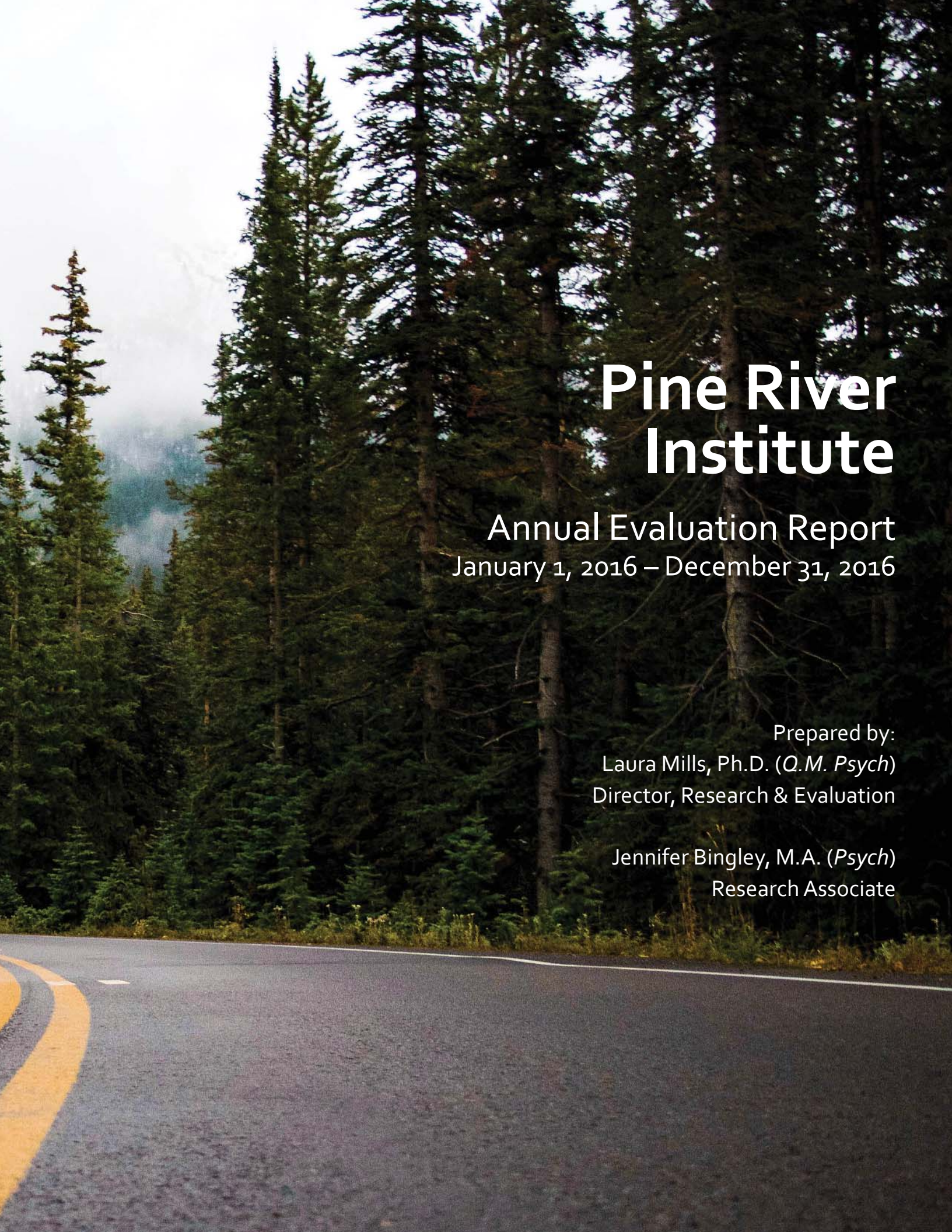
Pine River Institute

2016 Annual Evaluation Report



Pine River Institute

Annual Evaluation Report

January 1, 2016 – December 31, 2016

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A NOTE FROM OUR CLINICAL TEAM

The completion of the Annual Evaluation Report is a highlight for us each year. While we know as a team we are doing our best and believe in our work, it is reassuring to see in the hard data that we are making a significant difference in the lives of youth and their families. The Annual Evaluation Report holds us accountable, gives us insight, and challenges us to do even better.

None of this would be possible without the participation of our parents and youth and we thank them for their invaluable contributions. We are also grateful to the PRI research team members who work closely with us to determine what it is we should measure to understand our effectiveness and identify areas for improvement.

In short, after PRI:

- youth mental health, family relationships, and academics improve;
- youth substance use, criminality, running away, and hospitalizations decrease;
- parents who typically missed several days of work per month pre-PRI, miss much less work, and
- youth who complete the program do better across mental health, behavioural, and relationship outcomes than those who do not complete the program.

We are excited to learn that our completion rate in 2016 was the highest yet, at 59%.

The Annual Evaluation Report challenges us to tackle areas of concern. The trends in mental health scores, for example, continue to show that for a few youth the health improvements experienced within the first year after treatment are not sustained over subsequent years. This is an opportunity for us to learn how better to maintain treatment gains for all youth.

With deep appreciation for the hard work and dedication to excellence represented here, the Clinical Team embraces the findings of the 2016 Annual Evaluation Report.

The Clinical Team

ABOUT PINE RIVER

Pine River Institute (PRI) is a residential treatment program for youth 13-19 who struggle with addictive behaviours and often other mental health, behavioural, and relationship challenges. These teens have a complex array of issues. Many have experienced recent crises, stalled or abandoned school careers, and high levels of strife in their families. When teens come to PRI they are angry, sad, and quite lost.

Parents of youth at PRI are desperate. They walk on eggshells trying to keep peace in their homes, frantic when their child leaves home for days. Many have experienced their teen's suicidal intentions. They wonder how their child found themselves on such a dark path and why, despite all efforts, they have been unable to help.

At PRI, families find a safe, nurturing, and professional environment where they can begin to heal. Wilderness, residential, therapeutic, and academic programs converge into an integrated treatment model. PRI's approach enhances adolescents' **maturity**, meaning PRI's programming is designed to develop emotion regulation, empathy, respectful relationships, a social ethic, and a future orientation. We help families find their way to open and honest communication, healthy boundaries, limit-setting, and attunement to their youth's needs.

PRI families move seamlessly through a comprehensive program that entails four distinct ***PHASES***. In Phase 1, the Outdoor Leadership Experience (**OLE**), youth spend about two months in the wilderness, skill building and living in a small community, where they come to recognize the need for change. They then move to **RESIDENCE** (Phase 2), an academic and therapeutic milieu. As they demonstrate greater levels of **maturity** and leadership, they move to the third phase, **TRANSITION**, a time to start taking the lessons home. During this time, families develop an Aftercare plan. The fourth phase, **AFTERCARE**, when the youth reside at home but continue to receive support to sustain treatment gains, integrate into their community, and connect with school and/or work.

Parents have a very important role in the therapeutic process and engage in a **Parallel Process**, where they experience growth and development alongside their child. We walk with parents as they courageously learn about themselves, look at relationships within their own families, and begin a new relationship with their child.

THIS REPORT

PRI'S Annual Evaluation Report is a tool for quality improvement, risk management, administration, program and financial planning, staffing, communications/ marketing, and organizational presentations. Besides the internal audience of PRI Board and staff, we hope it is an informative tool for funders, government decision-makers, practitioners, researchers, potential PRI families and students and our referral network.

This report provides *demographics, process information, and outcome evaluation*. **Demographics** include student characteristics, **process** information spans admissions, and program engagement. **Outcome** findings include the mental, physical, behavioural, and relationship health of PRI clients.

