

Validation Research Studies of Key Indicator and Risk Assessment Methodologies in the Province of Saskatchewan

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Introduction

The purpose of this report is to document the validation process for the Province of Saskatchewan's Licensing Key Indicator Rules and their Risk Assessment Rules. These studies were completed in 2019-2020 and were completed with a sample of child care centres and homes in the province. The purpose of the evaluation was to determine if the measurement protocol inherent in the key indicator and risk assessment methodologies were consistent and produced the desired results. Presently the province has convened a program quality work group which when they have finished their work, it should provide guidance to undertake the other three validations of licensing systems: standards, outputs, and outcome validations (see Zellman & Fiene (2012), *Validation Framework for Quality Rating and Improvement Systems*, ACF Office of Planning, Research and Evaluation).

For the purposes of this report, this validation study will only focus on the abbreviated checklist to be utilized in the province of Saskatchewan which consists of the key indicator and risk assessment rules. Saskatchewan is one of the first jurisdictions to engage in a validation study utilizing both the key indicator and risk assessment methodologies. In the past with validation studies they have been done in validating either the key indicator or the risk assessment methodology. This study is unique and is highly recommended as an approach for other jurisdictions in moving the licensing, regulatory science, program monitoring, and evaluation fields forward.

Methodology

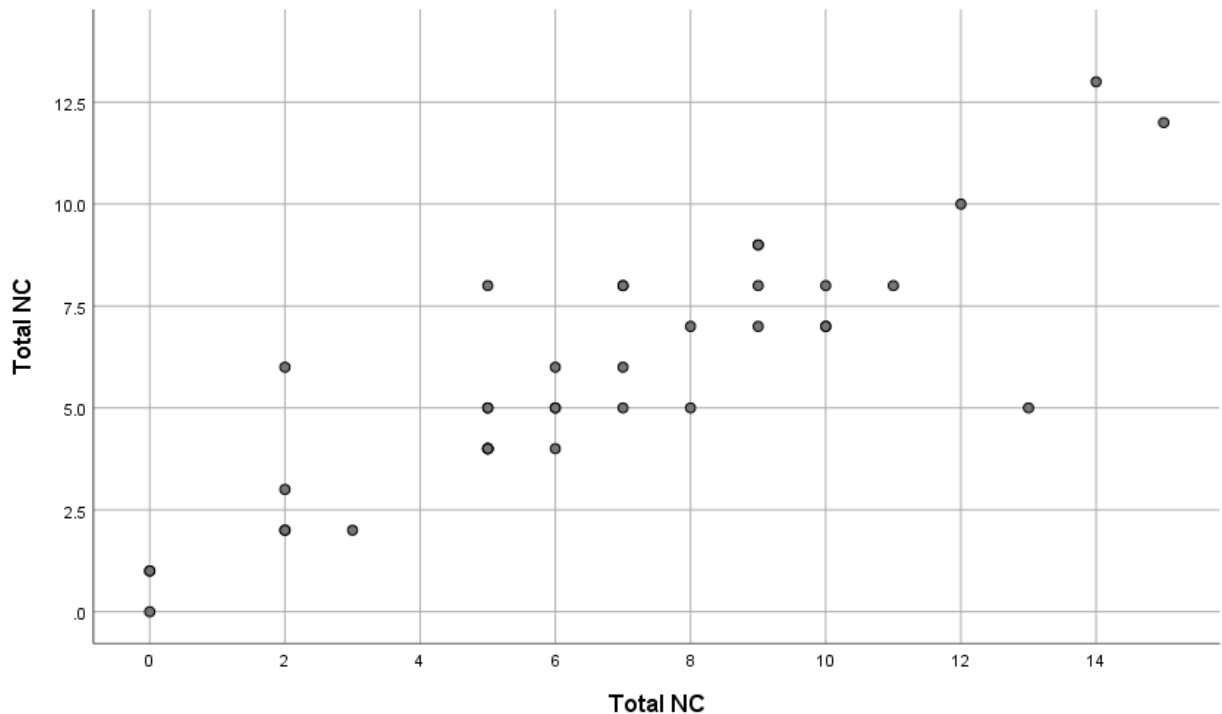
In this study, a sample of 38 child care centres (CCC) and 35 child care homes (FCC) were selected during a three-month time frame (Winter 2019-20). It was a convenience sample based upon when facilities were to be monitored. However, since the monitoring of facilities did not show any biases in their selection protocol, this sample can be dealt with as a valid representation of the Province. Licensing consultants did the reviews and collected the data. Again, licensing consultants who would normally review the programs during this time frame did so. The reviews/inspections were done in tandem independent of each other with two consultants visiting a facility one doing the abbreviated

inspection/review (key indicator and risk assessment rules only), the other consultant doing the comprehensive inspection/review looking at all the rules.

