

# Child and Youth Mental Health Service Records

## The Feasibility of Data Linkage



Interactive Workshop  
9 November, 2010  
Final Report

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## Introduction

- Two-part project funded by the CIHR
- **Part 1: This report!**  
To prepare a report to assess the feasibility of linking CAFAS in Ontario with ICES province-wide health care administrative records over time

A key outcome we are investigating is suicide related behavior (SRB) (1-2): non-fatal self poisoning or injurious behaviour, varied intent

- **Part 2: This workshop!**  
To engage decision-makers in a discussion about questions of mutual interest and future directions



## Rationale

- SRB peaks in adolescence (3)
- Related to suicide, 2nd leading cause of death 15-24 yrs in Canada, higher rates in males (4-9)
- Hospital presentation for SRB strong risk factor for suicide, especially in following year (10-11)
- Evidence-base evolving, detection and treatment of mental illness key, integrative 'transition' interventions promising (12-13)
- Provincial and federal reports underscore need for mental health service integration (14-17)



## Unique Opportunities for Data Linkage In Ontario

### CAFAS in Ontario

#### Child and Adolescent Functional Assessment Scale (18)

- Age 6-17 years (FY 08/09)
- Behavioral descriptions by knowledgeable clinician
  - 4 levels of impairment
- Across 8 domains, e.g. SRB impairment

### ICES Data Holdings

#### Institute for Clinical Evaluative Sciences

- Age 6-17 years (FY 08/09)
- Near complete longitudinal data coverage
  - Large population base on Mental Health contact(s):
    - Medical outpatient
    - Emergency department (ED) and inpatient stays, including SRB 'diagnosis'

### Individual Data Linkage

#### *How?*

- Data sharing agreement between data custodian(s) and ICES
  - Probabilistic linkage

#### **Questions that could be addressed:**

How do initial functioning ratings relate to future outpatient or hospital ED presentations/inpatient stays?  
What patterns are associated with repeat presentations?

# Comparison of ICES and CAFAS Samples in FY 08/09

In Ontario, population of 6-17 year olds during FY 08/09 almost 2 million

## ICES data holdings

- 205,948 or almost 10% had at least one mental health medical outpatient contact
- 13,637 or about 1% were seen in the emergency department (ED) for any mental health reason

## CAFAS in Ontario

- 18,132 or about 1% of 6-17 year olds were active in participating CAFAS agencies

## INTERPRETATION

- It is likely that the proportion of CAFAS users (1%) is underestimated. (See Appendix, Limitations). Also does not capture all Child and Youth Mental Health (CYMH) contacts
- Although 10% seen in outpatient medical settings for mental health, may or may not be overlap with CYMH contacts. Can't determine this without linking data
- Overall, proportion of children and youth seen, and within specific settings/providers unclear

Mental Health Contact	ICES data holdings			
	Girls		Boys	
	n	%	n	%
1: Outpatient medical only	79,773	90.5%	116,354	94.6%
2: ED only	2,599	2.9%	2,063	1.7%
3: Inpatient only	105	0.1%	75	0.1%
4: Outpatient medical + ED	3,302	3.7%	2,738	2.2%
5: Outpatient medical + Inpatient	638	0.7%	506	0.4%
6: ED + Inpatient	183	0.2%	115	0.1%
7: Outpatient medical + Inpatient + ED	1,529	1.7%	1,108	0.9%
<b>Total (n=211, 088)</b>	<b>88,129</b>	<b>100%</b>	<b>122,959</b>	<b>100.0%</b>



## By Suicide-Related Behavior

- Among children and youth who were seen in ED/inpatient settings, 12.6% presented with SRB
- About 20.5% of CAFAS users demonstrated SRB impairments (14.8% with severe SRB impairments)

### INTERPRETATION

**Question: Are the same children and youth presenting with SRB in different settings?**

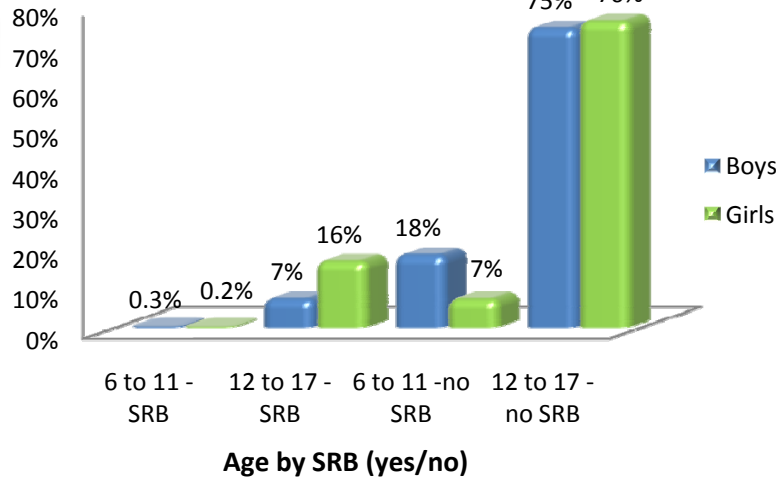
With linked data, we could determine:

- Whether (and which) CAFAS users overlap with ED/Inpatient groups
- The influence of CAFAS user impairment scores and contact(s) on ED/Inpatient use or vice versa
  - e.g., those seen in CAFAS participating settings may have fewer such hospital contacts over time

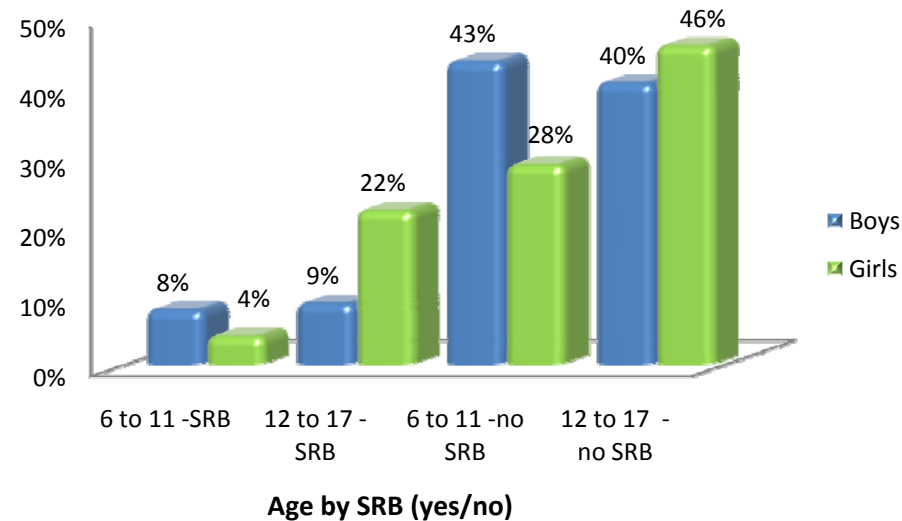
# Age and Sex Differences in Suicide-Related Behaviors (SRB)

Age and Sex distributions among CAFAS user organizations differ from those seen in ED/inpatient settings.