We show outcome results for **Completers** (Cs) and **Non-Completers** (NCs). Full program completion at PRI is recognized by graduation from Aftercare; however, Aftercare engagement varies across families, so for evaluation purposes, **Cs are students who successfully completed the TRANSITION from the residential phase of the program**. Where you see a red star *, it indicates that the **differences between Cs and NCs is statistically significant**. Notation for all analyses are in footnotes. Due to the voluntary nature of research contribution, some data elements are missing. Thus, the findings in this report should be considered to represent a sample of the Pine River population only (i.e., other youth may not experience the same outcomes). Our sample comprised **66%** of parents whose youth attended; if the youth completed Transition, **91%** of parents contributed to research surveys. **38%** of the youth who attended PRI contributed data, and reports from our clinicians who have been in touch with **42%** of PRI alumni (typically unplanned when a youth calls to touch base). Very often, the information is consistent across these respondents, so we provide detailed charts with quantitative parent information, narrative reports based on youth responses, and open-ended comments provided by clinicians.

In 2010, PRI underwent profound changes. We secured permanent government funding. Our beds were consistently full. We started a waiting list. We implemented our current therapeutic model, our commitment to our family program, our team-based community milieu, and regular professional development. In other words, we increased our treatment fidelity which has forged the PRI as we know it today. Therefore, this report is based only on youth who were in the program after 2010. Prior reports included students in earlier years and can be accessed on our website at **http://pineriverinstitute.com/research-evaluation/**.

SNAPSHOT
OF THE FULL REPORT

This snapshot provides a general overview of the characteristics of PRI youth, our program processes, and our client outcomes. The full report offers deeper and broader information about our program.

TYPICAL CHARACTERISTICS OF YOUTH ENTERING PRI:

- The average age is 17, about equally split between males and females.
- Half are from the GTA, most of the others from across Ontario, a few from out-of-province.
- Most common substances of choice are marijuana and alcohol.
- Over two-thirds have a history of suicidal thoughts; about 1/4 have attempted suicide.
- Over two-thirds experienced police contact, two-thirds have run away.
- One in five are not in school, many of the others are failing.
- Most experience clinically problematic mental health issues, often across multiple domains, most commonly ADD/ADHD, anxiety, and/or depression.

INQUIRY AND ADMISSION INFORMATION

PRI receives approximately 1.5 calls per workday about a struggling youth. Between 25 and 35 youths enter PRI each year, and they stay an average of one year. There are always about 200 families on the waitlist; many inquirers indicate that their need is too immediate and choose not to be placed on the waiting list. In 2016, clients funded by the Ministry of Health and Long-Term Care waited an average of 493 days. Those paying privately waited 223 days (typically dependent on family readiness).

PROGRAM ENGAGEMENT

For youth who departed during 2016, the average duration a youth occupied a bed (including during home visits) was 496 days. 59% of youth completed the Transition phase of the program, and occupied a bed an average of 566 days.

Our parents are highly engaged. In addition to family therapy sessions, parents are expected to participate in one retreat, bi-annual workshops, and bi-monthly process groups.

TREATMENT OUTCOMES: PRE AND POST-PRI-REFERENCING 'MOST RECENT THREE MONTHS'

Substance Use: Pre-PRI, most youth presented with problematic substance use. **Post-PRI**, most youth were abstinent or using socially. Cs were more likely to be abstinent than NCs.

Academics: Pre-PRI, parents reported that their youth's academics were sporadic, stalled, or abandoned. **Post-PRI**, youth re-engaged with school with good grades and attendance.

Police Contact: Pre-PRI, 60% of youth had been involved with police, but **Post-PRI** this was less than 10% (for Cs).

Hospital Visits: Pre-PRI, 70% of youth had visited a hospital, 20% for substance use or mental health in the most recent three months. **Post-PRI**, less than 6% of Cs had a hospital visit.

Running Away: **Pre-PRI**, two-thirds of youth had run away; **Post-PRI**, less than 7% for Cs (less than 17% NCs).

Family Functioning increases from below North American 'healthy' levels before PRI to the healthy range after PRI.

SATISFACTION WITH TREATMENT

Most parents and youth are 'satisfied' or 'very satisfied' with PRI treatment. Parents gave the highest satisfaction ratings to the Outdoor Leadership Experience (OLE) and the individual therapy. The lowest ratings were given to Transition and Aftercare, which were still in the satisfied range.

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RESEARCH & EVALUATION

PRI Research is emerging as a leader among our peers. We are members of the research consortium for the National Association of Therapeutic Schools and Programs [NATSAP], and serve on their Ethics and Research Boards. We are recognized as one of NATSAP's Research Designated Programs.

PRI also led a province-wide project to develop and implement evaluation in youth addiction agencies. On behalf of 12 agencies, we secured over $570,000 from the Ontario Centre of Excellence in Child and Youth Mental Health, Addictions & Mental Health Ontario, the Ontario Trillium Foundation, and Health Canada's Drug Treatment Funding Program to support this collaborative initiative.

We share knowledge about treatment outcomes and the value of research across North America with stakeholders including parents, staff, Board members, and academic and agency colleagues. In 2016, we presented our research and evaluation at: Outdoor Behavioural Healthcare Industry Council (Park City, Utah), Addictions and Mental Health Ontario (Toronto, ON), and at PRI Staff Meetings, Parent Workshops, and PRI Board of Directors meetings. Also in 2016, we attended the NATSAP Annual Conference for learning and networking purposes.

We have ongoing relationships with: Dr. Debra Pepler, Distinguished Research Professor of Psychology at York University and Scientific Co-Director of PREVNet (Promoting Relationships and Eliminating Violence Network); Dr. Anita Tucker at the University of New Hampshire; Dr. Ellen Behrens at Westminster College (Utah); and Dr. Amanda Uliaszek (U of T). We will continue to work with our partners in an effort to publish our findings. Research articles that are planned for 2017 include:

- What happens to families who wait for adolescent substance abuse treatment?
- For whom is PRI best suited?
- Is Emotional Intelligence related to maturity, treatment completion, and outcomes?

Publications

Riddell, J., Barnes, M., & Mills, L. (in press). *Better Relationships, Mental Wellness, and Self Development: What Parents Expect from Residential Treatment for Their Struggling Youth. Journal of Therapeutic Schools and Programs*, January 2018.

Mills, L. (2016) *Wilderness Survival Guide to the T-Test. Journal of Therapeutic Schools & Programs, 9*, 54-57.

Mills, L. & Lewis, S. (2016). *For All You Do, This Article is for You: Thoughts on Optimizing and Evolving Treatment Evaluation. Journal of Therapeutic Schools & Programs, 8*, 10-15.

Creighton, V. & Mills, L. (2016). *Family Matters: Engaging Parents in Youth Treatment. Journal of Therapeutic Schools & Programs, 8*, 51-58.