Results

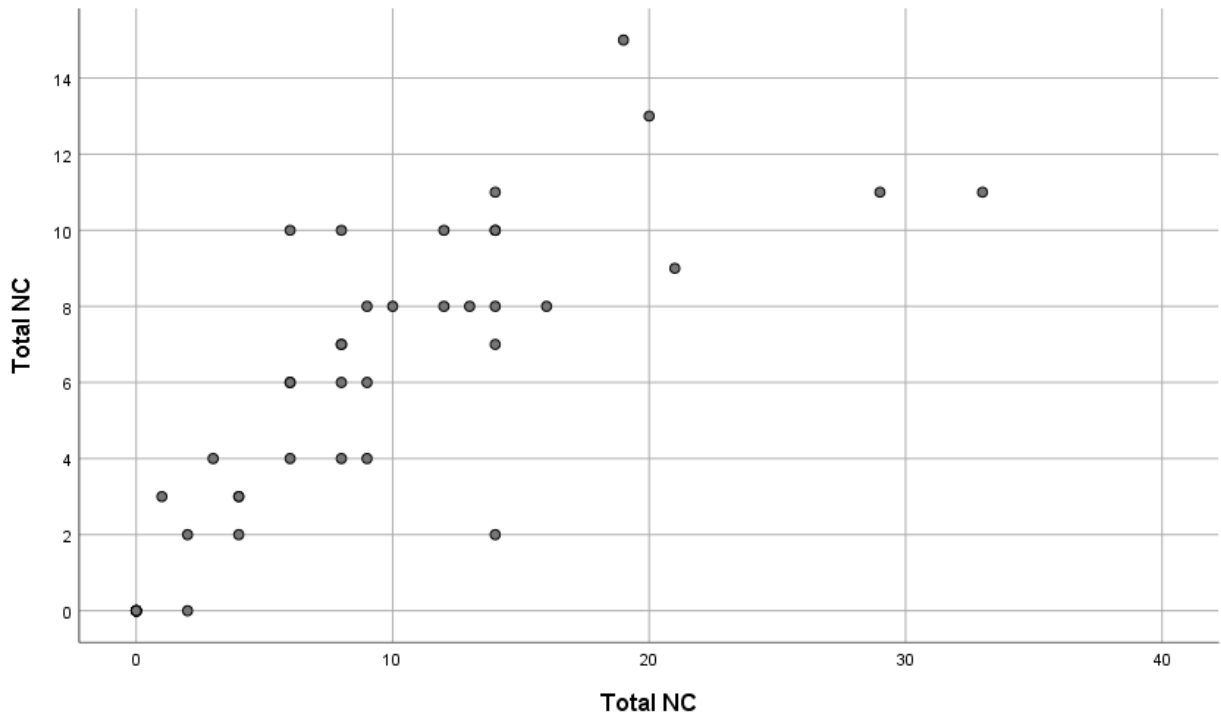
The results clearly validated the key indicator and risk assessment rules and the methodology. All the following results are statistically significant at the $p < .0001$ level with the exception of a couple of rules which are addressed in the final Discussion section of this report. The correlation between the abbreviated tool and the comprehensive tool for CCC was .86 (see Figure 1 for a graphic depiction of this relationship); while the correlation between the abbreviated tool and the comprehensive tool for FCC was .71 (see Figure 2 for a graphic depiction of this relationship). There was only one false negative in either the CCC or FCC observations in which the abbreviated tool indicated no non-compliances (NC) while 2 non-compliances (NC) were indicated on the comprehensive tool. False negative means that a program gets a perfect score on the abbreviated inspection but violations of regulatory compliance are found on the comprehensive inspection. A false positive is when no violations are found on the comprehensive inspection but violations are found on the abbreviated inspection – two cases were observed to meet this standard. There were no statistically significant differences amongst the licensing consultants scoring. Reliability IRR – Inter-Rater Reliability = .84.

