



Identifying predictive indicators: The state of Washington foster care home study



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ABSTRACT

A mixed method correlational exploratory pilot was conducted in Washington State to determine items within the home study assessment that could be used as indicators to identify baseline requirements of the assessment and suggest anticipated depth (expansion or reduction) within the required topic(s). The purpose of the home study is to assess the caregiver(s)' ability to provide a safe home, the quality of care needed by children and an environment that is nurturing, respectful and supportive. The goal of this study is to identify predictive indicators that will assist in the development of a home study that will increase consistency within home studies and decrease timeliness of completion.

The use of predictive indicators may have the potential to reduce subjective decision making as well as identify inconsistencies when determining the recommendation of approval or denial of a home study. Additionally, with a carefully designed home study system inclusive of predictive analytics, it is possible to reduce the amount of time an assessor uses to approve or deny a home study, saving agency time and resources. Finally, by using focused technical assistance with those applicants who need more or specific support, the use of predictive indicators may increase the success of timely placement and permanency goals. This mixed method study included a case review of 207 home studies where 19 primary and secondary themes emerged as significant. It lays the ground work for methods used to identify predictive elements within the assessment process. Preliminary results are provided along with further recommendations.

1. Introduction

The field of child welfare unites around three major goals for children, youth, and families: safety, permanency, and well-being (Conradi, Landsverk, & Wotring, 2014). Nationwide, when a family wants to become a foster home, they are required to meet individual state requirements ensuring a child is safe and well cared for. Requirements around foster care licensing are designed to reduce predictable risks to the health, safety, and well-being of children placed in foster homes (Cuccaro-Alamin, Foust, Vaithianathan, & Putnam-Hornstein, 2017). These requirements, or state laws and policies vary widely from state to state (Gateway, 2018). Yet, despite the many years of home study practice and state and federal requirements mandating the use of home study, the home study tool itself has received little attention in the research world. With such limited research surrounding the home study process it is yet unknown how the home study process can be completed using tangible data collection and analyses in addition to the professional clinical judgment commonly used (Crea, Barth, & Chintapalli,

2007).

The variation in regulations combined with the vast differences in home study assessors' background and training often leads to assessment results that vary greatly (DePanfilis & Girvin, 2005; Rossi, Schuerman, & Budde, 1999). Rossi et al. (1999) conducted a study using regression analysis and found that while assessors utilized the same characteristics when making decisions, the decisions themselves varied greatly. More recently, some agencies have begun to employ various risk assessment tools throughout child welfare to improve decision making of child removal and placement into out of home care (Cuccaro-Alamin et al., 2017). However, Cuccaro-Alamin et al. (2017), highlight the fact that while standardized tools are often more effective than simple clinical judgement, there are also multiple operational and statistical limitations to using those tools including the tool's validity and reliability, the usability and cost, limited accuracy, and inconsistent use amongst others.

Washington state, like other states and countries employs the use of clinical tools when considering foster care licenses and placement. In

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Washington state, once a child is identified as needing out-of-home placement, removal is determined by law enforcement and/or court order, as recommended by Child Protective Services. Current policy states all placements must complete a home study (Department of Children, Youth, and Families, 2008). Home studies are completed through the Department of Children, Youth and Families (DCYF) Licensing Division. The purpose of the home study is to assess the caregiver(s)' ability to provide a safe home, the quality of care needed by children and an environment that is nurturing, respectful and supportive (Washington Administrative Code 110-148-1320, 110-148-1365).

If a child is placed in general foster care, the provider will have already completed a home study. The home study should be completed within 120 days of assignment. However, a child may be placed in kinship care (defined as a relative or suitable other) or in general foster care. Kinship care providers may elect to become a licensed foster parent, but if they choose not to, they are considered "unlicensed." When a child is placed in kinship care, a home study referral should be made to Licensing Division within 30 days of out-of-home placement. The goal of this study is to identify elements within a home study that are indicators that will assist in the development of a home study that could increase consistency and decrease timeliness of completion.