**ED/Inpatient Suicide-Related Behaviour (SRB)**



**CAFAS - SRB Impairment**



- Children aged 12-17 are seen more frequently in ED/inpatient settings for SRB and other mental health reasons
- In ED/inpatient setting, older girls more likely to have SRB than older boys
- In CAFAS user organizations, among girls SRB impairment also more common in older girls
- But, younger boys seem more likely to have SRB impairment than younger girls
- Among boys, % SRB impairment (and % with other impairments) varies little with age

## Age and Sex Differences in Suicide-Related Behaviors (SRB)

### INTERPRETATION

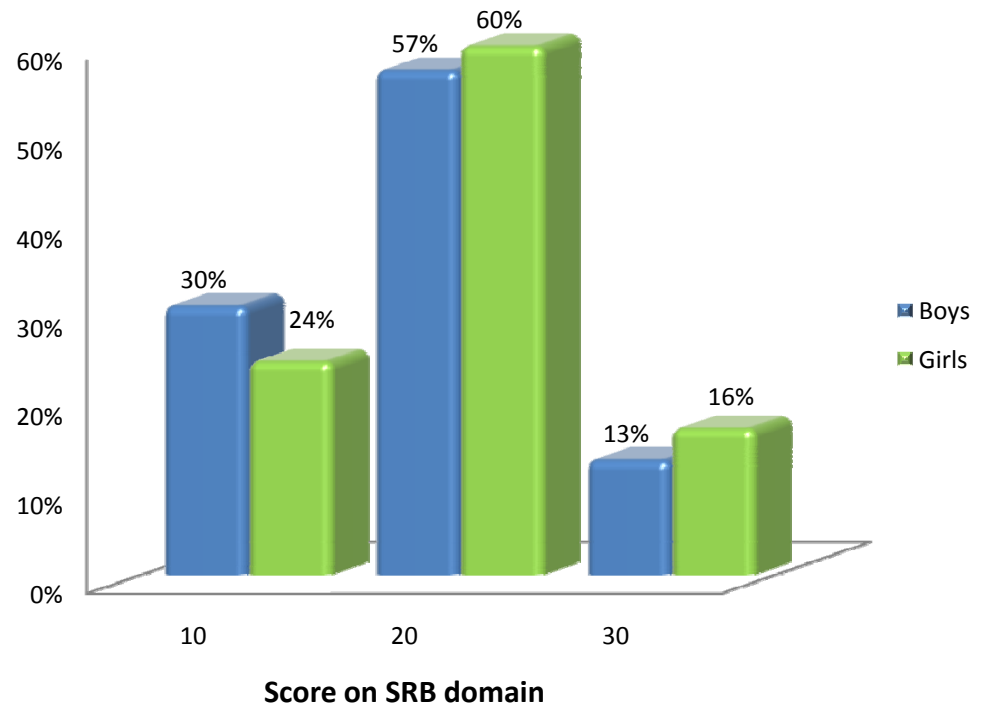
- Finding that SRB more likely among teenage girls than boys consistent with population-based surveys including those with, without SRB (3,19)
- In clinical settings, children with SRB may represent more suicidal subset than captured in population-based surveys
  - In Child Adolescent Self-Harm in Europe (CASE) study in adolescents, wish to die strongest predictor of health service use following most recent episode of SRB in boys and girls (20)



## CAFAS SRB Impairment Scores

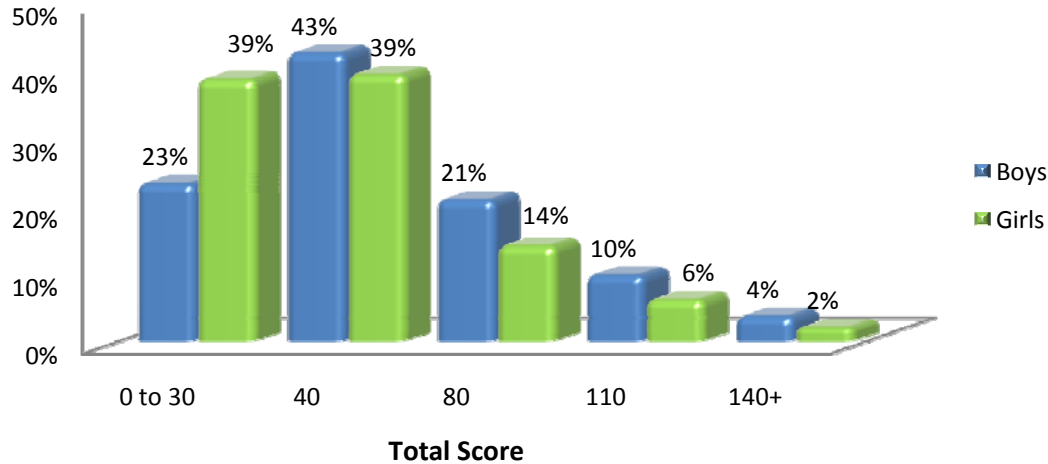
- Among those with SRB impairment, most have a score of 20 on the SRB domain (moderate impairment)
- Slightly more girls than boys have a score of 20 as well as a score of 30 (severe impairment)

CAFAS - SRB Impairment Scores



## Total CAFAS Scores by Sex (with and without SRB)

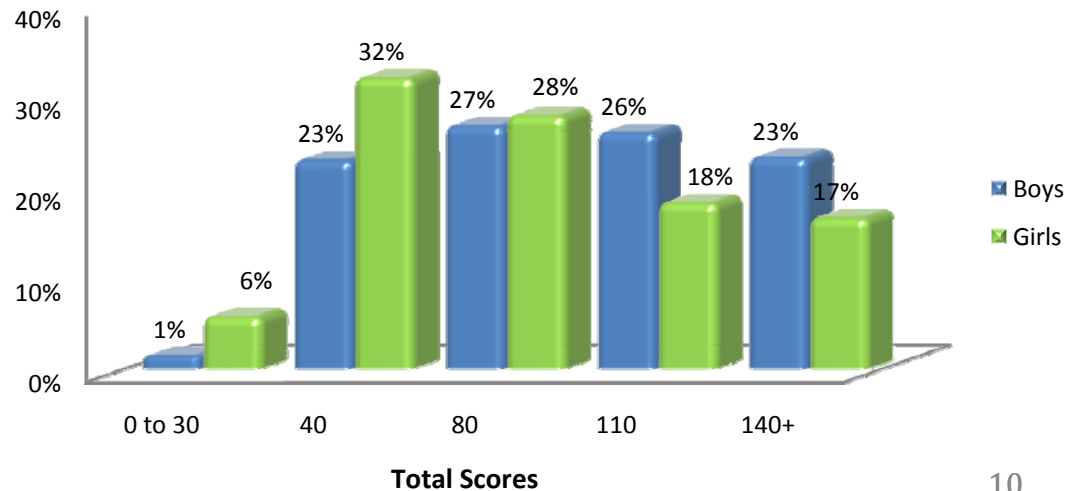
### CAFAS Total Scores - No SRB Impairment



