developmental Disabilities (PDD) or Family Support for Children with Disabilities (FSCD)**
 - **Have received a diagnostic code for substance use, alcohol dependence or intentional self-harm.**
- **45% of young women ages 19-24 years with a mental health diagnostic code who resided in low socio-economic status (SES) neighbourhoods experienced at least one pregnancy during the study period. The rate was 30% for those young women residing in middle or high SES neighbourhoods.**

^a Valuing Mental Health: Next Steps available at: <https://open.alberta.ca/publications/9781460134771>

^b A small to medium community is defined by Statistics Canada (2018) as a population between 1,000 to 99,999 persons

From the first stage of applications and engaging with the three communities, it was evident that the communities knew aspects of the youth population they served, however, they did not have data beyond individual organization statistics and anecdotal examples of individual need. Analyses from the linked administrative data from the Child and Youth Data Laboratory's Longitudinal Project^{c,d} were generated for the three community sites to inform policy and program development for the integrated hubs. Together, PolicyWise worked with the communities to determine their service areas and designed facilitated community sessions to mobilize the results from the analyses of the linked administrative data directly to each community. The results presented to each community site were then used to inform what communities knew about service use in their community as part of their planning and strategic activities for their integrated hub. To protect the confidentiality of the communities, this report highlights the general results from the analyses that were presented at a summit which brought together provincial stakeholders to learn about integrated hubs more generally and mental health needs across the province. When there were not statistically significant differences, the results are presented at the provincial level. In cases where the sites were significantly different from one another, those results are highlighted.

METHODS

This study used linked administrative data from the Child and Youth Data Lab (CYDL) Longitudinal Project, which combines data from six different ministries (Health, Community and Social Services, Children Services, Education, Advanced Education, and Justice and Solicitor General) between the 2005/06 to 2010/11 fiscal years. Data from Alberta Health included the Alberta Health Care Insurance Plan (AHCIP) registry and datasets that are submitted to Alberta Health with details on every hospital inpatient discharge, emergency room visits, outpatient clinic visit and physician office visit (physician claims). The hospital, emergency room and outpatient clinic data utilized here is what is ultimately included in CIHI's Discharge Abstract Database and National Ambulatory Care Reporting System. For these analyses, individuals were included if they were between the ages of 11 and 24 years in the 2005/06 fiscal year and registered in the AHCIP during the entire study period (2005/06 to 2010/2011). Information presented is from a provincial level as well as site specific. Communities provided postal codes to identify the region of their community.

Variables

All variables used in the analysis were derived from the CYDL administrative data. Data elements of interest from the databases include diagnostic codes for mental health disorders, demographics, and other characteristics of the population. More detailed methods are in Appendix A: Data Notes.

^c More information about the Child and Youth Data Laboratory (CYDL) please see <https://policywise.com/data/p2/>

^d For a full report using data from CYDL on mental health see <https://visualization.policywise.com/P2dashboard/?data=MentalHealth&year=2010-11>



FINDINGS

Mental Health

In Alberta, 20% of youth between the ages of 11 and 24 years (n=117,306 youth, 95% CI: 20%-21%) received at least one mental health diagnostic code between 2005/06 and 2010/11 (please see Appendix A for Data Notes). While a similar pattern was found for Sites B and C, Site A was slightly higher at 23% (95% CI: 22% - 24%).

Of note, females aged 19-24 years were (Figure 1):

- 1.5 times more likely to receive a mental health diagnostic code as compared with males of the same age.
- 2 times as likely to receive a mental health diagnostic code as compared to younger females aged 11-18 years.

The proportion of males receiving a mental health diagnostic code was similar regardless of age.

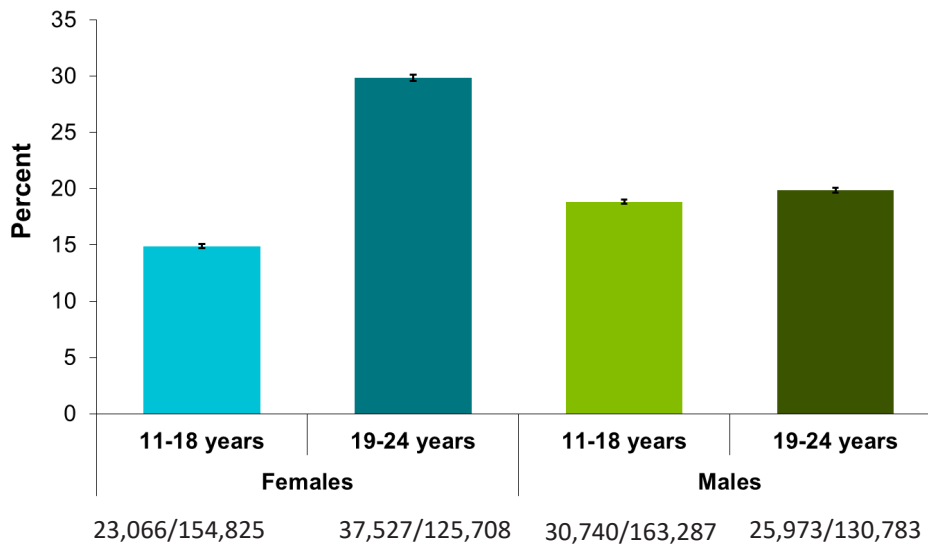


Figure 1. Proportion of Youth Who Received a Mental Health Diagnostic Code between 2005/06 and 2010/11, by Age and Sex

Across Alberta, youth living in low SES neighbourhoods were slightly more likely to have received a mental health diagnostic code than youth living in middle- or high-income SES neighbourhoods (Figure 2). This pattern was intensified for community Site A where 32% (95% CI: 26% - 38%) of youth residing in low SES neighbourhoods had a diagnostic code for a mental health condition as compared to 23% (95% CI: 21% - 24%) of youth in middle or high SES neighbourhoods. For the other two community sites, there were no significant differences from the overall pattern found in Alberta. These results demonstrate the importance of looking at whether site-specific characteristics such as SES interact with rates of mental health diagnostic codes because there can be geographical pockets where the patterns differ from the overall provincial pattern. For example, community site A may use information from Figure 2 to better understand which neighborhoods might benefit most from an integrated hub.