At any given time, there are approximately 1500 pending applications assigned to Licensing Division staff. Each application requires a completed home study unless the applicant chooses to withdraw from the process. In addition, there are approximately 400 un-referred home studies that will increase the pending workload once referred. The un-referred home studies result from identification of children who have been placed in out-of-home care, but a referral has not yet been made to Licensing Division. Due to the high volume of pending applications and the amount of time it takes to complete the home study, there has been a long standing backlog (pending over 120 days) of incomplete home studies. As of December 2019, there were a total 627 (42% of the total pending application) pending for over 120 days.

Due to the increasing issues surrounding the backlog of home studies, Licensing Division assessed the home study forms and processes for efficiency and consistency. During the review, it was important to consider effectiveness in conjunction with efficiency within the family assessment tools. The problem is there is not a clear understanding of what effectiveness means, in terms of the home study. Broad goals of safety, permanency and well-being of children in foster care are often quoted without a clear indication of what specific items lead to adverse determinations. The purpose of this study was to identify indicators that could assist assessors in the identification of specific concerns earlier in the home study process.

The use of predicative analytics is a relatively new tool being used in child welfare systems in order to assist with decision making tools (Capatosto, 2017). In line with the emerging possibilities, indicators could statistically predict further compliance with licensing rules and systems and do not have a direct connection to risk levels. In other words, they are not the components of a home study that will be the basis of a home study denial or license revocation but may identify the need to look deeper into individual sections. The goal of identifying and incorporating predictive indicators within the home study is to improve decision-making and to support clinical judgment thereby increasing consistency and effectiveness of the tool itself. Furthermore, when an indicator is not found during an inspection it could predict further acceptable findings and could potentially shorten the amount of time spent on the home study itself saving (or reallocating) assessor time. For this purpose, there were two main research questions: (1) What are the singular thematic items within a home study based on the provider type and the licensing actions that inform the need for further investigation, (2) what are the thematic items within a home study that inform the need for further investigation based on frequency or patterns in relation to home study denials and revocations?

1.1. Definitions

- **Licensed Adoptive:** A provider that is licensed, or becoming licensed for the purpose of adoption.
- **Licensed General:** A provider that is licensed and is not identified as a relative or suitable other and is not currently planning to provide permanency (adoption or guardianship).
- **Licensed Kinship¹:** A provider that is licensed and is identified as being a relative to the foster child.
- **Licensed Suitable Other²:** A provider that is licensed and is identified as having a relationship with the foster child or the child's family prior to placement.
- **Unlicensed Adoptive:** A family member or suitable other that is seeking the home study for the purpose of adoption only and is not seeking licensure.
- **Unlicensed Kinship/Suitable other:** A family member or other that had a relationship with the child prior to placement and wishes to remain unlicensed.
- **Unified Home Study:** A comprehensive assessment that evaluates potential and/or current caregiver(s), and the physical environment and includes a recommendation pertaining to placement and permanency.
- **ICPC:** Interstate Compact on Placement of Children, refer to RCW 26.34

2. Methods and materials

A mixed method correlational exploratory research design was used to identify indicators (Greene, Caracelli, & Graham, 1989). This method was chosen to explore correlations of thematic identifiers within a sample of archived home studies. Through the review of individual home studies, qualitative descriptive themes were identified, both positive and potentially alarming, in order to map common concerns between the various archived home studies and their outcomes. Descriptors were coded into alphabetical (and ultimately numerical) themes allowing for quantitative analysis.

2.1. Participants

All Licensing Division foster care supervisors and area administrators, state administrators and Continuous Quality Improvement (CQI) personnel reviewed a total of 207 home studies. Supervisors from the 15 licensing offices (inclusive of satellite offices) not only participated but also identified one or two assessor(s) from each office to complete the reviews. In total, there were 15 supervisors, 15 licensors, six area administrators, three statewide administrators and three Continuous Quality Improvement (CQI) personnel who reviewed the home studies. Home study reviews were assigned across regions to ensure a limitation of personal bias by any supervisor, area administrator or licensor who may have personal investment or knowledge of any particular case. In addition, participants were asked to request a reassignment for any home study they may have personally worked on. In total, three cases were re-assigned during the process. Each participant reviewed approximately five home studies over a period of two months.