Figure 1: Total CCC Non-Compliance (NC) Abbreviated Tool (Vertical Axis)/Total Non-Compliance (NC) Comprehensive Tool (Horizontal Axis)



$r = .86; p < .0001$

Figure 2: Total FCC NC Abbreviated Tool (Vertical Axis)/Total NC Comprehensive Tool (Horizontal Axis)



$r = .71; p < .0001$

The following charts (1-4) provide the correlations between the abbreviated tool and the comprehensive tool for each key indicator rule and each risk assessment rule. Chart 1 provides the results for CCC key indicator rules; Chart 2 provides the results for CCC risk assessment rules; Chart 3 provides the results for FCC key indicator rules; & Chart 4 provides the results for FCC risk assessment rules.

Chart 1: CCC Key Indicator Rules

Rule	Content of Rules	r
242a	Meals and snacks meet nutritional needs	.86
37bi	Obtain signature of parent monthly to verify hours/days of attendance	.89
37bii	Obtain signature of parent monthly to verify fee charges	.89
412b	Director and supervisor meets or exceeds the qualifications of ECEIII	.85
422b	Child care workers working for 65hrs or more/mo. meets or exceeds ECEI	.93

422c	30% of persons employed in the centre as child care workers for 65 hours or more meet or exceed the qualifications of ECE II	.94
422d	A further 20% of persons employed in the centre as child care workers for 65 hours or more meet or exceed the qualifications of ECE III	.85
431	May apply for exemption if unable to hire a director or supervisor whose qualifications meet requirements or child care workers whose qualifications meet the requirements	.82
442ai	Each individual employed in the centre for 65 hours or more per month as a centre, director, supervisor or child care worker has completed a first aid course	.93
442aii	Each individual employed in the centre for 65 hours or more per month as a centre, director, supervisor or child care worker has completed a course in cardiopulmonary resuscitation	.93
451	Criminal record check for each centre employee	.80
47b	Proof of first aid/CPR training	.85
47c	Results of criminal record check	.81

Chart 2: CCC Risk Assessment Rules

Rule	Content of Rules	r
81a	Health inspection	.93
81b	Fire inspection	.94
271a	Medication authorization is acquired	.81
271b	Written record of each dose of medication administered	1.00
271c	All non-emergency medications are stored in a locked enclosure	.65
272	Oral authorization in exceptional circumstances for administering non-prescription	1.00
28a	Unsafe items inaccessible	.52
28b	Poisonous substances locked	.76
28c	Cover radiator	1.00
28d	Cap electrical outlets	.70
49	Children must be adequately supervised at all times	1.00
523	Number of child care workers present is not less than the number required by applicable staff-to-child ratio	1.00

It is evident from Charts 1 and 2, the very strong relationship between the abbreviated key indicator and risk assessment rules and when these rules were assessed independently by a different licensing consultant during a comprehensive inspection. In moving on to Charts 3 and 4 for FCC, the results are not as quite robust but still statistically significant in all cases.

Chart 3: FCC Key Indicator Rules

Rule	Content of Rule	r
28b	Poisonous substances locked	.71
31	Appropriate and sufficient first aid supplies and inaccessible to children	.89

32	Portable record of emergency information for each child attending	.94
33b	Appropriate and sufficient first aid supplies	.71
362bii	Names, addresses and phone numbers of person to contact in an emergency	.70
362biii	Names, addresses and phone numbers of the child's medical practitioner	.83
362d	The child's immunization status (Child's Health Resume & Child's Emergency Information)	.74
362fii	Any authorization by the child's parent for an excursion involving transportation	.70
362h	The agreement for services	.48
37bi	Obtain signature of the parent monthly to verify hours/days of the child's attendance	.71
37bii	Obtain signature of the parent monthly to verify the fees charged	.83
38b	Insurance policy - liability coverage with respect to the transportation of children	.68

Chart 4: FCC Risk Assessment Rules

Rule	Content of Rule	r
10e	Criminal Record Check(s)	.85
21a	Equipment and furnishings – sanitary	.80
21b	Hygienic procedures are followed	.88
271a	Medication authorization is acquired	1.00
271b	Written record of each dose of medication administered	1.00
271c	All non-emergency medications are stored in a locked enclosure	.61
272	Oral authorization in exceptional circumstances for administering non-prescription	1.00
28a	Unsafe items inaccessible	.68
28c	Cover radiator	1.00
28d	Cap electrical outlets	.88
611	First aid certificate	1.00
612	CPR certificate	1.00
64a	A licensee of a GFCCH - maintain records for each assistant that includes: A copy of proof of training in first aid and CPR	.67
64b	The results of a criminal record check	.69
64d	Any emergency medical information	.90
64e	A copy of the proof of participation in continuing education	1.00

The FCC results appear to corroborate other findings in other jurisdictions over the years in which FCC scoring is lower than CCC scoring when it comes to reliability and validity. The results are still statistically significant in both cases but there is more consistency in the CCC scoring. This result is fairly typical. Additional research in this area will need to be done in order to ascertain the differences between CCC and FCC related to these results.