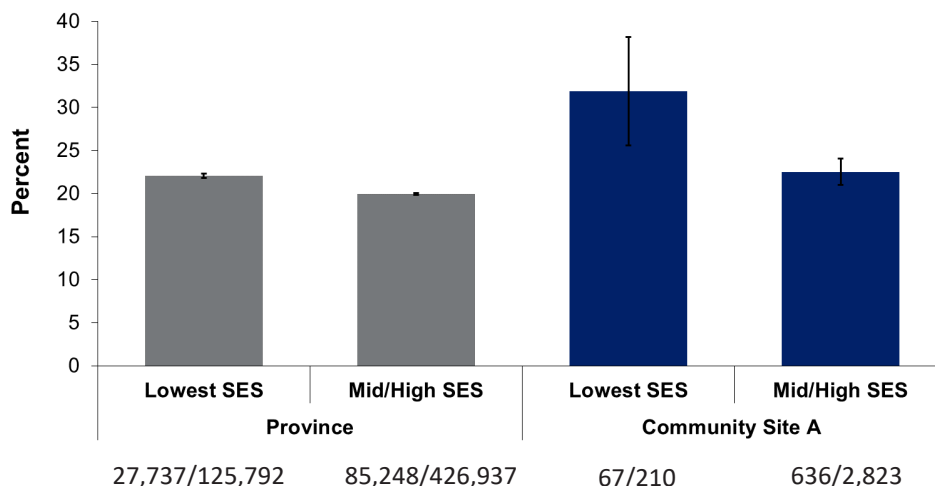


Figure 2. Number of youth aged 11 to 24 years who received mental health diagnosis codes between 2005/06 and 2010/11, by condition



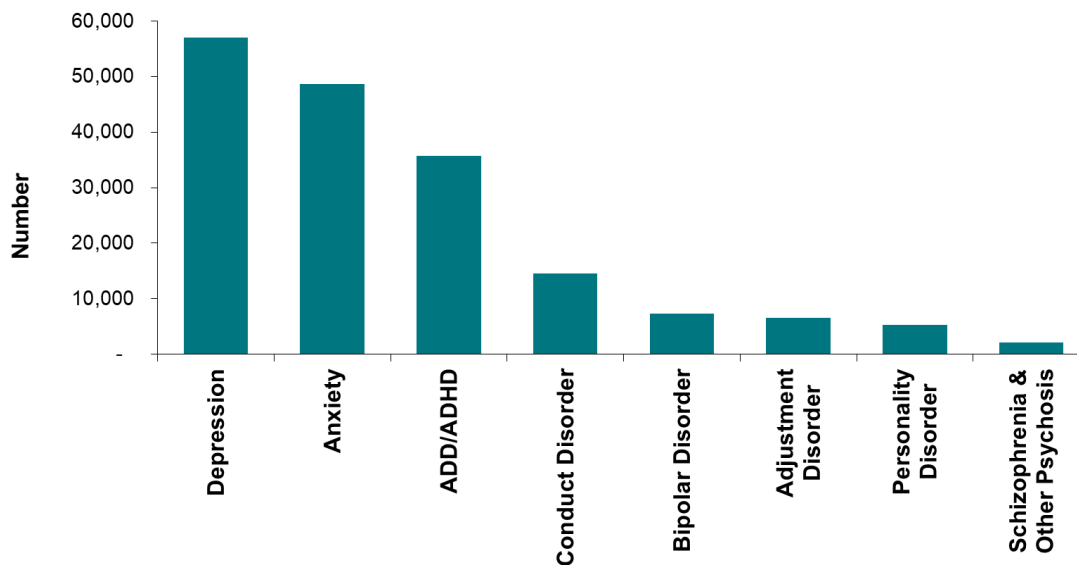


Figure 3. Number of youth aged 11 to 24 years who received mental health diagnosis codes between 2005/06 and 2010/11, by condition

Depression, anxiety and ADD/ADHD were the most common diagnostic codes received by youth during the study period (Figure 3). As would be expected, the type of diagnostic codes received by youth were strongly associated with age and gender (Figures 4 and 5; Table 2).

Of females aged 19-24 years:

- 20% received a diagnostic code of depression, a rate two times higher than males of the same age and almost three times higher than females aged 11-18 years.
- 15% (95% CI: 15.1% - 15.5%) received a diagnostic code for anxiety compared to 8% (95% CI: 8.1%-8.4%) of older male youth.
- They were more likely to receive bipolar, adjustment and personality disorder diagnostic codes compared to younger females or males.

In contrast, males were more likely to receive diagnostic codes for ADD/ADHD, conduct disorder, and schizophrenia or other psychosis. Of males aged 11-18 years:

- 12% (95% CI: 11%-12%) received at least one diagnostic code for ADD/ADHD during the study period; this rate is two times higher than found in males aged 19-24 years and females aged 11-18 years.
- 4% (95% CI: 4% - 5%) received a diagnostic code of conduct disorder; this rate is more than two times higher than males aged 19-24 years and females aged 11-18 years.

As would be expected, the frequency of schizophrenia and psychosis is much lower than other diagnostic codes for mental health discussed here. Males aged 19-24 years were 2 times more likely to have received a diagnostic code for schizophrenia and other psychosis compared to females of the same age. There were no differences in these general patterns for the three community sites. These graphs illustrate different mental health conditions to be aware of when planning for female and male youth at different ages.