Mills, L., Pepler, D., & Cribbie, R. (2013). *Effectiveness of Residential Treatment for Substance-Abusing Youth: Benefits of the Pine River Institute Program. Residential Treatment for Children and Youth, 30*, 202-226

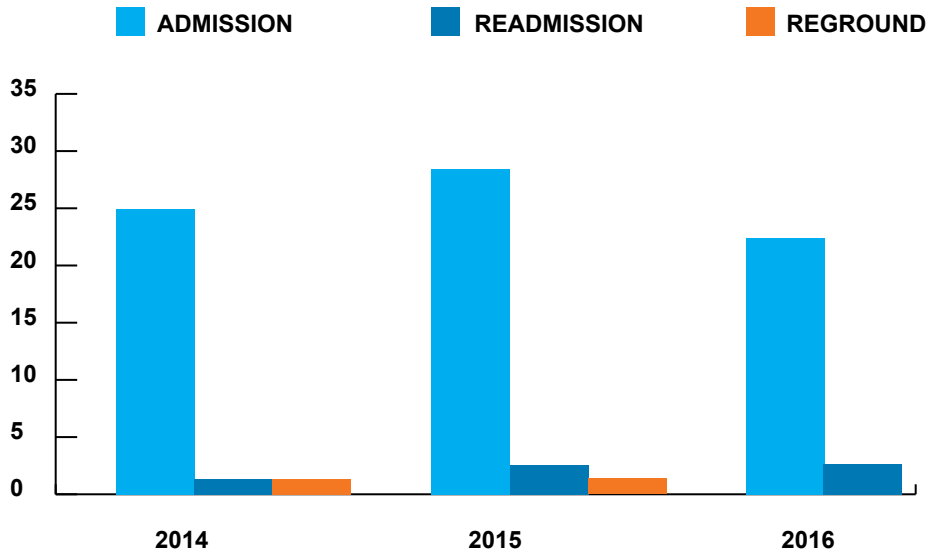
PRI's **Board of Directors** has established a **Standing Committee on Research** under the leadership of Dr. Mark Greenberg. The Committee has a mandate to advise and monitor on PRI research activities.

CLIENT PROFILE
ADMISSIONS

Each year family members, friends, and medical professionals contact PRI regarding a struggling youth. The number of inquiries for identified youth in 2016 was approximately 1.5 per weekday for a total of **285**; in 2015 and 2014, there were **399** and **341**, respectively[1]. The Admissions team typically responds to inquiries within one working day. If there is a match between the youth and PRI, inquirers complete the online application and submit medical, psychological, and academic documents. The youth is then placed on an admission wait list.

Families are scheduled for an on-site assessment a few weeks before admission. After the assessment, the youth is admitted when a bed becomes available. In 2016 there were 25 admissions, two of whom were former clients. In some cases, a youth may return to OLE for re-grounding (Figure 1); there was one 're-ground' admission in each 2014 and 2015, but none in 2016.

Figure 1. Admission, Readmission, & Re-grounding Frequencies 2014 – 2016.



Wait time from inquiry to admission in 2016 was 493 days for Ministry of Health and Long-Term Care (MOH) clients [2]. Clients funded by MOH wait longer than those who pay privately[3]. Please note that the number of days for private pay clients is their total wait time from contact to admission, regardless of when they formally indicated private pay engagement. **Typically, admission is about three weeks after a family agrees to pay privately**.
Average wait times are shown below, by year of admission and type of pay (Table 1).

Table 1. Average Days from Contact to Admission by Year and Type of Pay

2010		2011		2012		2013		2014		2015		2016	
MOH N=36	PP N=4	MOH N=28	PP N=4	MOH N=28	PP N=5	MOH N=27	PP N=7	MOH N=20	PP N=6	MOH N=21	PP N=9	MOH N=17	PP N=7
133	17	255	166	336	150	420	138	507	178	395	82	493	223

MOH= Ministry of Health funded; PP = private pay

Over 90% of inquiries are made by a parent, while the rest are from other family members, professionals, or the youth themselves. Inquirers hear about PRI from various sources: about a quarter find us online, about a quarter from a professional or medical doctor; others from PRI alumni, media and communication activities, education consultants, and through friends and family.

CHARACTERISTICS OF ADMITTED YOUTH

Demographics. The average **age** of youth at admission is 17.2. About half of PRI youth are from the GTA, most of the others from across Ontario, and a few from out-of-province. The ratio of **male to female** youth used to be 2:1 but in the last two years is about equal. This change is due in part to our having added additional female beds to the program in 2015[4].

Just over half of PRI parents live together. This varies slightly with each year's admitted families (52% in 2016). Three percent of PRI youth have experienced the death of a parent and 8% were adopted[5].

Addictions. PRI youth experience addictive behaviour that is part of a complex profile of history and behaviour. A relatively new addiction concerns the use of devices and engagement in virtual relationships. PRI parents reported that their children over-utilize phones and computers and when these are not available, their reactions are extreme and erratic. PRI youth are typically not gamblers.

Concurrent with addictive behaviour, PRI youth typically have experience with one or more **mental health** or **learning** challenge. About two-thirds of PRI youth have experienced previous treatment of various types (e.g., counselling, day program, wilderness) and many have been **hospitalized** for reasons of safety, assessment, or stabilization. **Running away** from home and contact with **police** is also common, and typically experienced by about two-thirds of our youth before PRI. About one in three parents reported that their child was **abused**, either verbally, physically, or sexually. In many cases, the abuse happened when the youth was a young child, but in some cases it occurred later, for example, among abusive peers. Youth reports align with those of parents, with a slightly higher proportion of verbal abuse reported.

Most (over three quarters) of PRI youth have experience with **suicidality**: over half have suicidal thoughts, and one in four had attempted to end his or her life before attending PRI. About half of PRI parents indicate their child has a history of self-harm (e.g., cutting, burning, removing skin, and banging against walls). About one in three PRI youth, at entry to the program, reported a history of self-harm[6], which is one way youth cope with intense emotional distress or pain[7].

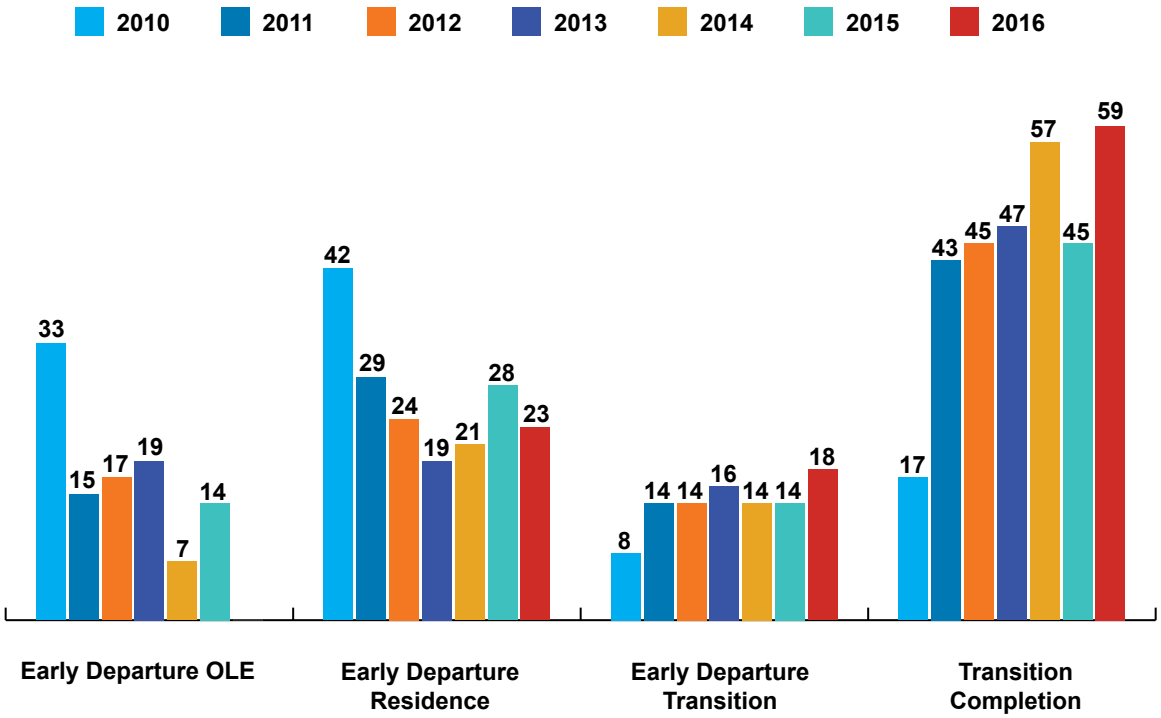
Relationships. Family lives before PRI were chaotic and oftentimes frightening. Parents often struggled from one crisis to the next, walked on eggshells to keep peace in their homes, experienced damaged or stolen property, and worried that one child's troubles would have a profound impact on other children in the home. Many PRI youth associated with deviant peers, usually beginning when they transitioned to high school. Some parents indicate their child was always drawn to the more deviant crowd.