2.2. Sample

Two-hundred and seven (207) case studies were identified through a combination of convenient and proportionate stratified sampling

¹ Relative: As defined in RCW 74.15.020(2)(a), a person who is related to the child, expectant mother, or person with developmental disability...

² Suitable other: As defined in RCW 13.34.130, a person who the child or family has a preexisting relationship with...

Table 1
Total Percentage of Licensed State Home VS. Case Reviews per Region.

	Region 1	Region 2	Region 3	Region 4	Region 5	Region 6	Total
Total Licensed Homes	746	390	498	392	381	857	3264
Total Case Reviews	49	23	31	24	24	56	207
Percentage	23%	11%	15%	12%	12%	27%	100%

measures ensuring statewide representation. The convenient sample included all home studies that were not recommended for approval (denial) and did not result in a foster care license as well as those that were approved but the license resulted in a revocation, or the cancellation of the license, any time after licensure. Qualifiers for the sample included: (1) Home studies had to be no older than 2013 because prior to that they weren't scanned into the electronic database, (2) Verification that the home study was available in the electronic database and, (3) Home studies had to be un-restricted (accessible to DCYF staff with normal permissions).

Secondly, all providers (licensed or unlicensed) that had an adoption that wasn't completed for any reason, and met the criteria listed above, were added to the convenient sample. The remaining amount of providers needed within regions included approved providers, both licensed and unlicensed, and were selected through proportionate stratified random sampling, assessed for usability and added to the sample ensuring the amount of cases mirrored the percentages of caseloads assigned to each of the state's six regions. [Table 1](#) represents the sample size according to the six regional caseload percentages.

As an added measure to ensure representation of the sample, the license type, or purpose, was also recorded. While the majority of home studies completed in this time period were considered "Unified" (completed for permanency, to include adoption) the identified purpose of the home study by the applicant was often for different purposes. This included; licensed adoptive, licensed general, licensed kinship, unlicensed adoptive, unlicensed kinship, unlicensed ICPC. [Table 2](#) outlines the home study type.

2.3. Tools

A data collection tool, produced in Microsoft Publisher and tested by the Continuous Quality Improvement (CQI) team was provided (in conjunction with detailed instructions) to each of the review teams. Data collectors were instructed to record all individual items listed in a home study, any recorded licensing violations including: intakes and/or findings pertaining to licensing infractions and/or allegations of child abuse, negligent treatment or maltreatment, and any documented concerns outside of licensing violations. For example, an unlicensed home study would not have licensing violations documented, but may include concerns that pertain to safety, well-being and/or permanency. Data collectors were also instructed to record the provider's statement of purpose within the home study (i.e. licensed, unlicensed, kinship, adoption, etc.). Once returned, data from each data collector was input with the corresponding ID number into the Excel tracking sheet specifically designed to identify licensing decisions, final requirements cited in the decision making process, and all individual items documented in the home study leading to the final recommendations. Coding was completed using a combination of Excel for thematic counts and the secondary analysis as well as IBM/SPSS version 26 for statistical analysis in order to determine the modifying effects of the overall demographics as well as identifying the predictors.

Table 2
Sample Provider Types.

Provider Type	Licensed Adoptive	Licensed General	Licensed Kinship	Unlicensed Adoptive	Unlicensed Kinship	Unlicensed ICPC
Count	39	105	14	12	36	1

2.4. Coding/analytcs

In order to create a data set for statistical analysis, it was critical to code qualitative data found within each home study. Each home study was de-identified and assigned a participation number in Excel and all themes were recorded for each case. Once the qualitative data was input into a spreadsheet, each statement was assigned a parent theme (or general classification based on the topic of each theme). Twenty-six parent themes (those qualitative topics that had general likeness) were identified and assigned followed by assignment of child themes (those items within a parent theme with detailed likeness based on the theme). For example, medical needs (MN) was identified as a parent theme and included specific conditions (child themes) such as diabetes, heart conditions, physical limitations and so on. 341 child themes were created to break the parent theme data into specific categories.