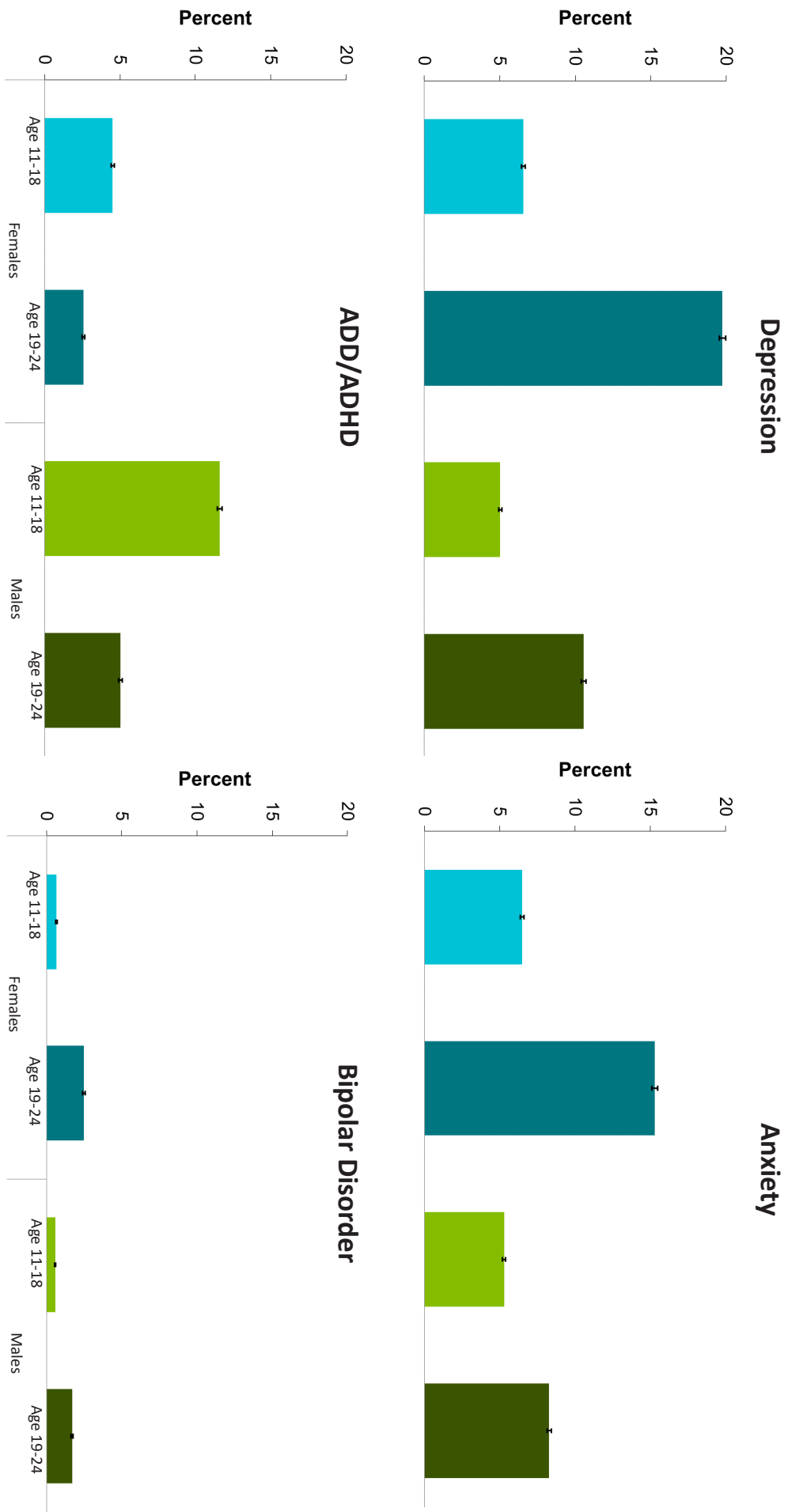


Figure 4. Proportions of Youth Who Received One of the Most Common Diagnostic Codes, by Age (11-18 years, 19-24 years) and Sex (Female, Male)