CLIENT PROFILE
ENGAGEMENT

STUDENT ENGAGEMENT

Treatment completion is known to foster healthy outcomes; therefore, we strive to help our youth reach Transition completion. Figure 2 details our early departure and Transition completion rates. In some cases, youth exit the program before completion, based on a mutual client-clinician decision. We started tracking this in 2015, when 6 of the youths who were discharged before completing Transition, exited based on a clinician-endorsed, or 'planned early discharge'.

Figure 2. Phase at Departure by Year of Departure, in Percentages, 2010 – 2016



The average length of stay for youth who departed in 2016 was 496 days. Table 2 details length of stay by year of departure and PRI Completion.

Table 2. Average Length of Stay in Days by Year of Departure and PRI Completion

	2010	2011	2012	2013	2014	2015	2016
Completers* [8]	256	396	474	531	527	521	566
Non-Completers	88	208	179	194	310	371	395

Remember, a red star means there is a statistically significant difference between completers and non-completers

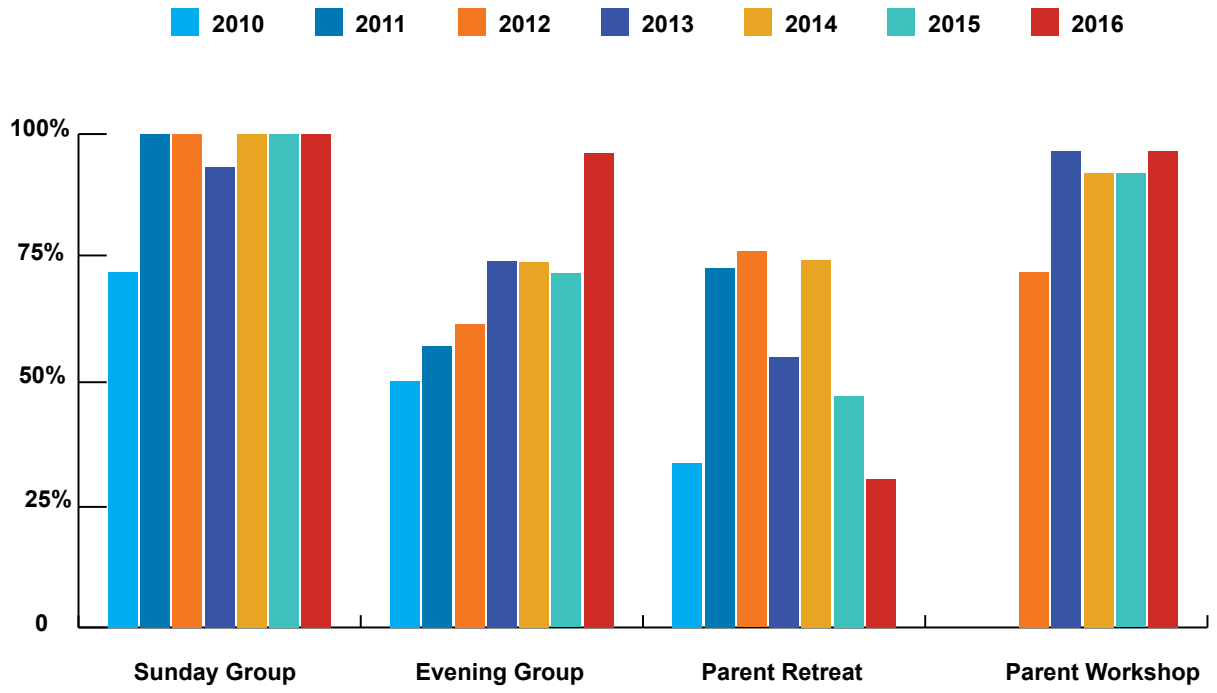
AFTERCARE

When youth complete Transition they are encouraged to participate in Aftercare, a fee-for-service option (Aftercare is not in our funding agreement with MOHLTC). All but one youth who completed Transition in 2016 participated in Aftercare. Similarly, across all years since 2010, there was one or no completers who did not engage with Aftercare.

PARENT ENGAGEMENT

Parent engagement is core to the PRI program. When youth progress past the Outdoor Leadership Experience (OLE), their parents/guardians participate in family group every other Sunday, bi-weekly evening parent groups, one parent retreat during the youth's stay at PRI, and two two-day parent workshops per year. Special arrangements are made for out-of-province families. Figure 3 shows the parental attendance at each program element, since 2010. The family member is most often a parent, but in some cases can be a grandparent or other adult guardian. An average of 1.8[9] family members is involved at each opportunity.

Figure 3. Parent Attendance at Parent Opportunities by Year of Departure (2010 – 2016)



REPORTABLE INCIDENTS AT PRI

Staff at PRI keep a record of concerning incidents, including events such as absent without leave, property damage, self-harm, and other behaviours requiring discipline and/or medical attention. In 2016, there were **114** reported incidents, there were **134** in 2015, and **129** in 2014. We track all incidents and utilize the information for risk management and quality improvement. For example, we discuss how to mitigate risk for particular youth who tend to be involved in a high proportion of incidents, as well as for the types of incidents.

PRI TREATMENT OUTCOMES

A strength of Pine River Institute is its evaluation and research. We are working toward use of standardized tests, which will result in increasingly robust results and evaluation-informed program decisions. At this point, we do not always use standardized measures. Thus, each measurement in the report has a 'robustness rating' based on the strength of measurement, as follows:

UNDERSTANDING RATINGS

Gold Medal: Indicates a ***standardized*** measure, ***matched*** pre-PRI to post-PRI. Standardized measures have been widely tested to make sure they measure what they say they do, and give reliable results. Scores have usually been 'normed' across populations with various characteristics such as age and sex. Matching is when we have responses from the same person pre- and post-PRI, which allows us to measure change over time.

Silver Medal: Indicates a ***non-standardized***, non-normed ***matched*** measure. Sometimes standardized measures do not ask what we want to know, they can be cumbersome and costly. Thus, we have questions that make sense to us, with our own scoring system.

Bronze Medal: Indicates a ***standardized***, valid, reliable, normed ***non-matched*** measure. This means that we can take averages or frequencies before and after treatment, but they are not necessarily the same group. Thus, it does not measure individualized change.

Good Effort: We used a ***non-standardized*** measure, and scores were ***not matched*** pre-PRI to post-PRI. This is the least reliable way to understand treatment effectiveness, but these data are included because some questions are of interest to PRI and our stakeholders.

Time Anchor: When respondents complete our surveys, they are typically asked to reflect on the most recent three months.

Completers and Non-Completers: You will see results for ***'completers' (Cs) – youth who completed Transition, and 'non-completers' (NCs) – youth who departed before completing Transition***. **When the differences between Cs and NCs are statistically significant, they are noted with a star *** and statistical notation is indicated in a footnote.