Once parent and child themes were assigned, the combination of all adult and child themes resulted in 64 final codes. These codes were then counted individually in each home study for the number of times they were mentioned. Through the coding process it was possible for themes to be mentioned more than once in a single home study. For example, an applicant may have expressed multiple medical needs (MN) such as issues with diabetes and a heart condition resulting in the code mentioned twice in one home study. Another example could be that an applicant mentioned they occasionally drink alcohol, smoke regularly and use marijuana resulting in the code drug and alcohol abuse or use (DAAU) being mentioned three times. The final code legend can be found in [Appendix A](#). Once the coding was completed, statistical analysis was applied.

2.5. Methodology and data analysis plan for indicators

The methodology used to generate the indicators was drawn and modified from the regulatory compliance and licensing research literature where this methodology has been used a great deal in making monitoring decisions (Licensing Key Indicator Methodology – LKIM (Fiene, 1985). The Licensing Key Indicator Methodology (LKIM) was used because it has proven to be very effective in dealing with nominally measured data that are extremely skewed (Fiene & Nixon, 1985).

The first step in the LKIM is to sort the frequency data from the various themes into high and low groups. This created a dichotomization of the frequency distribution that could then be used in a 2×2 matrix where each respective theme was compared to determine if it were in the high or low group (see [Chart 1](#) below). In other words, a Likelihood Ratio was calculated. Only those themes that either reached or exceeded a 0.75 agreement between having been observed and having the ability to distinguish between those homes where this was generally the case or not in the aggregate (total number of themes present). [Chart 1](#) provides a depiction of the relationship between each of the themes and the overall possible aggregate score of all the themes.

	High Group – Other Themes present	Low Group – Other Themes not present
Observed	Present	Absent
Not Observed	Absent	Present

Chart 1. Comparison of Individual Themes with High vs Low Group (Aggregated Themes).

2.6. Primary statistical analysis

IBM/SPSS Version 26 was used to analyze the data for this study. Basic demographics, (provider type and recommendation) and frequencies were run as well as a correlational analysis to explore relationships amongst the coded themes, licensing actions (inclusive of licensed revocations and unlicensed home study denials), and licensing violations. Third, analysis of variance (ANOVA) was done using one test to explore differences between provider types and the outcome variable of licensing violation data. And lastly, a 2 × 2 matrix was constructed in order to determine if specific codes could predict overall thematic success or failures by occurrence frequencies in either a high or low grouping. These analyses were performed on approximately 50 coded themes identified earlier in this paper and the various categories of homes: Licensed homes, Unlicensed homes, Licensing status of homes.

2.7. Secondary statistical analysis

Through the coding process it was possible for themes to be mentioned more than once in a single home study. For example, an applicant may have expressed multiple medical needs (MN) such as issues with diabetes and a heart condition resulting in the code mentioned twice in one home study. Another example could be that an applicant mentioned they occasionally drink alcohol, smoke regularly and use marijuana resulting in the code drug and alcohol abuse or use (DAAU) being mentioned three times. A secondary set of analytics was completed in order to identify codes based on frequency or multiple patterns within the same theme of a home study assessment.

This set of analytics was run in order to address how some items are not indicators until a pattern is discovered. This was done by first isolating all rows of the excel dataset indicating a denial (D) or revocation (R) regardless of provider type. Isolated items were placed into a 5 by 5 grid showing each combination of prevalent items. An example can be seen in Chart 2. A divisive approach using complete linkage was then used taking the occurrence of the first matrix and applying it to the primary codes for comparison. This was done to identify the individual activities most commonly found in conjuncture with the codes within the denial and revocation status. Once both analyses were complete, significant codes found in the primary and secondary analyses were cross referenced to narrow the results to one overall set of indicators.

3. Results

It was found that the average number of licensing violations per home was just less than two (1.85 licensing violations), that the average length of a license was 41 months with a range of one to 137 months, and the average number of themed codes mentioned in a home study was eight. Correlational analyses determined there were significant

relationships between licensing violations and the licensing status of the homes, $r = -0.66, p < .0001, n = 207$.