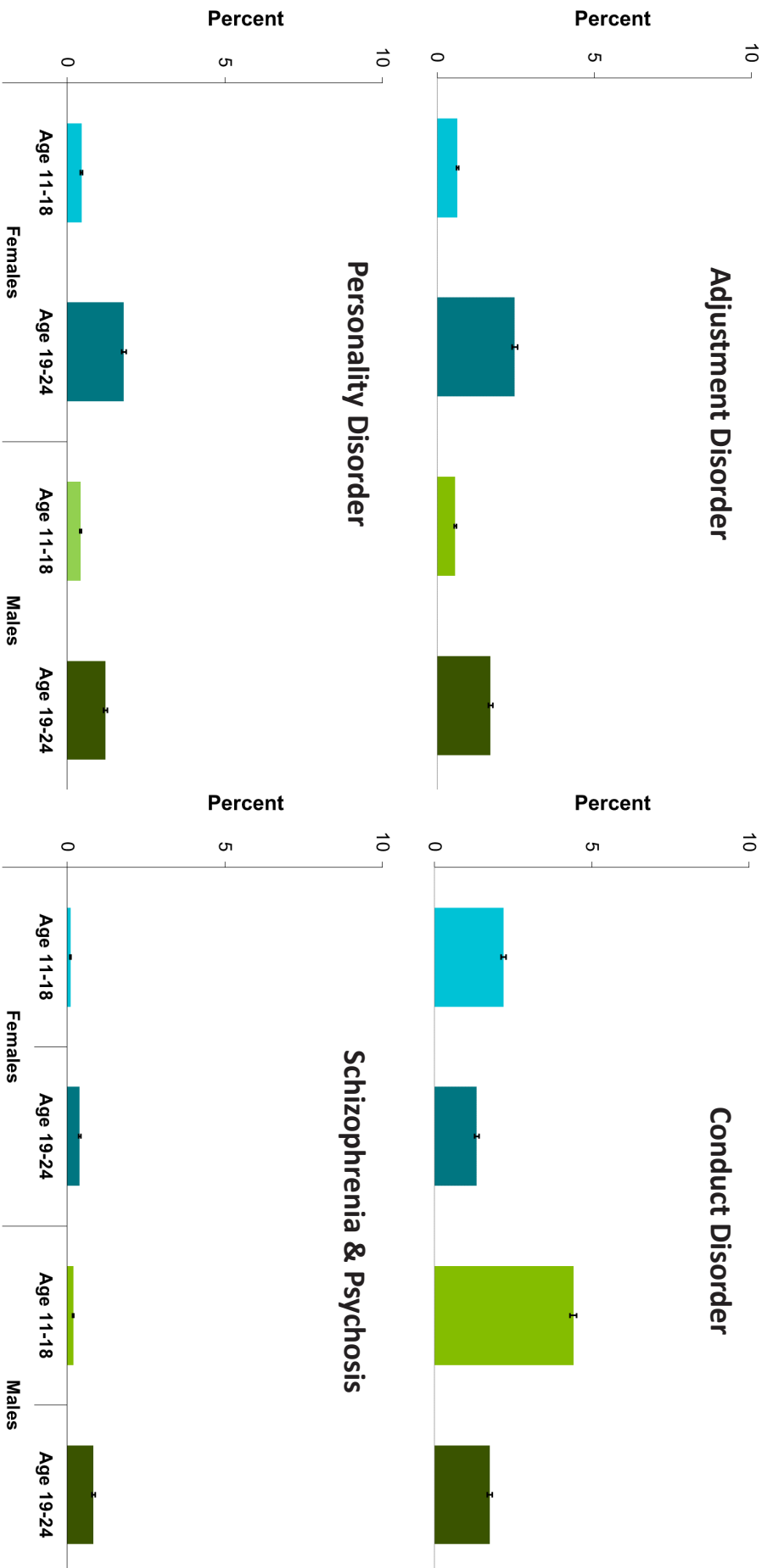


Figure 5. Proportions of Youth Who Received Other Diagnostic Codes, by Age (11-18 years, 19-24 years) and Sex (Female, Male)

Community sites found that indicators of their youth populations' social circumstances were useful in determining what services youth might require at their integrated hub. For instance, partnerships with the educational system may be of benefit:

- 29% of youth who were in school during the study period and considered performing below expectations had a mental health diagnostic code, as were 40% of youth who had a special education code (Figure 5). This is, respectively, 1.4 and 2 times higher than the general population of youth.
- The proportion of youth who received English as a Second Language (ESL) services at school varied based on community site (Figure 6). Site B had statistically significantly more students receiving ESL services than the other two community sites and Alberta as a whole. The above may impact service delivery as literacy in English for the youth and their families may not always be able to be assumed and there may be cultural differences to take into account when planning.

Table 1. Proportions of Youth Who Received Mental Health Diagnostic Codes, by Age (11-18 years, 19-24 years) and Sex (Female, Male)

Mental Health Condition	Age Category	Female		Male	
		Number of Individuals	Percent (95% CI)	Number of Individuals	Percent (95% CI)
Depression	Age 11-18	10,139	7% (6.4-6.7)	8,208	5% (4.9-5.1)
	Age 19-24	24,830	20% (19-20)	13,813	11% (10.4-10.7)
Anxiety	Age 11-18	10,020	7% (6.3-6.6)	8,632	5% (5.2-5.4)
	Age 19-24	19,235	15% (15.1-15.5)	10,834	8% (8.1-8.4)
ADD/ADHD	Age 11-18	6,982	5% (4.4-4.6)	18,950	12% (11.4-11.8)
	Age 19-24	3,215	3% (2.5-2.6)	6,584	5% (4.9-5.2)
Bipolar Disorder	Age 11-18	1,013	1% (0.6-0.7)	952	1% (0.5-0.6)
	Age 19-24	3,109	3% (2.4-2.6)	2,229	2% (1.6-1.8)
Adjustment Disorder	Age 11-18	1,452	1% (0.9-1.0)	1,363	1% (0.8-0.9)
	Age 19-24	2,283	2% (1.7-1.9)	1,478	1% (1.1-1.2)
Conduct Disorder	Age 11-18	3,393	2% (2.1-2.3)	7,201	4% (4.3-4.5)
	Age 19-24	1,687	1% (1.3-1.4)	2,293	2% (1.7-1.8)
Personality Disorder	Age 11-18	698	1% (0.4-0.5)	692	0.4% (0.4-0.5)
	Age 19-24	2,259	2% (1.7-1.9)	1,576	1% (1.1-1.3)
Schizophrenia & Psychosis	Age 11-18	156	0.1% (0.1-0.1)	304	0.2% (0.2-0.2)
	Age 19-24	494	0.4% (0.4-0.4)	1,089	0.8% (0.8-0.9)
None	Age 11-18	120,972	78% (77-78)	116,985	72% (71-72)
	Age 19-24	68,596	55% (54-55)	90,887	70% (69-70)
Total	Age 11-18	154,825		163,287	
	Age 19-24	125,708		130,783	



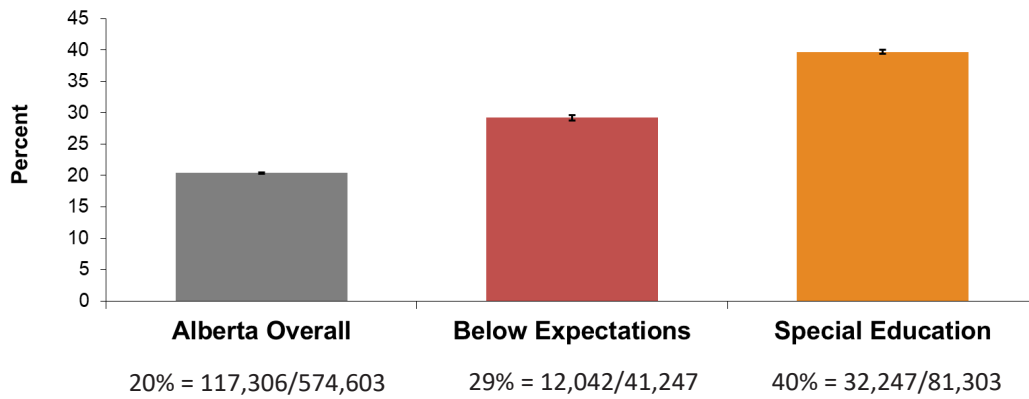


Figure 6. Proportion of Youth in School with a Mental Health Diagnostic Code with Educational Achievement Below Expectations or a Special Education Code