- Not surprisingly, those with SRB impairment more likely to have higher total scores than those without

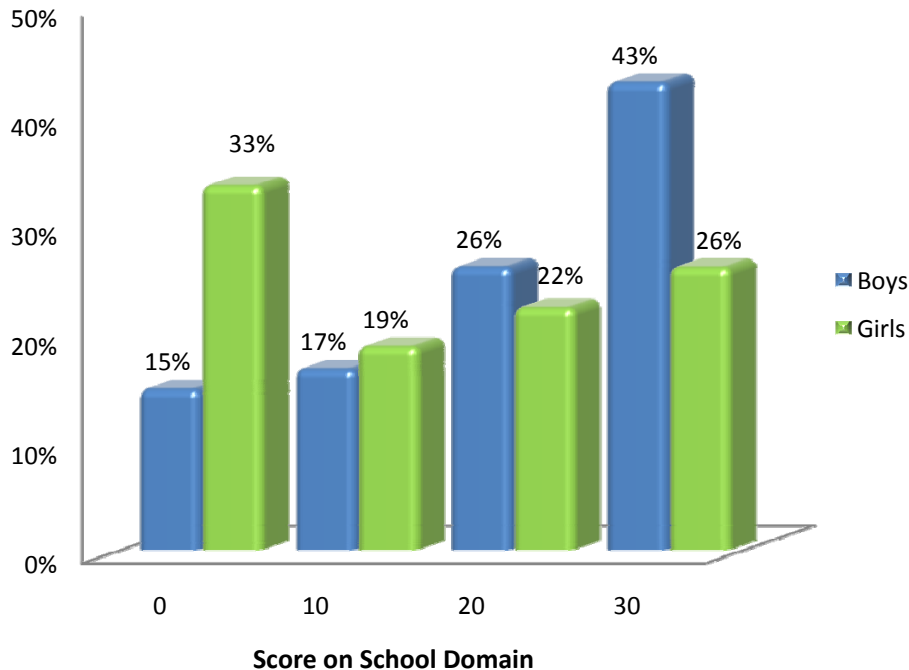
- Among those with SRB impairments, proportion of boys with higher total scores (110 or 140+) is greater than that in girls

### CAFAS Total Scores - With SRB Impairment



## School/Work Impairment Score by Sex (with SRB)

**CAFAS School/Work Impairment Score  
- Among SRB**



- The domain where boys seem to differ most from girls is the school/work impairment domain

Among those with SRB impairment, in the school domain:

- 43% of the boys had severe impairment (score of 30) than 26% of the girls
- Twice as many girls had none/minimal impairment than boys (33 vs. 15%)

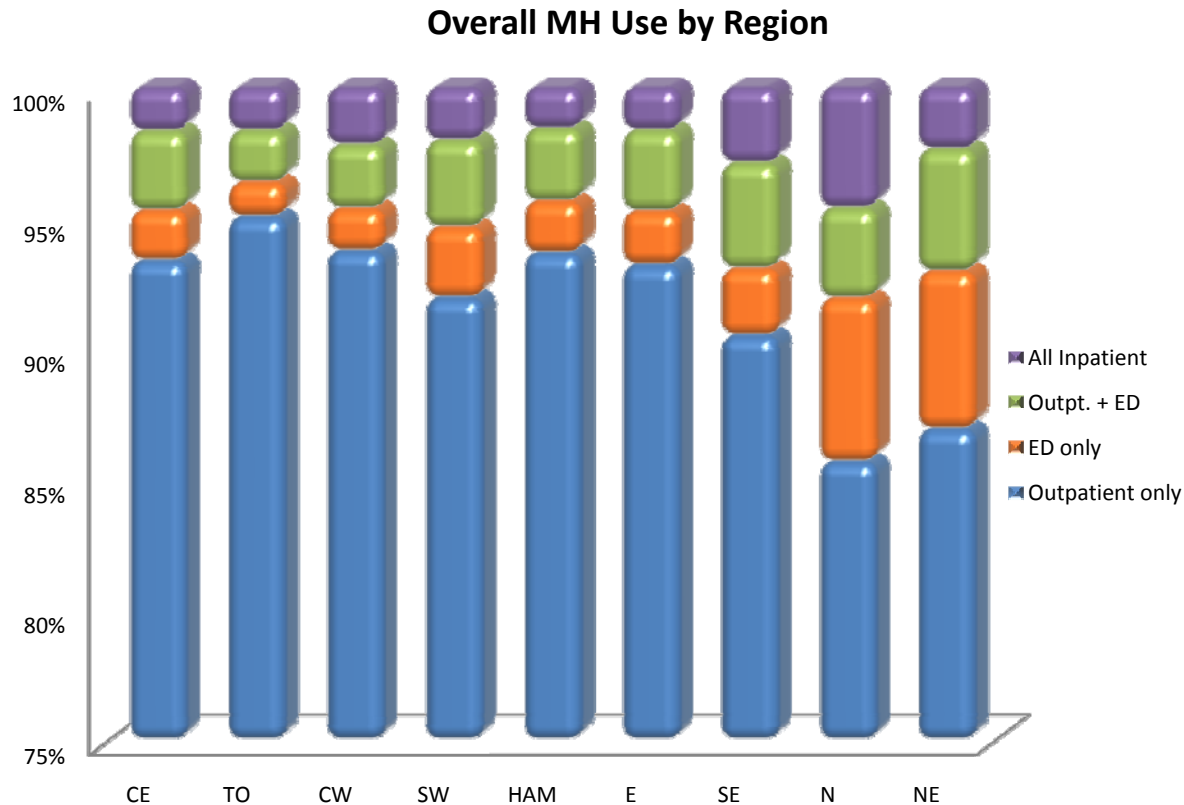


## Total and Domain-specific CAFAS Scores by Sex

### INTERPRETATION

- Among CAFAS user organizations, boys tend to have higher total scores, and within each domain, score similar or higher than girls
  - Girls have slightly higher SRB impairment scores
- Raises question as to whether girls with SRB were better able to access (and benefit from) more specialized mental health care as they age (than the boys) through increased ED/inpatient mental health contact
- In CASE study, higher proportion of boys than girls (18.0 vs. 10.5%) reported presenting to hospital subsequent to their most recent SRB episode (21)
  - Yet in Ontario, SRB ascertainment in ED higher in girls than boys (22)
- More effort maybe necessary to help boys access more specialized mental health care given their SRB may not always be identified
  - Concern is without more specialized mental health care, boys' functioning may deteriorate placing them at greater risk for suicide
  - However, we present cross-sectional picture, so boys 'at entry' in CAFAS user participating organizations may have improved by 'exit' (i.e., did not need more specialized care and present to ED/inpatient settings for more specialized care)
- At present we cannot examine sex differences in trajectories of care and ED/inpatient outcomes, such as SRB, without linking data sources