Limitations

Generalizability is when one can expect the results for participants in a study to be experienced similarly by others. With only 35 clients per year, and without a comparison group, we cannot generalize our outcomes to other youth. We can only look at client and family health before and after the program and understand that in the time in between, the youth attended PRI.

Missing Data is often a problem in clinical data, and PRI is no exception. We are proud of our response rate, but caution the reader that the families we cannot contact might have different experiences than those represented here.

Treatment Changes occur often in a therapeutic milieu, and many are not tracked in a way that can be captured for program evaluation. For example, a new sport, guest speaker, or new staff may have an impact on a youth's experience, but our protocol would not be able to identify whether these everyday therapeutic decisions impact the outcomes of PRI clients. We can only say that, in general, the experience at PRI is associated with the outcomes presented here.

OUTCOMES EVALUATION

SUBSTANCE USE & MENTAL HEALTH

SUBSTANCE USE

Before PRI, **parents** indicated that PRI youth started using substances at an average age of 13.6[10] and that regular use of substances began on average at 14.7 years[11]. Most parents (80% in 2016) reported that their child used substances 'daily'. Before coming to PRI, most youth had tried several types of drugs and were poly-substance users. The most common youth drug of choice as reported by parents over the last three years was marijuana (76%), then alcohol (16%).

We ask about youth substance use in terms of whether use was 'consistent and problematic', 'periodic slips', 'social or occasional' or 'abstinent'. **Pre-PRI**, parents commonly reported youth substance use as consistent and problematic. **After PRI**, parents reported that their child's substance use was less problematic, particularly among Cs (Table 3).

Table 3. Parent-Reported Substance Use Pre & Post-PRI by Time and PRI Completion

	PRE-PRI	3M Post-PRI*[12]		6M Post-PRI*		1Y Post-PRI*		2Y Post-PRI	
	N=159	C (N=39)	NC (N=23)	C (N=34)	NC (N=17)	C (N=33)	NC (N=16)	C (N=18)	NC (N=10)
Abstinent	3%	64%	22%	53%	12%	33%	19%	33%	30%
Social/Occasional	16%	18%	26%	29%	29%	42%	25%	44%	10%
Periodic Slips	6%	18%	22%	9%	12%	12%	0%	6%	20%
Consistent & Problematic	75%	0%	30%	9%	47%	12%	56%	17%	40%

Before PRI, **youth** reported having started to use substances at an average age of 13; three quarters reported using daily, and most indicated that marijuana was their primary drug of choice followed by alcohol, but many had also tried or preferred cocaine, ecstasy, or prescription drugs that were not prescribed to them. When asked about substance use after PRI, most youth reported either being abstinent or using substances socially/occasionally.

Clinician comments regarding former PRI students

"He is functioning well with work and school and maintaining complete sobriety."

"More attuned, supportive peer group."

OUTCOMES EVALUATION
ACADEMICS

SCHOOL ENGAGEMENT

Most inquiries to PRI are for secondary school-aged youth. Often, however, their academic careers are sporadic, stalled, or have been abandoned. For example, **before PRI**, parents reported that their child was low on school engagement, with most youth reported as having low attendance, with an average of 26 missed school days in the most recent 90. Fifty-nine percent (59%) of parents indicated that their child attended school half the time or less. Reasons for poor school attendance included: behavioural issues resulting in suspension or expulsion, mental health issues, or refusal to attend for fatigue, aches and pains, or lack of interest. Within the first year **after PRI**, the number of school days missed was between 1 and 3 for Cs and between 2 and 4 for NCs[13].

Post-PRI, parents reported that most youth were engaged with school or work (Table 4). Some youth were also volunteering, for example, coaching sports, at soup kitchens, or overseas charities.

Table 4. Parent-Reported Academic Status Post-PRI by Time and PRI Completion

	Pre-PRI	3M Post-PRI[14]		6M Post-PRI		1Y Post-PRI		2Y Post-PRI	
	(N=104)	Cs (N=39)	NCs (N=20)	Cs (N=33)	NCs (N=15)	Cs (N=32)	NCs (N=16)	Cs (N=29)	NCs (N=11)
Not in School	18%	8%	15%	12%	20%	22%	25%	17%	18%
In High School	78%	44%	30%	39%	33%	25%	25%	24%	45%
Graduated H.S.	1%	18%	5%	21%	13%	16%	13%	17%	0%
In / Grad Post-Sec	1%	13%	10%	9%	0%	13%	6%	14%	18%
Working Full Time	NA	18%	40%	18%	33%	25%	31%	28%	18%

Note: Pre-PRI, 2% of parents indicated youth school attendance was 'other'.
Note: Columns sum to within 1% +/- 100% due to rounding.

Youth reports align with those of parents, indicating little engagement with school pre-PRI. Post-PRI, youth reported that they were generally attending school, consistent with parent reports.

ACADEMIC ACHIEVEMENT

Table 5 shows the historical average academic achievement for PRI youth. Consistent with Ontario trends in which 60%-75% of students in grades 3 and 6 earn A's and B's, most PRI youth earned A's and B's in earlier grades. Their marks deteriorated, however, during later grades.

Table 5. Parent-Reported Historical Average Achievement for Applicants prior to PRI

	A	B	C	D	Fail
Grade 3 (N=113)	28%	57%	12%	3%	0%
Grade 6 (N=113)	26%	54%	18%	2%	1%
Grade 7 (N=113)	21%	45%	29%	4%	1%
Grade 8 (N=115)	17%	40%	30%	11%	1%
Grade 9 (N=118)	10%	26%	31%	20%	12%
Grade 10 (N=93)	5%	18%	34%	19%	22%
Grade 11 (N=50)	4%	6%	22%	38%	30%
Grade 12 (N=23)	9%	13%	22%	17%	39%

Post-PRI, Parents reported that their youth earned As and Bs more often than other marks (Table 6).

Table 6. Achievement Post PRI All Time Points, Parent-Reported

	A		B		C		D		Fail	
	Cs	NCs	Cs	NCs	Cs	NCs	Cs	NCs	Cs	NCs
3M Post-PRI (N=35)	32%	31%	54%	31%	9%	31%	4%	8%	0%	0%
6M Post-PRI (N=30)	33%	0%	42%	67%	17%	0%	4%	17%	4%	17%
1Y Post-PRI (N=26)	33%	12%	44%	38%	22%	25%	6%	0%	0%	25%
2Y Post-PRI (N=19)	42%	28%	42%	14%	17%	43%	0%	14%	0%	0%

Clinician Comments

" Has degree in Criminology / Criminal Justice from Carleton. Now working to save for law school…"