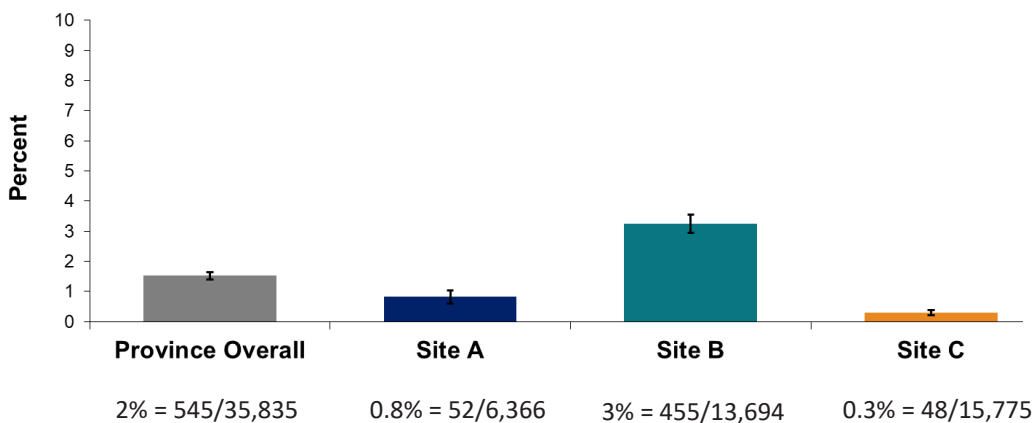


Figure 7. Proportion of Students in School Receiving English as a Second Language Service, by Community Site

Other beneficial collaborators for the integrated hubs may be disability services, income supports, and the justice system (Table 2). Across the province between 2005/06 and 2010/11, of youth aged 11 to 24 years with a mental health diagnostic code:

- 6% (95% CI: 6% - 6%) received disability supports from Assured Income for the Severely Handicapped (AISH), Family Support for Children with Disabilities (FSCD), or the Persons with Developmental Disabilities (PDD); a rate 7 times higher than youth without a mental health diagnostic code.
- 9% (95% CI: 9% - 9%) received Income Support; a rate 4.5 times higher than youth without a mental health diagnostic code.
- 13% (95% CI: 13%-13%) were charged with an offense during the study period and 11% (95% CI: 11% - 11%) were part of provincial corrections; a rate 2 times higher than youth without a mental health diagnostic code.

Table 2. Proportion^e of Youth with Indicators of Service Use, by Mental Health Diagnostic Code Status

	Mental Health Diagnosis Code	No Mental Health Diagnosis Code	Prevalence Ratio ^f
Disability Supports (AISH, PDD, FSCD)	6%	1%	7x
Income Support	9%	2%	4.5x
Justice (Offenses)	13%	6%	2x
Justice (Corrections)	11%	5%	2x
Substance Use ^g	17%	4%	4x
Alcohol Dependence ^g	7%	2%	4x
Intentional Self-Harm ^g	7%	1%	9x

Additional relevant life circumstances to consider when planning the integrated hubs may include substance use and self-harm. Not surprisingly, there was an association between receipt of a mental health diagnostic code, substance use, and self-harm. As shown in Table 2, youth with mental health diagnostic codes were:

- 4 times more likely to receive health services for alcohol dependence or for complications of substance use
- 9 times more likely to receive medical attention for intentional self-harm

The actual rate of substance use, alcohol dependence and self-harm behaviours is likely much higher as this only counts individuals who sought medical attention and received a diagnostic code. Communities can expect youth attending integrated service hubs to also be dealing with substance use and other severe symptoms associated with poor mental health.

Finally, there are several life circumstances that may be useful to be aware of when planning services for an integrated mental health hub. Pregnancy is common in youth in that age with mental health conditions, especially in older youth residing in low SES neighbourhoods (Figure 7):

- 45% (95% CI: 44% - 46%) of females aged 19-24 years with a mental health diagnostic code residing in low SES neighbourhoods experienced at least one pregnancy during the study period.
- 29% (95% CI: 29% - 30%) of older youth living in middle or high SES neighbourhood experienced at least one pregnancy during the study period.

These results suggest that reproductive health services could be useful, and that child care could be a barrier for youth, especially youth in low SES neighbourhoods.

^e The results presented here are statistically significant.

^f The prevalence ratio is the ratio of the proportions of youth using the support programs with vs without mental health diagnostic codes.

^g **Note:** shown here are the proportion of youth who received diagnostic codes for substance use, alcohol dependence or intentional self-harm after receiving medical treatment. The proportion of youth who use substances, have an alcohol addiction or engage in self-harm is likely much higher than these estimates.