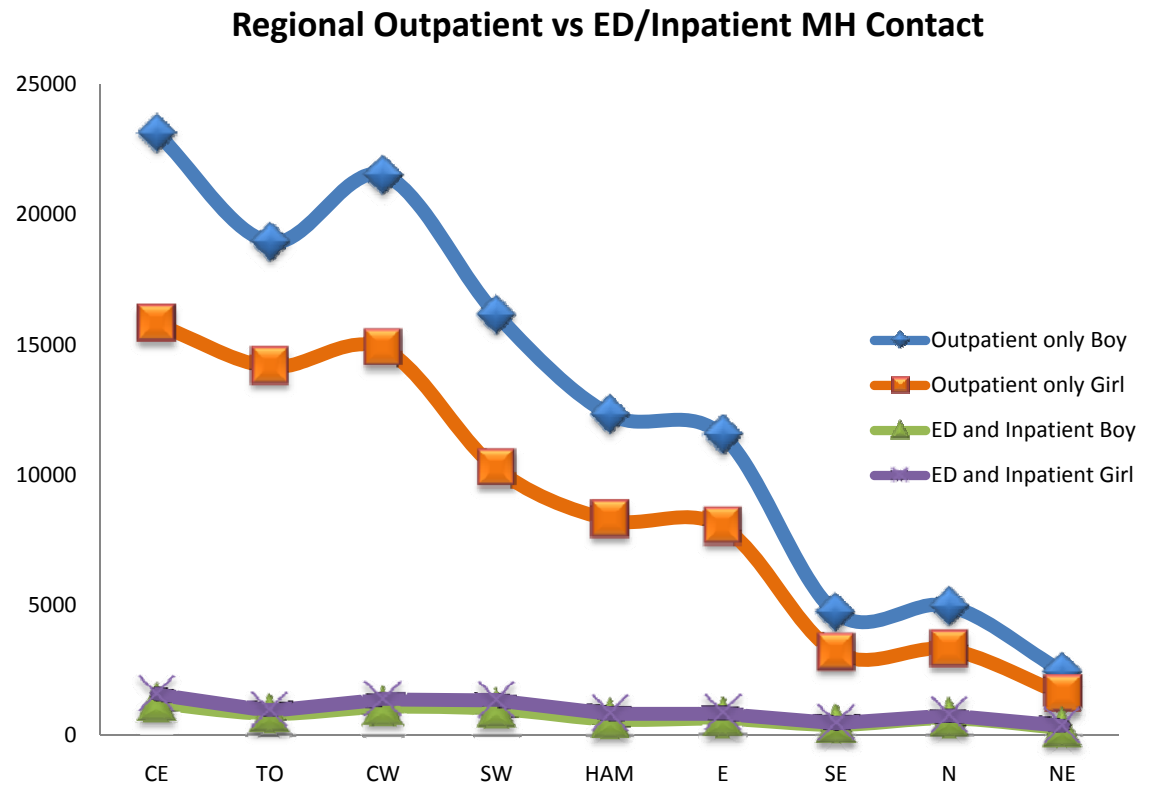
## Overall Mental Health (including SRB) contact by MCYS Region



- In all regions, outpatient medical MH care alone (blue bar) more common than emergency and/or inpatient care
- However, pattern not as strong in the North and NE

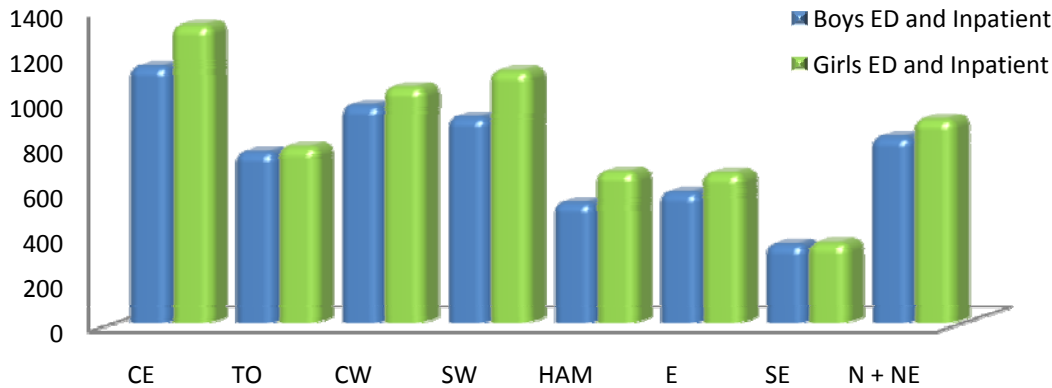
## Outpatient vs. ED and/or Inpatient contact by Region, by Sex

- While outpatient medical MH care alone was higher for boys than girls in all regions
- As in previous exhibit, pattern of more ED and/or inpatient use in North and NE



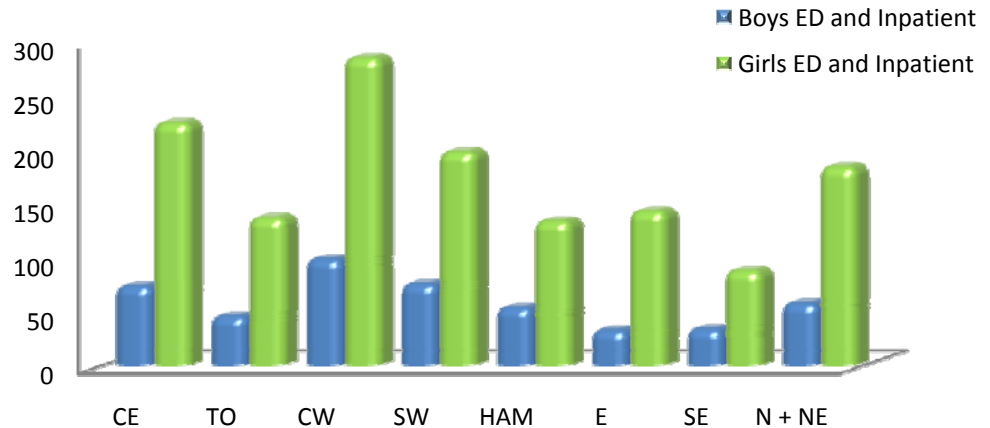
# ED and/or Inpatient contact by Region, By Sex (with and without SRB)

## ED and Inpatient Contact - No SRB Impairment



- In the North and NE regions combined, girls tend to use ED/inpatient resources more than boys