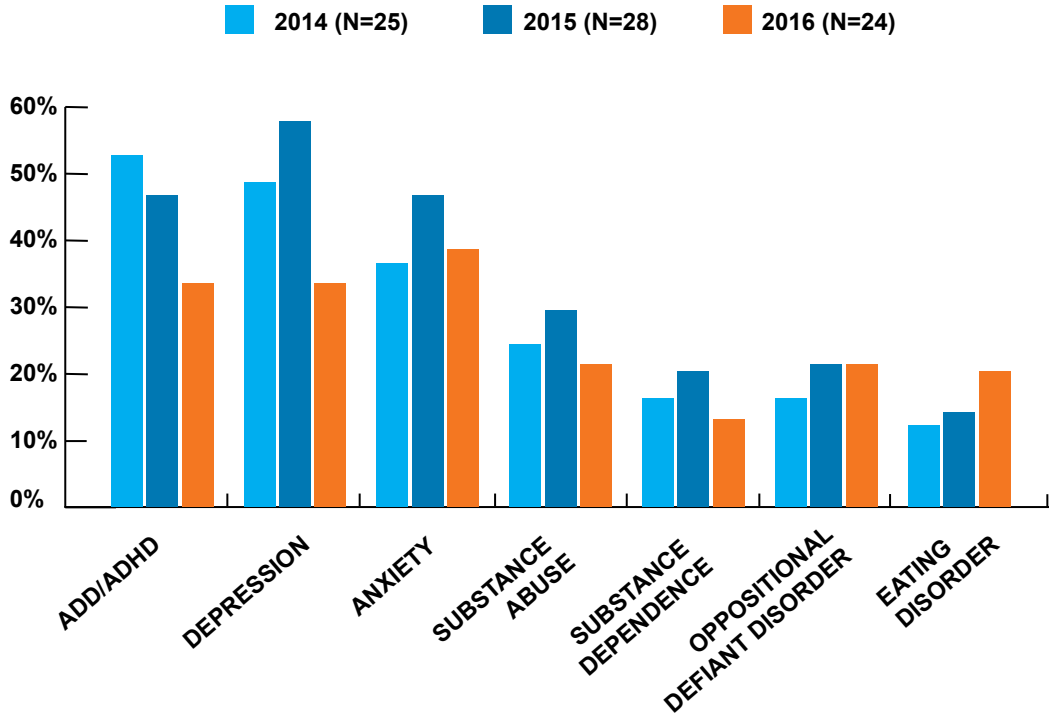
" Working full time as an Education Assistant with Autistic Children"

OUTCOMES EVALUATION
MENTAL HEALTH

LEARNING ISSUES

Parent reports indicated that 59% of admitted youth had at least one **formally diagnosed** mental health disorder[15]. Of those with a diagnosis, 42% were diagnosed with one disorder, 22% were diagnosed with two, and 36% with three or more, to a maximum of eight diagnoses. Figure 4 shows admitted youth with **parent-reported** mental health diagnoses. Only the most recent three years are shown here, as data collection on some of these categories was not robust earlier than 2014.

Figure 4. Parent-Reported Youth Mental Health Diagnoses at Application



Note: Substance Abuse or Dependence percentages represent youth who have a formal diagnosis. Most PRI youth would 'qualify' for this diagnosis before PRI but may not have a diagnosis.
Note: Over the past three years, 10% or less of parents report their youth as having had a diagnosis of: Obsessive Compulsive Disorder, Panic Disorder, Bipolar Disorder, Social Anxiety, PTSD, and Borderline Personality Disorder.

Parents reported that 42% of admitted youth over the past three years have a formally identified learning issue, with ADD/ADHD (Attention Deficit (Hyperactivity) Disorder) as the most common. The most common non-ADD/ADHD learning challenges include executive and other processing disabilities, non-verbal and communication disabilities, and disorders on the autism spectrum.

We utilize a widely-used tool called the Child Behavior Checklist (CBCL) that indicates whether youth have **Clinically Problematic**, **Borderline Problematic**, or **Non-Problematic**[16] scores on mental health and behaviour. The tables below show the percentages of PRI students whose **parent-reported** scores fall into the **clinically problematic** range for internalizing problems (anxious, depressed, and somatic complaints), externalizing problems (aggression and rule-breaking), and other (social, thought, and attention problems) pre- and post-PRI. Many youth were experiencing problems in the clinical range across multiple domains before coming to PRI, which sheds light on the complexity of their problems at intake. Most youth's problems were in the non-problematic range after PRI, across most domains, particularly if they completed treatment.

Table 7. Parent-Reported % of Youth with Problematic CBCL Scores by Time and PRI Completion

	Pre-PRI	3M Post-PRI[17]		6M Post-PRI[18]		1Y Post-PRI[19]		2Y Post-PRI[20]	
	N=67	C (N=44)	NC (N=24)	C (N=39)	NC (N=17)	C (N=35)	NC (N=18)	C (N=27)	NC (N=11)
Anxious / Depressed	54%	9%	12%	3%	41%*	9%	28%*	22%	27%
Withdrawn/Depressed	60%	4%	21%	8%	29%*	14%	22%	26%	36%
Somatic Complaints	43%	8%	8%	10%	24%	9%	22%	18%	54%*
Social Problems	27%	0%	8%	3%	6%	0%	11%	7%	18%
Thought Problems	45%	9%	12%	5%	24%*	9%	33%*	11%	46%
Attention Problems	37%	7%	12%	3%	18%	3%	17%	7%	9%
Rule-Breaking	75%	2%	12%	3%	29%*	6%	22%	0%1	8%*
Aggression	55%	0%	0%	0%	12%*	0%	17%*	4%	0%

Clinician Comments

" Confident, successful, friendly, functioning, holding down a full-time job, dating long-term."

" Since Pine River, he sees his parents as more supportive."

OUTCOMES EVALUATION

CRISIS & BEHAVIOURAL INDICATORS

HOSPITAL VISITS

Pre-PRI, visits to a hospital[21] were common for over two-thirds of PRI youth. Of the 223 admissions since 2010, 187 **parents** answered the questions about hospitalization. Of those, 70% reported that their child had visited a hospital in the past, and for 38% of those, the hospital visit was within three months of completing the admission application (18% for substance use reasons, 56% for mental health, and 26% for other, such as broken bone). The average stay for these hospital visits was 6 days (ranging from a few hours to several months).

Post-PRI, the proportions of hospital visits were comparatively low (Table 8), particularly at the 3-month and 1-year Post-PRI time points.

Table 8. Parent-Reported Most Recent 3 Months' Hospitalizations by Time and PRI Completion

	PRE-PRI	3M Post-PRI*[22]		6M Post-PRI		1Y Post-PRI*		2Y Post-PRI	
	N=187	C (N=44)	NC (N=26)	C (N=42)	NC (N=19)	C (N=37)	NC (N=20)	C (N=30)	NC (N=10)
Substance Use	5%	0%	12%	5%	10%	3%	10%	0%	0%
Mental Health	15%	2%	8%	0%	10%	0%	5%	0%	0%

Pre-PRI, about half of PRI youth reported that they had visited a hospital for mental health or substance use concerns. Hospital visits, as reported by youth post-PRI, are much less frequent, particularly for substance use reasons.

POLICE CONTACT

Pre-PRI, parents reported that 60% of youth had police contact. Of these, 58% were within three months before applying. Reasons for police contact included mischief, property damage, theft, intoxication, and drug possession. **Post-PRI**, contact with police decreased (Table 9).

Table 9. Parent-Reported Recent Contact with Police Post-PRI by Time and PRI Completion

	PRE-PRI	3M Post-PRI[23]		6M Post-PRI*		1Y Post-PRI*		2Y Post-PRI	
	N=105	C (N=45)	NC (N=26)	C (N=42)	NC (N=18)	C (N=36)	NC (N=20)	C (N=30)	NC (N=10)
Police Contact	27%	7%	19%	5%	33%	0%	30%	7%	30%

Pre-PRI over two-thirds of youth reported having had contact with police; **post-PRI**, fewer youth experienced police contact, particularly if they had completed the program.

RUNNING AWAY

Youth on the run are at high risk for being involved with crime, drugs, unprotected or forced sex, prostitution, and contracting sexually transmitted diseases. In North America, about 1 in 7 teens (14%) runs away. **By parent report pre-PRI**, 63% of youth had run away, and 44% of those had run away in the three months before application. **Post-PRI**, the percentage of parents who reported that their child had run away was lower than the North American average (Table 10).