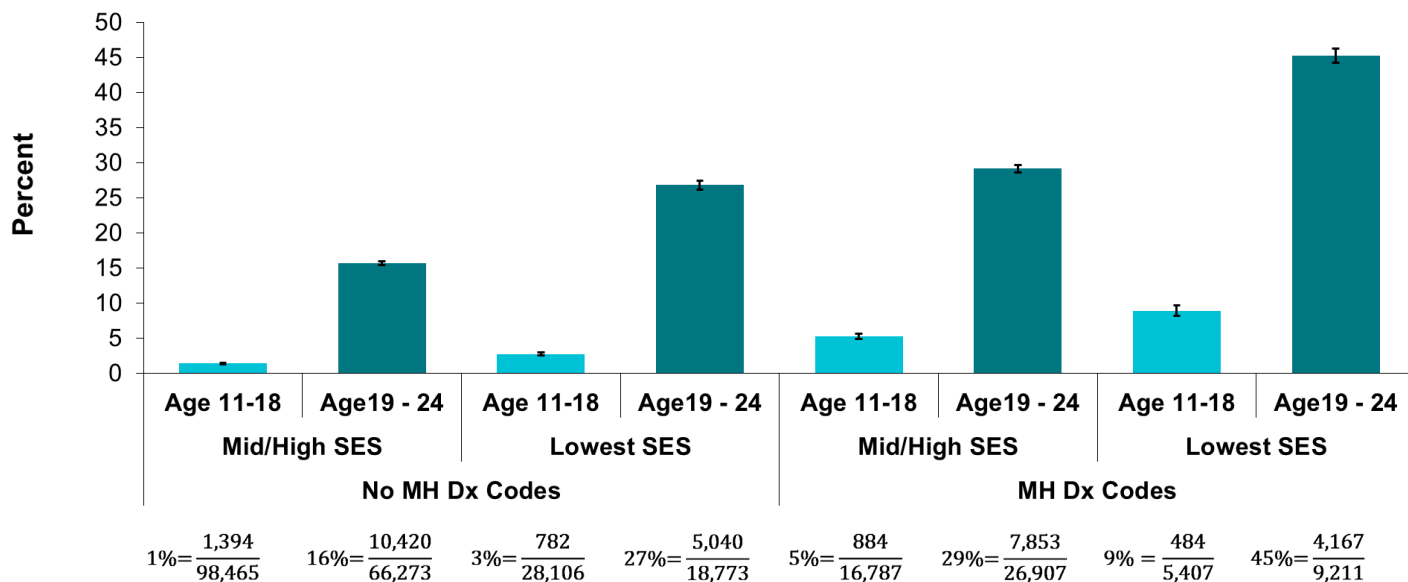


Figure 8. Proportion of Females who Experienced Pregnancy, by Age, SES of Neighbourhood, and Mental Health Diagnostic Code

SUMMARY

To help three community sites in Alberta explore the populations their proposed integrated hubs would serve, this report used receipt of a mental health diagnostic code in health administrative data as a proxy to describe youth aged 11-24 years in their communities. The proportion of youth who received diagnostic codes for a mental health condition was 20% overall, but highest (30%) in females aged 19-24 years. Youth who received a mental health diagnostic code were more likely to have also received services from a social program such as Income Support, to be involved in the criminal justice system, and to have indicators of problematic substance use and self-harm behaviours. The nature of the overlap among these services points to collaborations that may be useful when planning and developing integrated service hubs. Finally, reproductive health, pregnancy, and childcare may be issues integrated hubs consider as between 30% and 45% of older female youth with mental health diagnostic codes experienced pregnancy at least once during the study period.

APPENDIX A: DATA NOTES

This study used linked administrative data from the Child and Youth Data Lab (CYDL) Longitudinal Project, which combined data from six different ministries (Health, Community and Social Services, Children Services, Education, Advanced Education, and Justice and Solicitor General) between the 2005/06 to 2010/11 fiscal years. Data from Alberta Health included the Alberta Health Care Insurance Plan (AHCIP) registry and datasets submitted to Alberta Health with details on every hospital inpatient discharge, emergency room visits, outpatient clinic visit and physician office visit (physician claims). The hospital, emergency room and outpatient clinic data used here is what is ultimately included in CIHI's Discharge Abstract Database and National Ambulatory Care Reporting System. More information on the CYDL initiative, the datasets used and other analyses are on the PolicyWise website: <https://policywise.com/data/>

For these analyses, individuals were included if they were between the ages of 11 and 24 years in the 2005/06 fiscal year and registered in the AHCIP during the entire study period (2005/06 to 2010/11).

The Health data includes ICD-10-CA diagnosis codes recorded in patient charts when from hospital, emergency department, and outpatient clinic visits, and ICD-9-CA diagnosis codes recorded by physicians when they bill Alberta Health when they provide care to patients in their offices. These diagnostic codes were used to determine who might have sought medical attention for mental health conditions, substance use, alcohol dependence, pregnancy or for self-harm activities.

Because the key outcomes for this analysis are health-related, the population was restricted to those who were registered with the Alberta Health Care Insurance Plan during the entire study period. As the service hubs would be for youth between the ages of 11-24 years, analyses were restricted to youth between those ages in 2005/06. In this analysis, socio-economic status (SES) refers to the SES of the individual's neighbourhood of residence, as measured by the Pampalon Index².

There are limitations to this analysis that should be kept in mind. Receiving a diagnostic code for a mental health condition does not necessarily mean that they have that particular diagnosis as individuals may receive different diagnostic codes from different physicians as the proper diagnosis is being sought. As well, this method only counts those individuals who seek medical attention for a particular condition during the time period of the study; there will certainly be many individuals who have depression, for instance, or have alcohol dependence or perform self-harm behaviours who have not sought medical attention during the time period. Therefore we are likely underestimating the true proportion of individuals with mental health conditions or other health concerns. This would be especially true in populations that are less likely to seek medical attention.

Study population: The full CYDL data set included individuals with a date of birth between April 1, 1980 and March 31, 2011 and who received services from one of the programs in the study or were registered in the Alberta Health Care Insurance Plan between April 1, 2005 and March 31, 2011. The youngest study participants were those born in the last study year. The oldest study participants were 25 years old at the end of the first study year and consequently 30 years old at the end of the last study year.

Cross-ministry analyses included only study participants who were linked across the relevant programs. This means that not all participants in the project were represented in every analysis. As well, only participants with a value for a given indicator were included in analyses involving that indicator (i.e., missing values were excluded).

Variables

All variables used in the analysis were derived from the CYDL administrative data.

Demographics

Age, sex, and postal code (translated into Statistics Canada dissemination areas) were provided for each individual by each participating program. In the case of discrepancies between programs, the most common value for an indicator was chosen. In the event of two or more most common values, the value for the indicator was chosen randomly from the most common values. Socio-economic status (SES) captures the social and material environments in which individuals lived. For each year of the study period, an individual was assigned a dissemination area level socio-economic status via an index based on Statistics Canada 2006 Census data. Six indicators were included in the index: percent without a high school diploma, the employment rate, average income, percent of single families, percent of persons living alone, and percent of persons separated, divorced, or widowed. Socio-economic status values fell into five quintiles of 2006 census.