## ED and Inpatient Contact - With SRB Impairment



- This is particularly true among those with SRB related impairments

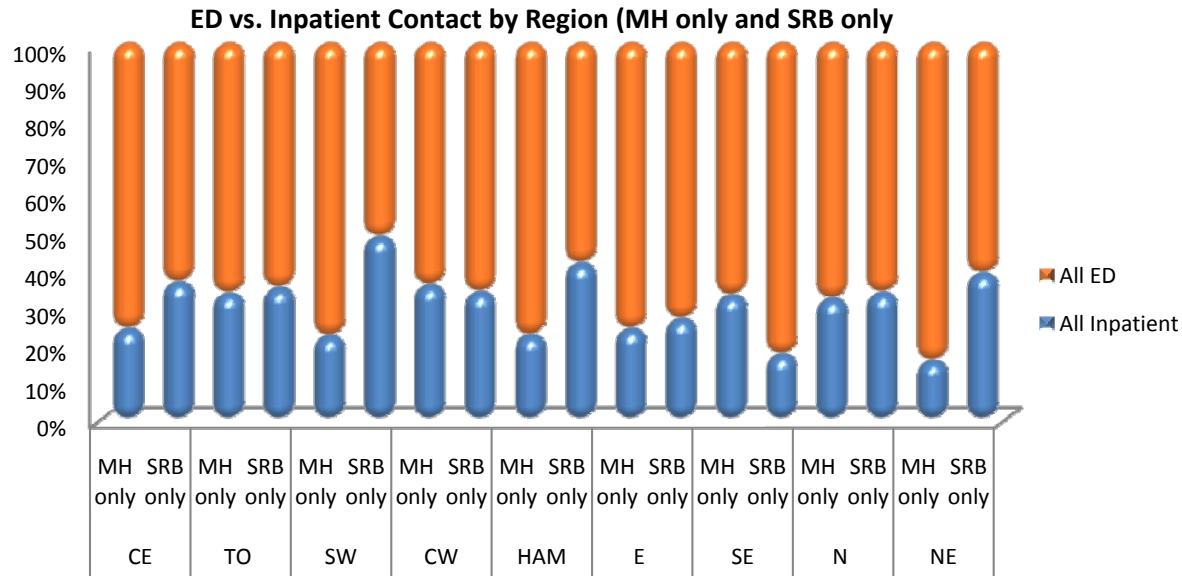


## Outpatient, ED, and Inpatient Regional Analysis by Age and Sex

### INTERPRETATION

- Regional variations in types of mental health service use may reflect differences in the availability of these types of mental health resources within regions
- If girls with SRB benefit from accessing ED/inpatient care, boys living in these regions may be particularly disadvantaged
  - It should be noted, however, that regions were defined by where the services were received as opposed to the residence of the clients
- It is not possible to examine the potential for such regional differences in longitudinal patterns of care for boys and girls without linked data

## ED vs. Inpatient contact (MH only and SRB only) by Region



- Among those who used ED/inpatient care, most contacts were for reasons other than SRB (87.4 vs. 12.6%)
- However, among those with SRB (bars on right) admission appeared more likely (35.7%) compared to those with (bars on left) MH only (27.4%)
- This was more apparent in some regions (e.g., SW) but not in others (e.g., SE)
- Regional patterns did not differ greatly in boys and girls except in Toronto where boys seemed more likely to be admitted with SRB (47.8%) than girls (30.7%)

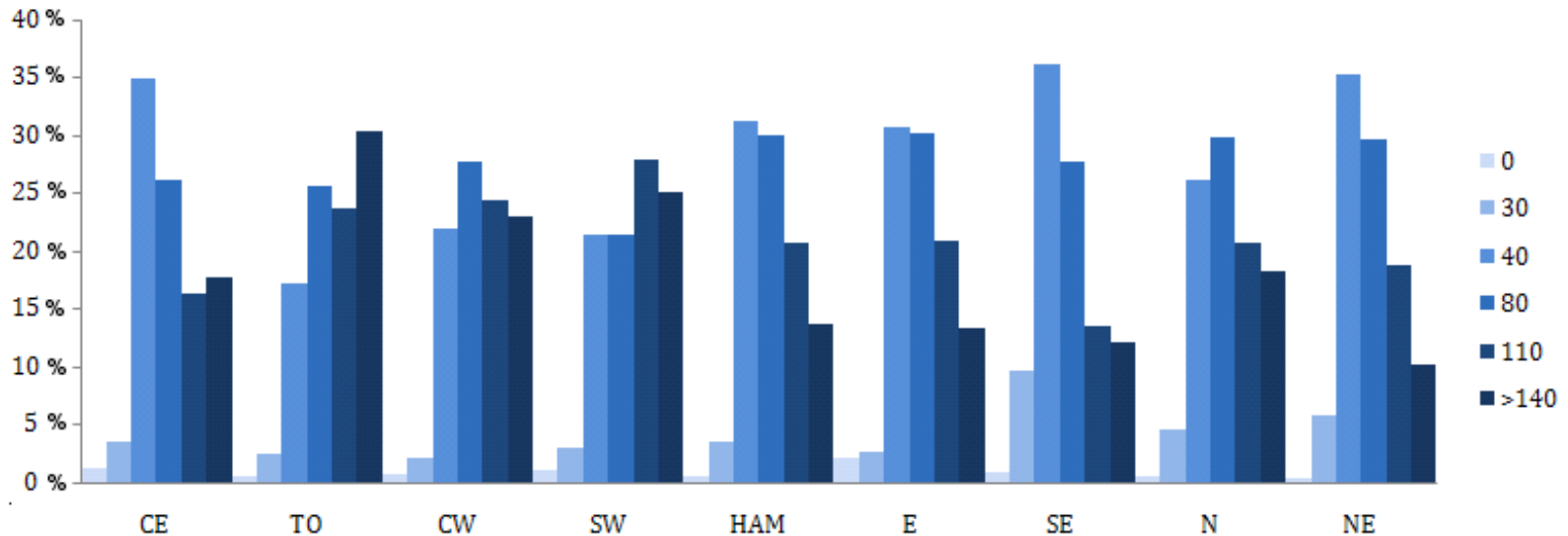
## CAFAS Severity Scores by Region

- Overall, the proportion of CAFAS users with a total score of 140 or more was highest in Toronto (>30%). Ontario: 18.2%
  - In Toronto, the proportion with a CAFAS total score of 140 was slightly higher in boys than girls (4.9 vs. 3.6%)

### INTERPRETATION

- Patterns may reflect differences in the severity, attributions, or detection of mental health problems, and/or outpatient mental health resources between regions.

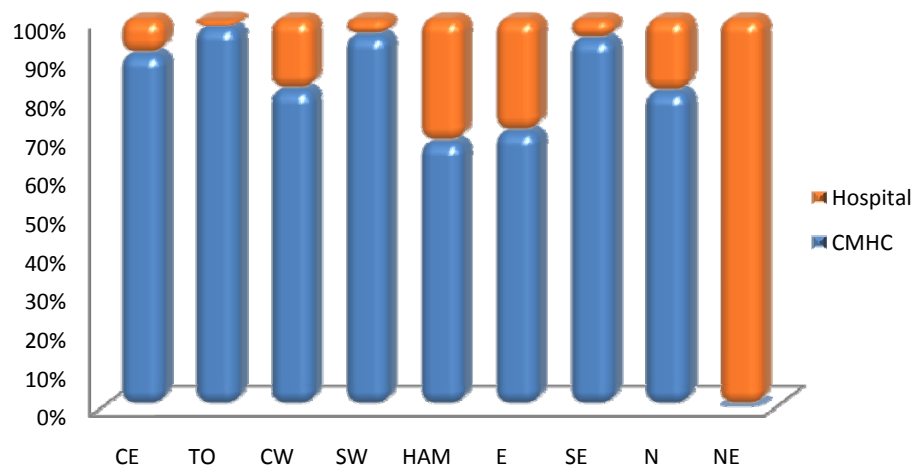
CAFAS Severity Scores by Region



## CAFAS User Organizations: CMHC vs. Hospital-based mental health clinics by Region

- Recall among ED/inpatient users with SRB, admission in Ontario was **35.7%**
- In SW (SRB admission 48.5%), in SW CAFAS user organizations
  - 95.8% seen in CMHC settings
- In SE (SRB admission 17.2%), in SE CAFAS user organizations:
  - 94.9% seen in CMHC settings