This study in Saskatchewan clearly demonstrates the efficacy of both the risk assessment and key indicator methodologies as effective and efficient approaches to utilizing an abbreviated protocol to

doing licensing inspections and determining substantial regulatory compliance. Other observations in interpreting the data analyses: The CCC key indicator rules were consistently higher in their validation scores than the risk assessment rules. The CCC key indicator rules were consistently higher in their validation scores than the FCC key indicator rules. With the FCC facilities, the risk assessment rules had higher validation scores than the key indicator rules. And finally, the risk assessment rules were consistently higher in their validation scores with FCC over the CCC facilities.

Charts 5 – 8 provide the regulatory compliance data (the number of non-compliances (NC)) with each of the key indicators and risk assessment rules for both CCC and FCC. The differences in NC for the key indicator and risk assessment rules are typical in that the key indicator rules distinguish between the highly compliant programs and those programs that have lower compliance levels. With the risk assessment rules, these are generally very heavily weighted rules where you would not find high levels of non-compliance (NC). So the results in the following charts and figure clearly demonstrate these relationships.

Figure 3 provides the regulatory compliance average number of non-compliances (NC) for both CCC and FCC with key indicator rules and risk assessment rules.

Chart 5: Non-Compliance (NC) with CCC Key Indicator Rules

Rule	Content of Rules	NC
242a	Meals and snacks meet nutritional needs	8
37bi	Obtain signature of parent monthly to verify hours/days of attendance	23
37bii	Obtain signature of parent monthly to verify fee charges	24
412b	Director and supervisor meets or exceeds the qualifications of ECEIII	4
422b	Child care workers working for 65hrs or more/mo. meets or exceeds ECEI	9
422c	30% of persons employed in the centre as child care workers for 65 hours or more meet or exceed the qualifications of ECE II	13
422d	A further 20% of persons employed in the centre as child care workers for 65 hours or more meet or exceed the qualifications of ECE III	9
431	May apply for exemption if unable to hire a director or supervisor whose qualifications meet requirements or child care workers whose qualifications meet the requirements	13
442ai	Each individual employed in the centre for 65 hours or more per month as a centre, director, supervisor or child care worker has completed a first aid course	10
442aaii	Each individual employed in the centre for 65 hours or more per month as a centre, director, supervisor or child care worker has completed a course in cardiopulmonary resuscitation	10
451	Criminal record check for each centre employee	6
47b	Proof of first aid/CPR training	3
47c	Results of criminal record check	8

Chart 6: Non-Compliance (NC) with CCC Risk Assessment Rules

Rule	Content of Rules	NC
81a	Health inspection	8
81b	Fire inspection	10
271a	Medication authorization is acquired	2
271b	Written record of each dose of medication administered	0
271c	All non-emergency medications are stored in a locked enclosure	5
272	Oral authorization in exceptional circumstances for administering non-prescription	0
28a	Unsafe items inaccessible	8
28b	Poisonous substances locked	13
28c	Cover radiator	0
28d	Cap electrical outlets	5
49	Children must be adequately supervised at all times	0
523	Number of child care workers present is not less than the number required by applicable staff-to-child ratio	0

Chart 7: Non-Compliance (NC) with FCC Key Indicator Rules

Rule	Content of Rule	NC
28b	Poisonous substances locked	15
31	Appropriate and sufficient first aid supplies and inaccessible to children	14
32	Portable record of emergency information for each child attending	12
33b	Appropriate and sufficient first aid supplies	15
362bii	Names, addresses and phone numbers of person to contact in an emergency	13
362biii	Names, addresses and phone numbers of the child's medical practitioner	19
362d	The child's immunization status (Child's Health Resume & Child's Emergency Information)	17
362fii	Any authorization by the child's parent for an excursion involving transportation	14
362h	The agreement for services	12
37bi	Obtain signature of the parent monthly to verify hours/days of the child's attendance	18
37bii	Obtain signature of the parent monthly to verify the fees charged	19
38b	Insurance policy - liability coverage with respect to the transportation of children	1