Health Variables

The **Alberta Health Care Registry** (also known as the Alberta Health Care Insurance Plan) includes all study participants (aged 0 to 30) who are eligible to receive insured hospital and physician services. Mental health conditions were identified by the presence or absence of mental health diagnostic codes (two or more of ICD-9: 290-309.9, 311-314.9, 316, or a single ICD-10CA: F00-F06.9, F09-F69, F84-F99, G31.2, G44.2, R41.0) in Alberta Health's databases (Inpatient—Discharge Abstract Database, Ambulatory Care, and Practitioner Payments). Only Albertans who were registered with the Alberta Health Care Insurance Plan for the full fiscal year were included. Mental health diagnostic coders were analyzed for the following conditions: anxiety, depression, bipolar disorder, attention-deficit disorder, adjustment disorder, conduct disorder, personality disorder, and schizophrenia/ other psychoses. Conditions were not mutually exclusive; an individual could have a diagnostic code in more than one category.

When an individual receives medical care in a hospital, clinic, emergency room or physician office visit, a code is attached to the record that indicates what diagnoses the physician gave or suspects in a particular encounter. These codes (called International Classification of Disease, 9th Revision [ICD-9] and International Classification of Disease, 10th Revision [ICD-10]) are based on the World Health Organization, are standard across Canada and are comprehensive. While there are strengths and limitations, it is common for researchers to utilize these codes to determine what conditions individuals in a research study might have. This study utilized diagnostic codes to create indicators of pregnancy, delivery, visible homelessness, and other health-related variables. Table 3 lists the ICD-9 and ICD-10 codes utilized to define each condition. Indicators of trauma and abuse were based on the Canadian Institute for Health Information definitions.

While receiving a diagnostic code for a particular condition suggests that the individual may have that condition, it is not guaranteed as individuals can receive various potential diagnoses until the true condition is determined. A diagnostic code also does not indicate a visible or distinct diagnostic event. Diagnosis codes are only reported when an individual seeks medical attention – it is likely that there are many individuals who have a particular condition who have not sought medical attention during the time period, or were diagnosed prior to the start of the study period. This is especially true for mental health conditions, substance use, alcohol dependence, and visible homelessness. Despite these limitations, administrative health data is a highly useful source of information to compare trends in health care and service utilization between different groups.

Table 3. ICD-9 and ICD-10 Codes Utilized

	ICD-9 Codes Utilized (Physician Claims Dataset)	ICD-10 Codes Utilized (Hospital Inpatient Stays, Outpatient Clinics, and Emergency Room Visits)
Pregnancy	<ul style="list-style-type: none"> • 630-639 Pregnancy with abortive outcome • 650-659 Normal delivery, and other indications for care in pregnancy, labour and delivery • 660-669 Complications occurring mainly in the course of labour and delivery • V22-V24, V27-V28 Persons encounter health services in circumstances related to reproduction and development • V30-V39 Healthy liveborn infants according to type of birth • V81 Persons without reported diagnosis encountered during examination and investigation of individuals and populations 	<ul style="list-style-type: none"> • O03 Spontaneous abortion • O04 Complications following (induced) termination of pregnancy • O05 Other abortion • O6 Complications of labor and delivery • O32 Maternal care for malpresentation of fetus • Z33 Pregnant State • Z34 Encounter for supervision of normal pregnancy • Z35 Supervision of high-risk pregnancy • Z36 Encounter for antenatal screening of mother • Z37 Outcome of delivery • Z38 Liveborn infants according to place of birth and type of delivery
Substance Use	<ul style="list-style-type: none"> • 291 Alcoholic psychoses • 292 Drug psychoses • 303 Alcohol dependence syndrome • 304 Drug dependence • 305 Nondependent abuse of drugs 	<ul style="list-style-type: none"> • X40-49 Accidental poisoning by and exposure to noxious substances • T36-T50 Poisoning by drugs and biological substances • F10-F19 Mental, behavioural, and neurodevelopment disorders due to substance use • F55 Abuse of non-dependence-producing substances • Z50.2 Alcohol rehabilitation • Z50.3 Drug rehabilitation

Table 3. ICD-9 and ICD-10 Codes Utilized (Cont'd)

Alcohol Use	<ul style="list-style-type: none"> • 291 Alcoholic psychoses • 303 Alcohol dependence syndrome • 305 Nondependent abuse of drugs 	<ul style="list-style-type: none"> • F10 Mental and behavioural disorders due to use of alcohol • G31.2 Degeneration of nervous system due to alcohol
Schizophrenia	<ul style="list-style-type: none"> • 295 Schizophrenic psychoses 	<ul style="list-style-type: none"> • F20 Schizophrenia • F21 Schizotypal disorder • F23.2 Acute schizophrenia-like psychotic disorder • F25 Schizoaffective disorders
Personality Disorder	<ul style="list-style-type: none"> • 301 Personality disorders 	<ul style="list-style-type: none"> • F34.0 Cyclothymia • F60 Specific personality disorders • F61 Mixed and other personality disorders • F62 Enduring personality changes, not attributable to brain damage and disease • F68.1 Intentional production or feigning of symptoms or disabilities • F68.8 Other specified disorders of adult personality and behaviour • F69 Unspecified disorder of adult personality and behavior
ADHD	<ul style="list-style-type: none"> • 314 Hyperkinetic syndrome of childhood 	<ul style="list-style-type: none"> • F90 Attention-deficit hyperactivity disorders
Adjustment	<ul style="list-style-type: none"> • 309 Adjustment reaction 	<ul style="list-style-type: none"> • F43 Reaction to severe stress, and adjustment disorders
Bipolar	<ul style="list-style-type: none"> • 296 Affective psychoses 	<ul style="list-style-type: none"> • F30 Manic episode • F31 Bipolar disorder
Conduct	<ul style="list-style-type: none"> • 312 Disturbance of conduct not elsewhere classified 	<ul style="list-style-type: none"> • F91 (expect F91.3) Conduct disorders
Anxiety	<ul style="list-style-type: none"> • 300.0 Anxiety states • 300.2 Phobic state • 300.3 Obsessive-compulsive disorders 	<ul style="list-style-type: none"> • F40 Phobic anxiety disorders • F41 Anxiety disorders • F42 Obsessive-compulsive disorder
Depression	<ul style="list-style-type: none"> • 296.1-296.8 Affective psychoses • 300.4 Neurotic depression • 311 Depressive disorder, not elsewhere classified 	<ul style="list-style-type: none"> • F32 Major depressive disorder, single episode • F33 Recurrent depressive disorder • F34.1 Dysthymia • F38.0 Other single mood [affective] disorders • F38.1 Other recurrent mood [affective] disorders • F41.2 Mixed anxiety and depressive disorder • F53.0 Mild mental and behavioural disorders associated with the puerperium, not elsewhere classified • F93 Emotional disorders with onset specific to childhood
Self-Harm		<ul style="list-style-type: none"> • T39-T43, T50.9 Poisoning by drugs, medicaments and biological substances • T58 Toxic effect of carbon monoxide • X40-X47 Accidental poisoning by and exposure to noxious substances • X60-X84 Intentional self-harm • Y10, Y11, Y12, Y16, Y17 Poisoning by and exposure to noxious substances, undetermined intent • T39 Poisoning by nonopioid analgesics, antipyretics and antirheumatics • T40 Poisoning by narcotics and psychodysleptics [hallucinogens] • T42.1, T42.3, T42.7 Poisoning by antiepileptic, sedative-hypnotic and antiparkinsonism drugs • T43 Poisoning by psychotropic drugs, not elsewhere classified