CAFAS User Organizations: CMHC vs. Hospital-Based mental health clinics by Region



### INTERPRETATION

- Nature of CAFAS user organizations may influence SRB admission within a region
  - In SW, user organizations may serve more severe population
    - Total CAFAS score of 140 or more was 25.1% in SW vs. 18.2% in Ontario
- Caution needed in interpreting CAFAS regional results as most, but not all participating agencies within a region submitted data in FY 2008



## Regional Analysis

- Overall, it seems likely that a continuum of needs-based services and supports responsive to varying levels of need is necessary within regions (14)
- Among those who present to hospital with SRB in a specific region, mental health service use (inpatient and outpatient) may protect against future SRB hospital presentations (23,24)
- Linking CAFAS to ICES data would provide a more complete picture about the type of care that is received before/after a hospital presentation for SRB (or other reasons), in relation to repeat presentations within regions

## Opportunities

Two key areas for further inquiry:

- Sex differences in CAFAS total scores and in SRB hospital presentations
- Regional variations in SRB hospital presentations for SRB

Questions:

- Given known sex differences in fatal and non-fatal SRB during the transition from childhood to adolescence:
  - Are boys who receive outpatient mental health care being prevented from hospital presentations for SRB/fatal SRB?
  - Are girls accessing more specialized services than boys (through hospital SRB presentations) and therefore being prevented from more serious/fatal SRB?
  - Do regional level resources influence their service use trajectories and outcomes?

Conclusion:

- Opportunity to address such longitudinal questions through data linkages



## Considerations

Key scientific issue:

- CAFAS in Ontario coverage and representation of children and youth seen in other CYMH settings

Key feasibility issue:

- Lack of one data custodian to enter into data sharing agreement with ICES, permitting linkages

Options to explore:

- Building block approach: region by region
- Provincial directives e.g. unique identifier
- CAFAS in Ontario becomes data custodian/registry separate from ICES
- CAFAS in Ontario joins with ICES

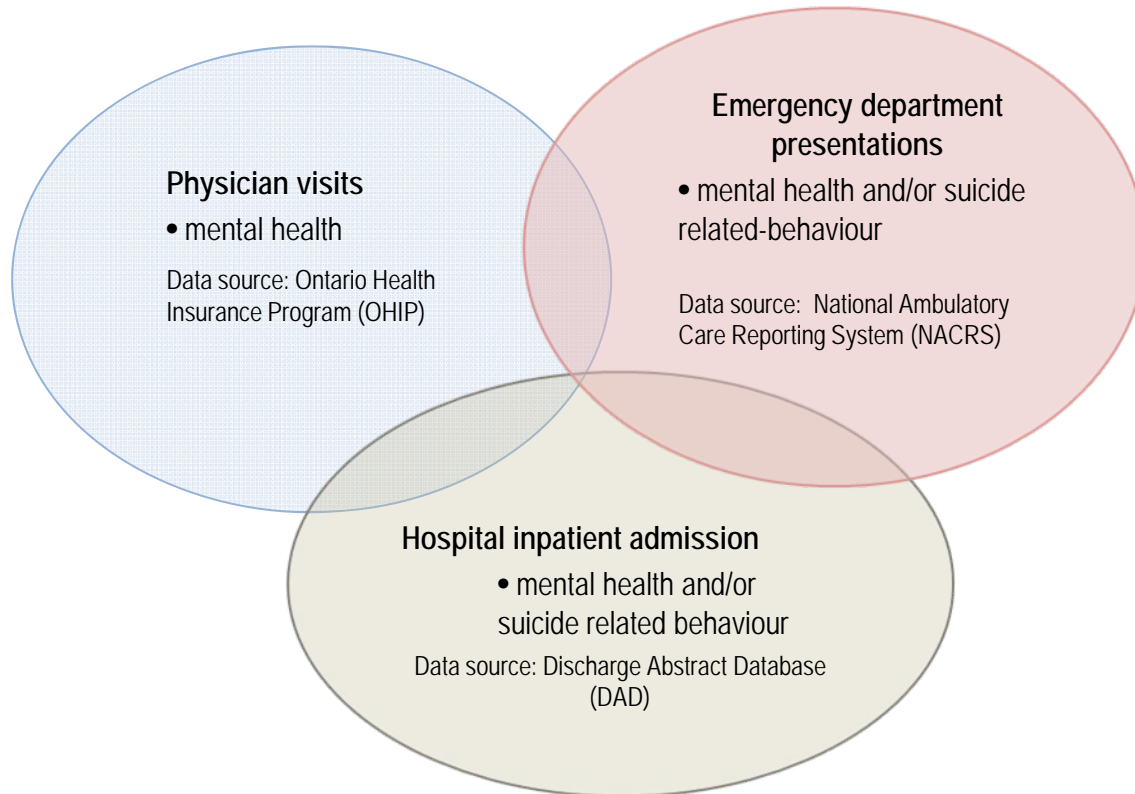
## APPENDIX METHODS

**Table 1.1: Parameters in Common across the CAFAS® and ICES Analyses**

<b>Sex</b>	Male and Female
<b>Age</b>	Two groups, age 6-11 and 12-17
<b>Region</b>	Ten regions used in the analyses based on the Ontario Ministry of Child and Youth Service (MCYS) definitions. Postal codes used to define each region were obtained from the MCYS.
<b>Time Frame</b>	Fiscal year 2008/09
<b>Suicide-related behaviours (SRB)</b>	In the literature, the terms ‘deliberate self-Harm’ or ‘self-harm’ have been defined, depending on the study, as including or not including suicidal intent. To avoid such confusion of terminology, in this report we use the proposed standard nomenclature (1-2) and their all-encompassing term “suicide related behaviours” (SRB). This nomenclature further distinguishes self-harm (no suicidal intent) from suicide-related behaviour (with undetermined or suicidal intent, i.e., a suicide attempt). The way SRB was operationalized for the analysis of CAFAS and ICES data holdings is described below.
<b>Registered Person Data Base (RPDB)</b>	<p>A listing of unique health numbers, along with corresponding demographic information (date of birth, sex, address, date of death, and changes in eligibility status), issued to each person eligible for publicly funded health care services in Ontario (25).</p> <p><i>Note:</i> Within those under the age of 18, there is very little difference in Census vs. RPDB denominators. For instance, Census -based projections estimated there would be 1,944,681 persons between 6 and 17 years of age in the province of Ontario in 2008. This is about a 2.8% difference from the RPDB calculation of 1,999,489.</p>