Table 10. Recent Running Away Pre- to Post-PRI, Parent-Reported, by Time and PRI Completion

	PRE-PRI	3M Post-PRI[24]		6M Post-PRI		1Y Post-PRI		2Y Post-PRI	
	N=160	C (N=44)	NC (N=25)	C (N=41)	NC (N=18)	C (N=37)	NC (N=18)	C (N=29)	NC (N=10)
Running Away	28%	4%	0%	2%	6%	0%	6%	0%	0%

Before PRI, about half of youth reported that they had run away from home, about one in five reported having done so in the three months prior to admission. **After PRI**, very few youth reported that they had run away from home.

Note: Running away becomes a less meaningful health indicator as youth age and move away from home.

Clinician Comments

"Mom and dad report that family relationships are very well and healthy. They are communicating well"

OUTCOMES EVALUATION
FAMILY

FAMILY FUNCTIONING

Family functioning is measured with the McMaster Family Assessment Deice(FAD) , scored from 1 to 4 (4 is the highest score; 3+ indicates 'healthy' functioning). **Pre-PRI**, parents' average scores were about one standard deviation below 'healthy'. Post-PRI, family functioning was in the 'healthy' range.

Table 11. Parent-Reported Family Functioning by Time and PRI Completion

	PRE-PRI	3M Post-PRI*[26]		6M Post-PRI*		1Y Post-PRI*		2Y Post-PRI	
	N=122	C (N=43)	NC (N=25)	C (N=42)	NC (N=18)	C (N=36)	NC (N=19)	C (N=27)	NC (N=11)
FAD Average	2.5	3.1	2.9	3.1	2.8	3.2	2.9	3.0	2.9

Youth's FAD scores indicated that their perceptions of family functioning were similar to that of their parents, below the 'healthy' range pre-PRI, and in the healthy range post-PRI.

Parents Missing Work. In the three months before applying to PRI, mothers missed on average 10 days of work due to their child's issues, and fathers missed 5 days. **Post-PRI**, both mothers and fathers of youth who had completed the program reported missing less than one day in the past three months. Fewer days were missed for both parents (Table 12).

Table 12. Number of Days Work Missed for Parents Post-PRI by Time and PRI Completion

	PRE-PRI	3M Post-PRI[27]		6M Post-PRI		1Y Post-PRI	
	N=79	C (N=28)	NC (N=9)	C (N=26)	NC (N=9)	C (N=26)	NC (N=13)
Moms	10.0	0.1	1.0*	0.8	0.7	0.3	1.8*
	N=70	(N=21)	(N=8)	(N=18)	(N=9)	(N=19)	(N=10)
Dads	5.5	0.1	0.6	0.0	0.9	0.7	1.9

Clinician Comments

"He is enjoying his parents and feels his home life is settled and calm."

"Enjoying a healthy relationship with his mom and dad."

OUTCOMES EVALUATION

QUALITY OF LIFE

We measure Quality of Life (QOL) with the Personal Well-Being Index (PWI) , which is scored from 0 (very dissatisfied) to 10 (very satisfied); 7–8 is regarded as the North American 'normal' range.

The average PWI score for **parental** quality of life **pre-PRI** is close to the normal range, and well into the normal range **post-PRI** (Table 13).

Table 13. Parental Quality of Life by Time and PRI Completion

	PRE-PRI	3M Post-PRI*[29]		6M Post-PRI		1Y Post-PRI		2Y Post-PRI	
	N=93	C (N=44)	NC (N=25)	C (N=42)	NC (N=18)	C (N=35)	NC (N=18)	C (N=28)	NC (N=11)
FAD Average	6.8	7.9	7.8	7.9	7.5	7.2	7.7	7.8	7.7

Pre-PRI, youth reported a quality of life that is lower than the healthy North American range (average of 5.9).
Post-PRI, youth ratings increase, particularly for those who completed PRI.

PHYSICAL HEALTH

Body Mass Index. Over two-thirds of PRI youth were in the healthy BMI range before and after coming to PRI, with some variation by time and program completion (Table 14).

Table 14. Parent-Reported Youth BMI by Time and PRI Completion

	PRE-PRI*	3M Post-PRI[30]		6M Post-PRI*		1Y Post-PRI*	
	N=169	C (N=37)	NC (N=18)	C (N=31)	NC (N=16)	C (N=33)	NC (N=16)
Underweight	20%	3%	11%	10%	19%	6%	19%
Healthy	68%	84%	72%	48%	56%	82%	69%
Overweight	20%	14%	11%	29%	19%	9%	6%
Obese	4%	0%	6%	13%	6%	3%	6%

Clinician Comments

" He is focused on his future, engaged in his life, feeling competent and confident in himself and his decisions."

SATISFACTION WITH TREATMENT AT PINE RIVER INSTITUTE

Measuring satisfaction allows us to celebrate successes, and review processes that require attention because parents or youth rate them lower. Scores range from 1(Very Dissatisfied) to 5 (Very Satisfied). Parents rated most PRI elements with high satisfaction. Lowest scored were Transition and Aftercare, which were still in the satisfied range.

Table 15. Parent Satisfaction for Individual Treatment Elements by Time and PRI Completion

	3-M Post-PRI[31]		6M Post-PRI[32]		1Y Post-PRI[33]	
	C	NC	C	NC	C	NC
Admissions	4.6	4.3	4.4	4.3	4.7	4.6
OLE	4.8	4.4	4.6	4.6	4.8	4.6
Individual Therapy	4.8	4.4*	4.7	3.8*	4.7	4.3
Front Line Staff	4.7	4.5	4.7	4.4	4.8	4.6
Group Therapy	4.5	4.1*	4.5	4.0	4.6	4.1*
Family Therapy	4.2	3.9	4.3	3.9	4.3	4.0
Mentor	4.2	4.0	4.6	3.7*	4.4	4.0
Academics	4.6	4.1*	4.6	3.9*	4.7	3.7*
Parent Retreat	4.7	4.6	4.7	4.4	4.9	4.3*
Transition	4.1	3.2	4.1	3.5	4.0	
Aftercare	3.5		3.5		3.6	
Overall Quality	4.3	4.0	4.6	4.1	4.5	4.1

Note. For Family Therapy, Academics, Mentor, & Parent Retreat, we only report if clients had completed OLE. For Transition & Aftercare, we only report if clients completed Residential Phase and Transition, respectively.*

Among youth, front line staff, academics, and individual therapy were rated as most satisfying; lowest rated among Cs was Aftercare, group, and family therapy. As expected, Cs rated PRI higher than NCs.