Provincial Disability Support Programs

Variables were created that indicated whether individuals received supports from Income Support, PDD and AISH, and FSCD. The Family Support for Children with Disabilities (FSCD) program provides a wide range of child- and family- centered supports and services to children and youth (aged 0 to 17 years) with a disability. Income Support provides financial assistance to individuals (aged 18 years and older) who are unable to meet their basic needs. Income Support Learners provides assistance to individuals who are in training, including basic costs to maintain their household as well as supplemental, health, and training benefits. The Persons with Developmental Disabilities (PDD) program funds a range of programs and services to help adult Albertans (aged 18 years and older) with developmental disabilities be part of their communities and live independently. The Assured Income for the Severely Handicapped (AISH) program provides financial and health-related assistance to adult Albertans (aged 18 years and older) who have a severe handicap that is permanent and substantially limits ability to earn a living.

Education Variables

Analyses utilizing education variables were only done in individuals who were part of the educational system during the study period. As this study included people aged 11 to 19 years, many individuals were excluded from these particular analyses. Receipt of special education was determined by whether the youth was assigned a special education code who received special education programming services as a student or child (aged 2.5 to 19 years) in Alberta Education's administrative data. Educational achievement was computed by Alberta Education using age, grade, school type, special education codes, provincial achievement test scores (grades 3, 6, 9), number of high school credits earned, number of higher level courses taken, average grade in higher level courses, possession of an Alberta Education certificate or diploma, and Alexander Rutherford scholarship eligibility. Educational achievement was categorized as above, meeting, or below expectations for a student's age and grade. An educational achievement rating was not available for youth in 'other' schools (accredited post-secondary institutions offering high school courses for credit to adults; most youth in these schools were between 18 and 20 years), for home-educated high school youth with no credits, and for students in grades lower than 3.

Alberta Education defines English as a Second Language (ESL) students as, "Children/students who require English as a Second Language program planning and instructional supports to achieve grade level learning expectations and reach their full potential. Students receiving ESL instruction must demonstrate challenges in English competencies, including reading, writing, speaking, and/or comprehension. In Alberta, ESL learners include students who have immigrated from countries outside of Canada. In addition, they include students who are Canadian-born, but whose first language is not English, such as students of Indigenous or Francophone descent. ESL use was defined by at least one year of ESL designation.

Justice Variables

Individuals with criminal offences include those (aged 12 years or older) charged with offences under various federal statutes. Young adults with corrections involvement have appeared before the Court or a Justice of the Peace for an offence charge and have been remanded in custody or placed under pre-trial supervision in the community awaiting further court dates, or have been found guilty and sentenced to a community disposition (i.e. Fine, Probation, Community Service Work, Deferred Custody) and/or custody (in which the sentence is served in a custodial facility). Youth with corrections involvement have appeared before the Court or a Justice of the Peace for an offence charge and have been remanded in custody or placed under pre-trial supervision in the community awaiting further court dates, or have been found guilty and sentenced to a community disposition (i.e. Fine, Probation, Community Service Work) and/or custody (in which the sentence is served in a young offender facility).

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THE CHILD AND YOUTH DATA LABORATORY

The **Child and Youth Data Laboratory's** (CYDL's) Longitudinal Project (Experiences of Albertan Children and Youth over Time, 2005/06 to 2009/10/11) is a joint initiative between PolicyWise for Children & Families and participating ministries in the Government of Alberta. The mandate of the CYDL is to link and analyze administrative data from Government ministries, to provide evidence for policy and program development.

The CYDL is managed by **PolicyWise for Children & Families**. PolicyWise is a not-for-profit organization whose mission is to develop and integrate evidence to inform, identify and promote effective public policy and service delivery to improve the well-being of children, families and communities in Alberta, Canada and internationally.

THIS PROJECT

The CYDL Longitudinal Project focuses on understanding the experiences of Albertan children and youth as they develop. The focus is service use within and across ministries, as it is related to key indicators and to the passage of time. Studying experiences over several years of development adds a valuable level of richness to an already ground-breaking initiative, providing detailed insight into the factors that help to shape our children and youth as they develop.

SUGGESTED CITATION

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OUR PARTNERS

This project was carried out in partnership with seven ministries of the Government of Alberta. Each ministry collaborated extensively with the CYDL on this project, and their dedication to the project is gratefully acknowledged:

Children's Services
Advanced Education
Justice and Solicitor General
Indigenous Relations

Community and Social Services
Health
Education

PREPARED BY

Allison N. Scott, PhD; Naomi Parker, MBA; Valeri Salt, MA; Kyla Brown, MSc; Carley Piatt, PhD; Cathie Scott, PhD; and Xinjie Cui, PhD

CONTACT US

(780) 944-8630
info@policywise.com
www.policywise.com

This study is based in part on data provided by the Government of Alberta. The interpretation and conclusions contained herein are those of the researchers and do not necessarily represent the views of the Government of Alberta. The Government of Alberta does not express any opinion in relation to this study.