## APPENDIX ICES DATASET

**Figure 1.1: Clients captured in one or more ICES databases**



## APPENDIX

### ICES Dataset (cont'd)

**Table 1.2a: ICES Sample and Definitions**

<b>Sample</b>	Children and youth with mental health contact(s): <ul style="list-style-type: none"> <li>•Outpatient medical contact, and/or</li> <li>•Emergency department presentations, and/or</li> <li>•Hospital inpatient admissions</li> </ul>
<b>Outpatient medical contact for mental health reasons</b>	Extracted all Ontario Health Insurance (OHIP) records indicating “mental health visit” meeting one or more of the following: <ul style="list-style-type: none"> <li>•MD is a psychiatrist</li> <li>•Diagnosis code is “mental health” or “social”</li> <li>•Fee code is “mental health”</li> </ul> Based on prior work (26,27)
<b>Emergency department contact for mental health reasons</b>	Contacts for mental health reasons (overall) or specific to SRB were defined used National Ambulatory Care Reporting System (NACRS) data. Extracted all NACRS records indicating emergency department contact for SRB and/or mental health (main problem diagnosis is mental or behavioural disorder).
<b>Inpatient medical contact for mental health reasons</b>	Extracted all Canadian Institute for Health Information (CIHI) Discharge Abstract Database (DAD) records indicating admission for SRB and/or mental health where most responsible diagnosis is mental or behavioural disorder and/or main patient service is psychiatry or pediatric psychiatry. Extracted all Ontario Mental Health Reporting System (OMHRS) records for any admission listing SRB.



## APPENDIX ICES Dataset (cont'd)

**Table 1.2b: ICES Sample and Definitions**

<b>SRB Definitions</b>	<p>SRB records are defined by the emergency and inpatient data sets. For those with an ED contact or inpatient stay, SRB is identified by the treating physician. This is coded by hospital records technicians using the International Classification for Diseases (ICD-10) and later collated becoming part of NACRS and the CIHI DAD. Unfortunately, ICD-10 does not distinguish whether the client was suicidal or not. Self-poisonings or injuries are identified as intentional (self-inflicted) or undetermined or accidental.</p> <p>To address potential under-reporting of deliberate intent, alternative definitions (progressively more inclusive) are used to identify SRB (22).</p> <ul style="list-style-type: none"><li>•SRB1: any diagnosis codes list External Cause of Injury codes for suicide and self-inflicted injury</li><li>•SRB2: as with definition 1, but also including records where any of the diagnosis codes list External Cause of Injury codes for undetermined cut/piece injury or poisoning</li><li>•SRB3: as with definition 1, but also including records where any of the diagnosis codes list External Cause of Injury codes for undetermined intent</li></ul> <p>In this report, we only report on SRB1 as the findings did not vary greatly across these SRB definitions</p>
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## APPENDIX

### CAFAS® Dataset (cont'd)

**Table 1.3a: CAFAS® Sample and Measures**

<b>Sample</b>	<p>Children and youth using mental health services in participating:</p> <ul style="list-style-type: none"> <li>•Community-based children’s mental health centres (CMHC) or</li> <li>•Hospital-based children’s mental health clinics</li> </ul> <p>Those included in the sample had a:</p> <ul style="list-style-type: none"> <li>•T1 (CAFAS at entry) in fiscal year 2008, (L4, L5, L6, L7 in diagram above) or</li> <li>•T14 (CAFAS at exit) in fiscal year 2008 with T1 from a previous period (L1 &amp; L2 in diagram above)</li> </ul>
<b>Child and Adolescent Functional Assessment Scale ® (CAFAS ®)</b>	<p>Used to assess the degree of functional impairment in children and adolescents with emotional, behavioural, and or substance abuse problems.</p> <p>See <a href="http://www.cafasontario.ca/">http://www.cafasontario.ca/</a> for more detailed information.</p>
<b>CAFAS® Psychometric Properties</b>	<p>The CAFAS is a robust, psychometrically sound measure with published accounts substantiating it has evidence of reliability, concurrent validity, predictive validity, and sensitivity to change (28).</p> <p><b>Reliability:</b> CAFAS has satisfactory internal consistency and interrater reliability (29), as well as test-retest reliability (30).</p> <p><b>Concurrent Validity:</b> CAFAS is able to differentiate between youth being served at varying levels of intensity of care (29); in different living arrangements (31); with varying severity of psychiatric diagnoses (31), and with varying number of psychiatric diagnoses (32).</p> <p><b>Predictive Validity:</b> CAFAS scores at intake predicted subsequent episodes of care (33), care that is more restrictive (33, 34), and cost of services (34, 35). Intake CAFAS score was also predictive of future contacts with the law (36), school attendance (36) and recidivism during the year after discharge (37).</p> <p><b>Sensitivity:</b> CAFAS is sensitive to assessing the degree and rate of change over time as seen in an evaluation study conducted at Fort Bragg where statistically significant reduction in impairment was observed from intake to both 6 and 12 months (29, 38, 39) and in a second large evaluation study that found significant improvement in functioning from intake to 6 months (31) and to 2 years (40).</p>

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## APPENDIX

### CAFAS® Dataset (cont'd)

**Table 1.3b: CAFAS® Sample and Measures**

CAFAS® Domains (41)	Subscale	Description
	<b>School/Work</b> 35-items	Ability to function satisfactorily in a group educational environment
	<b>Home</b> <b>20-items</b>	Extent to which youth observes reasonable rules and performs age appropriate tasks
	<b>Community</b> 17-items	Respect for the rights and property of others and conformity to laws
	<b>Behaviour Towards Others</b> 23-items	Appropriateness of youth's daily behaviour
	<b>Moods/Emotions</b> 21-items	Modulation of the youth's emotional life
	<b>Self-Harmful Behaviour</b> 7-items	Extent to which the youth can cope without resorting to self-harmful behaviour or verbalizations
	<b>Substance Use</b> 23-items	Youth's substance use and the extent to which it is not appropriate or is disruptive
	<b>Thinking</b> 14-items	Ability of youth to use rational thought processes

## APPENDIX

### CAFAS® Dataset (cont'd)

**Table 1.3c: CAFAS® Sample and Measures**

<b>Domain Scoring (determined by the level of impairment)</b>	<b>Level of Impairment</b>		<b>Description and Score</b>
	<b>Minimal or None</b>		No disruption of functioning (score 0)
	<b>Mild</b>		Significant problems or distress (score 10)
	<b>Moderate</b>		Major or persistent disruption (score 20)
	<b>Severe</b>		Severe disruption or incapacitation (score 30)
<b>CAFAS® Total Score (sum of all eight domain scores)</b>	<b>Total Score</b>	<b>General Guidelines for Level of Care</b>	
	<b>0-30</b>	Likely referred to a qualified health professional	
	<b>40-70</b>	Likely requires outpatient services	
	<b>80-100</b>	Likely requires outpatient care with additional services of a supportive or intensive nature	
	<b>110-130</b>	Likely requires intensive, community-based services, although some youths may need acute residential services at some point	
	<b>&gt;140</b>	Very intensive services would be required; may even include residential or inpatient settings at some point	