NOC
STAFF

NOTES

1. No difference in number of inquiries between 2014 and 2015 ($\chi 2_{(1)}$=0.2, p=.69, *n.s.*)
2. In general, wait time is different across all years since 2010 ($F_{(6,205)}$=4.1, p=.001, $\eta 2$=.11; moderate effect). 2010 was significantly shorter, and 2014 and 2016 were longer than wait time in other years ($p < .05$)
3. Private Pay clients wait fewer days than MOH clients ($F_{(205)}$=46.8, p<.001, $\eta 2$=.19; large effect).
4. Proportions of male to female students not significantly different over the past 3 years ($\chi 2(2)$=0.7, p=.7, *n.s.*)
5. Adopted does not include youth adopted by a step-parent.
6. Please note that the data regarding such personal experience as abuse, suicidality, self-harm, etc. may be underrepresented as they are gathered during the admissions process, before youth and parents have developed a relationship with the clinical team at PRI. Therefore, respondents may not feel comfortable disclosing such information.
7. Richardson, C. et al. (2012). *The truth about self-harm: For young people and their friends and families* [Brochure]. London, U.K.: Mental Health Foundation.
8. Length of stay different across years of departure ($F_{(170)}$=7.5, p<.001, $\eta 2$=.21 (large effect)). 2010 departures had shorter length of stay than all later years, 2011 was shorter than 2014 (p=.03) and 2016 (p=.001), 2012 was shorter than 2016 (p=.02). Length of stay longer for completers than non-completers ($F_{(1)}$=44.0, p<.001, $\eta 2$=.21 (large effect)).
9. No difference in average number of attendees at parent opportunities ($F_{(235)}$=3.2, p=.07, *n.s.*).
10. No difference on age at first use between males (13.4) and females (13.8); ($F_{(61)}$=0.2, p=.23, *n.s.*)
11. No difference on age at regular use between males (14.6) and females (15); ($F_{(53)}$=1.8, p=.26, *n.s.*)
12. Proportions are different for Cs and NCs at 3M ($\chi 2(3)$ =17.8, p<.001; φ=.54), and 6M ($\chi 2(3)$ =12.7, p=.005; φ=.50), Y Post-PRI (χ2(3) =11.5, p=.009; φ=.48), but not 2Y post-PRI ($\chi 2(3)$ =5.0 p=.17, *n.s.*). To note, significance means that overall, the cells are not the same. For cell-by-cell comparison, please contact research department.
13. No difference in number of missed days for Cs and NCs at 3M Post-PRI, 6M Post-PRI, or 1Y Post-PRI (all p>.05, *n.s.*).
14. No difference between Cs and NCs on academic status at 3M Post-PRI, 6M Post-PRI, 1Y Post-PRI, or 2Y Post-PRI (all $p > .05$, *n.s.*)
15. Note that even though we specify 'physician diagnoses', some parents might report a disorder without formal diagnosis.
16. Achenbach, T. M., & Rescorla, L. A. (2001). *Manual for the ASEBA School-Age Forms & Profiles*. Burlington, VT: University of Vermont, Research Center for Children, Youths, & Families.
17. No difference in 3M-Post PRI proportions (C vs. NC by Non-Clinical, Borderline, and Clinically Problematic on subscales); all p-> .05.
18. Differences in 6M-Post PRI proportions between NCs and Cs in all starred sub-scales (all $p < .05$)
19. Differences in 1Y-Post PRI proportions between NCs and Cs in all starred sub-scales (all $p < .05$)
20. Differences in 2Y-Post PRI proportions between NCs and Cs in all starred sub-scales (all $p < .05$)
21. Understanding the reason for hospitalization is complicated; 'overdose, physical injury, or accidents' might be indicative of substance use and/or other mental health issues.
22. Hospitalization proportions are different at 3M Post-PRI for Substance Use ($\chi 2(1)$ =5.3, p=.02; φ=.28) and Mental Health ($\chi 2(1)$ =8.3, p=.02; φ=.35) but no differences at 6M for Substance Use or Mental Health (p>.05); proportions are different at 1Y for Substance Use ($\chi 2(1)$ =7.6, p=.02; φ=.36) but not for Mental Health (p>.05); no difference in proportions at 3Y Post-PRI (p>.05)
23. At 3M-Post, proportions were not different (p>.05; n.s.); at 6M Post-PRI, the proportions were different ($\chi 2(2)$=14.8, p=.001; φ = .50) and at 1Y ($\chi 2(2)$ =19.3, p<.001; φ = .6), and the numbers for 2Y post-PRI are too few to be meaningful.
24. Running away proportions are not different for completion at any time point (all p>.05; n.s.).

25. Epstein, N. B., Baldwin, L. M., & Bishop, D. S. (1983). The McMaster Family Assessment Device: General Function Sub-Scale.

26. Mean FAD for Cs were higher than NCs at 3M ($F_{(66)}$ = 4.2, p = .04, $\eta 2$ = .06), 6M ($F_{(58)}$ = 4.1, p = .05, $\eta 2$ = .07), 1Y ($F_{(53)}$ = 4.6, p = .04, $\eta 2$ = .08), but not at 2Y ($F_{(36)}$ = .8, p = .4, n.s.).

27. Means are lower for Cs than NCs for MOMS at 3M. Because group size were varied, and group variances were different (.3 for completers, 1.3 for non-completers, a Welch test on ranked data was performed ($F_{(35)}$ = 6.9, p = .01, $\eta 2$=.25), no different for DADS at 3M, MOMS or DADS at 6M (*ps* > .05, *n.s*), lower for Cs than NCs for MOMS at 1Y using Welch test on ranks due to group size and variance differences ($F_{(37)}$ = 59.4, p = .03, $\eta 2$=.12); no difference for DADS at 1Y ($F_{(27)}$ = .9, p = .4, *n.s.*)

28. Cummins & Lau, 2005.

29. Means not different for Cs and NCs at 3M, 6M, 1Y, or 2Y (all p > .05, *n.s.*).

30. Poportions are not different for Cs and NCs by BMI category at 3M, 6M, or 1Y (all p>.05; *n.s.*).

31. 3M Post-PRI Satisfaction was higher among Cs than NCs for: Individual Therapy ($F_{(63)}$ = 9.9, p = .002, $\eta 2$ = .14); Academics ($F_{(61)}$ = 5.9, p = .02, $\eta 2$ = .09); and, Group Therapy ($F_{(59)}$ = 4.4, p = .04, $\eta 2$ = .07). Satisfaction was not different between Cs and NCs for any other element of PRI (all *ps* > .05). Group sizes (C/NC) were: Admissions, OLE, and Overall Quality (45/25), Ind.Ther (45/20), Front Line (45/21), Groups (42/19), Family (44/15), Mentor (35/12), Academics (43/20), Retreat (37/14), Transition (4/45), Aftercare (45).Means not different for Cs and NCs at 3M, 6M, 1Y, or 2Y (all p > .05, *n.s.*).

32. 6M Post-PRI Satisfaction was higher among Cs than NCs for: Individual Therapy ($F_{(53)}$ = 7.2, p = .01, $\eta 2$ = .12); Mentor ($F_{(35)}$ = 8.0, p = .008, $\eta 2$ = .19); and Academics ($F_{(54)}$ = 5.8, p = .02, $\eta 2$ = .10). Satisfaction was not different between Cs and NCs for any other element of PRI (all *ps* > .05). Group sizes (C/NC) were: Admissions (42/19), OLE and Overall Quality (43/19), Ind.Ther (45/20), Front Line (43/14), Groups (40/12), Family (42/13), Mentor (31/6), Academics (42/14), Retreat (39/9), Transition (43/2), Aftercare (41).

33. 1Y Post-PRI Satisfaction was higher among Cs than NCs for: Academics ($F_{(48)}$ = 18.9, p < .001, $\eta 2$ = .28); Groups ($F_{(46)}$ = 8.1, p =.01, $\eta 2$ = .15); Retreat ($F_{(41)}$ = 6.2, p =.02, $\eta 2$ = .13). Satisfaction was not different between Cs and NCs for any other element of PRI (all *ps* > .05). Group sizes (C/NC) were: Admissions, OLE (36/20), OLE and Overall Quality (43/19), Ind.Ther (35/15), Front Line (36/15), Groups (34/14), Family (34/11), Mentor (29/9), Academics (42/14), Retreat (33/10), Transition (36), Aftercare (35).

If you have any questions or comments regarding this report, please contact
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