Chart 8: Non-Compliance (NC) with FCC Risk Assessment Rules

Rule	Content of Rule	NC
10e	Criminal Record Check(s)	3
21a	Equipment and furnishings – sanitary	2
21b	Hygienic procedures are followed	4
271a	Medication authorization is acquired	5
271b	Written record of each dose of medication administered	3

271c	All non-emergency medications are stored in a locked enclosure	8
272	Oral authorization in exceptional circumstances for administering non-prescription	0
28a	Unsafe items inaccessible	9
28c	Cover radiator	0
28d	Cap electrical outlets	4
611	First aid certificate	0
612	CPR certificate	0
64a	A licensee of a GFCCH - maintain records for each assistant that includes: A copy of proof of training in first aid and CPR	2
64b	The results of a criminal record check	1
64d	Any emergency medical information	7
64e	A copy of the proof of participation in continuing education	6

The following figure 3 summarizes the results from the previous 4 charts into one graph showing the average regulatory non-compliance for CCC and FCC for key indicator and risk assessment rules.

Figure 3: Regulatory Compliance (Non-Compliance) in CCC & FCC for KIM – Key Indicator Rules and RAM – Risk Assessment Rules

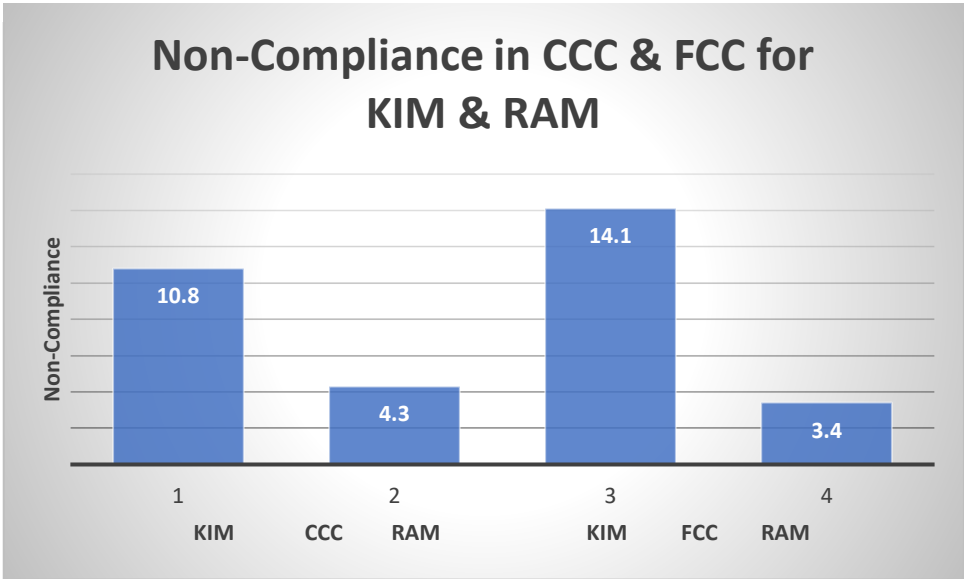


Figure 3 depicts the average differences between key indicator and risk assessment rules for both CCC and FCC facilities as discussed earlier in this report and depicted in Charts 5-8.

Discussion

There are several takeaways from this validation study in demonstrating that both key indicator rules and risk assessment rules, two abbreviated inspection approaches and examples of differential monitoring, as basically reliable and valid methods for assessing regulatory compliance in early care and education programs (child care centres (CCC) and family child care homes (FCC)). There were a couple of rules which did not reach the specific significance threshold ($p < .0001$) set for these types of validation studies: Rule 442d CCC and rule 362h FCC. But even in these cases the relationship between their presence on the abbreviated inspection tool and the comprehensive inspection tool was still statistically significant ($p < .01$).

Another interesting trend was that the CCC key indicator rules had higher validation scores and the key indicator rules had higher validation scores than the risk assessment rules. This is a result that needs to be replicated in future studies to determine why this is occurring since risk assessment rules as an approach is used approximately 2-3 times more often than the key indicator rule approach.

And lastly, the fact that there were so few false positives and negatives provides support to the validity and reliability of the two approaches. In doing this type of regulatory compliance research, false negatives are always a real concern and in 99% of the cases it was not an issue. In looking at both false positives and negatives, 96% of the cases were not an issue.

This study provides the first empirically based validation of both the key indicator and risk assessment methodologies as used within a differential monitoring or abbreviated inspection approach. It has clearly demonstrated the efficacy of these approaches when used in conjunction with each other. The study should provide guidance for future research in the regulatory science field.

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