## APPENDIX LINKAGE ISSUES

### **Ethical/data management Issues**

See Unique Identifiers in Limitations section below. Given the lack of a unique identifier in CAFAS in Ontario data holdings (and therefore, no opportunity for ‘deterministic’ linkage), a ‘probabilistic’ linkage with the administrative health care records held at ICES could be pursued. Important elements for successful probabilistic linkage are client’s full name, date of birth and postal code. Any proposed research would need to be deemed feasible and within the mandate of ICES, receive research ethics approval and undergo a privacy impact assessment at ICES. Further, a data sharing agreement between the data custodian(s) and ICES would need to be agreed upon and signed. ICES has practices and procedures in place to protect the privacy of individuals whose data are received and maintain the confidentiality of the information. These practices and procedures have been reviewed and approved by the Information and Privacy Commissioner of Ontario as required under the Act. Faculty members at ICES are allowed access to the resources there, subject to organizational policies and procedures.

### **Legal Considerations**

In order for a data sharing agreement to be completed between the data custodian(s) and ICES, the data custodian(s) and appropriate signing authorities would need to review and accept the contents of such a contract from their own legal perspectives. For example, it may not be possible to release some data elements due to specific legislation. Further, data sharing agreements would need to reflect whether the data custodian is considered a health information custodian and therefore, whether the application would be released under the PHIPA (Personal Health Information Privacy Act) or FIPPA (Freedom of Information and Privacy Protection Act) legislation. ICES has a template for data sharing agreements and in previous applications, this has been readily modified to incorporate clauses concerning FIPPA.



## APPENDIX

### Linkage Issues to Consider (cont'd)

#### **Technical Aspects and Related Costs**

Assuming that individual level 'external' CAFAS data were transported to ICES for individual probabilistic linkage approved research projects, ICES has privacy protocols in place for receiving this information. The data custodian(s) would need to determine how to best deliver the necessary data to ICES. (ICES can provide guidelines). As noted earlier, the client's full name, date of birth and postal code, would be important elements for successful probabilistic linkage. Nevertheless, the process of entering into (multiple) data sharing agreements with CAFAS user organizations would be time consuming and there would be additional costs connected to outputting and transporting these data sets to ICES. Accordingly, it would be more efficient to have one overall data custodian. The costs of conducting data linkages and analyses with data sets at ICES are well defined and can be incorporated into any future research proposals.

#### **Longer Term Considerations**

Ideally, the number of CAFAS participating agencies would expand over time and linkages with other sectors/data custodian(s), e.g., Education, could also be considered. Insights could be sought from other jurisdictions who have linked data across sectors; for example, in Manitoba and British Columbia. Further, population-based registries linking social and health data exist in Denmark and Sweden. In future, other outcomes; for example, suicide, could be examined. ICES is working towards having Vital Statistics data available for analyses. In addition, Dr. Rhodes is leading a linkage project between the Coroner's Office and ICES which is examining outpatient medical, hospital emergency department and inpatient stays in the year prior to suicide among children and youth.



## APPENDIX LIMITATIONS

### **Statistical Significance and Sample Size**

This report is descriptive in nature, meant to generate (vs. test) hypotheses for future research. Further, many comparisons were conducted, elevating the chance of finding statistical significance. Thus, we did not conduct tests of statistical significance. Had we conducted such tests, it is also possible some comparisons would not have been found statistically significant due to low statistical power. For example, when looking at SRB in ICES or SRB impairment in CAFAS data, there are fewer subjects under the age of 12, particularly boys.

### **Unique identifiers**

Ideally, each CAFAS user would be assigned a unique identifier to ‘deterministically’ link information. In this report, we draw on CAFAS in Ontario data which contains a client identifying number (no name), date of birth, and sex of a child. The identifying number, however, is unique to the agency, not the individual child (28). Accordingly, it is possible that a child could have the same identifying number across two or more agencies.

Therefore, we looked at what proportion in this report appeared to be unique individuals. Analyses conducted on the CAFAS in Ontario annual report sample FY 08/09 indicated that of the 677 (5.6%) cases (out of 12,031) with duplicate identifying numbers, less than one percent appeared in two agencies. Further, we wondered how often the same child would appear in two or more agencies but with a different identifying number. Only 95 (6.6%) cases had the same date of birth and sex appearing in two or more agencies but only 1.8% appeared in the same region. Thus, the lack of unique identifier in the did not pose a serious threat to the CAFAS analyses

## APPENDIX

### Limitations (cont'd)

#### CAFAS Regional Data Considerations

Some caution is needed in interpreting CAFAS regional results as:

1. Not all agencies serving children and youth participate in using CAFAS; only participating agencies are included in analyses.
2. Not all participating agencies within a region submitted data in FY 2008. 108 of 115 participating agencies sent in data in FY 2008
3. Among participating agencies that have submitted data, not all children and youth receiving treatment are rated (lack of information, insufficient human resources).

Region	2004		2005		2006		2007		2008		
	Participant agencies	Agencies submitting data	Participant agencies	Agencies submitting data	Participant agencies	Agencies submitting data	Participant agencies	Agencies submitting data	Participant agencies	Agencies submitting data	No. of Analyzable Cases Submitted
Central East	11	10	11	11	11	10	15	13	15	14	4,580
Central West	14	12	14	12	14	14	16	15	16	16	3,235
Eastern	14	7	14	10	14	12	14	13	14	14	2,872
Hamilton-Niagara	9	9	9	9	9	9	9	8	8	8	1,990
North East	6	3	6	3	6	5	6	5	6	5	2,013
Northern	10	8	10	9	9	9	11	9	10	8	2,566
South East	6	6	6	6	6	6	6	6	6	6	2,241
South West	17	16	17	16	17	16	21	19	19	18	3,747
Toronto	20	16	20	17	20	17	21	18	21	19	3,730
<b>Total</b>	<b>107</b>	<b>87</b>	<b>107</b>	<b>93</b>	<b>106</b>	<b>98</b>	<b>119</b>	<b>106</b>	<b>115</b>	<b>108</b>	<b>26,974</b>

**Table 1.4: Number and Regional Distribution of Mandated Agencies Submitting Data (26)**

#### Regional Definitions across Datasets

Regions were defined according to where the services were received as opposed to the residence of the clients in keeping with the CAFAS in Ontario MCYS region definition. Individual level residential information is available in the ICES dataset, but not in CAFAS. Ideally, future tracking of service use and outcomes would incorporate the client's area of residence (i.e. through postal code information). A small proportion (< 1%) of individuals could not be assigned to the region where they received services owing to missing postal code information.



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## Investigative Team:

- Melanie Barwick
- Anne Rhodes
- Cristina Vlad

## Trainees:

- Jennifer Bethell
- Jesmin Antony
- Diana Urajnik



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