Analysis of Variance (ANOVA) assessed the licensing violations by provider type and a significant difference was found ($F = 3.501, p < .005, n = 207$) with average violations ranging from 2.45 for licensed general homes to 2.10 licensed adoptive homes to 1.86 for licensed kinship homes. The following results (see Fig. 1) describes the codes found within the 2 × 2 primary analysis (Chart 1) as described in the methodology section above in which specific themes predict that other themes will be present in the aggregate. The results are presented with all the types of homes used, licensed homes, unlicensed homes, revocations, denials, compliant and finally licensed general homes. Note, the plus and minus within Fig. 1 is visual representation that an indicator may or may not be positive or negative. For example, the experience of childhood trauma may be considered positive in a home study if it contributed to a person’s resiliency and/or ability to relate to children who have experienced trauma. However, it may be considered negative if the childhood trauma is being re-experienced by the caregiver and it impacts their ability to provide care to children.

From Fig. 1, it can be determined that educational success (ES) and positive family relationships (PFR) are the two coded themes that appear as themes in all the above listed categories. Home/Community Safety (HCS) was found in all areas except unlicensed homes: However, because HCS was found significant within denials, which is inclusive of unlicensed providers, this is an issue in unlicensed homes as well. Lack of stability of finances and work (FWUS) along with marriage/partnership issues (MPI) appear as other predictor indicators in four of the categories making them applicable to all provider types.

Logistic regression was then used by pairing the various codes within denial and revocation cases in combinations until there was no observable grouping which occurred in more than 24% of the time. A duplicated regression was done on cases where the same codes were present but the case did not result in a revocation or denial with the same results. This indicated that no grouping of two violations together were statistically relevant when there was a case of denial or revocation. Additionally, while looking at the home studies where single codes were found multiple times, we isolated the denial and revocation cases to remove any findings in non-problematic cases to remove false positives. The purpose of viewing the data through this particular lens was to remove any code that may have been found with multiple findings in cases that were never denied or revoked taken. The fact that some compliant rated home studies also showed some of these codes in duplicate did not disprove the finding’s relevance as they are seen as possible predictive indicators that something may be going on that is critical in nature and warrants further investigation. If multiple findings of the same code were found in all three home study results then the number of times it was found in compliant cases and in denial or revocation were compared and only items that happened more in denial

CASES	AC	ANDA	ANDC	AUL	BCCL
AC	2	2	3	0	2
ANDA	4	9	4	1	3
ANDC	3	2	4	0	5
AUL	1	2	1	12	3
BCCL	1	3	0	3	18

Chart 2. 5 by 5 Secondary Cluster Analysis Example.

	CCI	AC	ES	FWUS	HCS	CTR	MPI	MH	RA	PFR	BCC	MRS	RLA	MI	UF	REN	FWS
1			+	-	+		-		+	+							
2			+	-	+					+	+						
3			+				-		+	+						-	
4	-	+	+	-	+	+-	-	+-	+	+	+	+	+				
5			+	-	+					+				+	+-		
6			+	-	+		-		+	+							
7			+		+		-			+	+	+					+

Fig. 1. Coded Themes and Categories of Homes. Legend: 1 = All Homes; 2 = All Licensed Homes; 3 = All Unlicensed Homes; 4 = Revocations; 5 = Denials; 6 = All Compliant; 7 = Licensed General Homes. CCI = CHILDHOOD CHALLENGES OR INSTABILITY; AC = APPLICANT COOPERATIVE; ES = EDUCATIONAL SUCCESS; FWUS = FINANCIAL/WORK UNSTABLE; HCS = HOME/COMMUNITY SAFETY; CTR = CHILD TRAIT REQUESTS; MPI = MARRIAGE/PARTNERSHIP ISSUES; MH = MENTAL HEALTH; RA = RESOURCES AVAILABLE; PFR = POSITIVE FAMILY RELATIONSHIPS; BCC = BACKGROUND CHECKS CLEARED; MRS = MARRIAGE RELATIONSHIP STABLE; RLA = RELIGIOUS AFFILIATION; MI = MILITARY; UF = UNSUPPORTIVE REFERENCES; REN = RELIGION NONE; FWS = FINANCIAL WORK STABLE.

and revocation cases were found.

In the 16 identified secondary indicators, less than 20% of compliant home studies showed multiple secondary indicators which was a factor used in refining all duplicate indicator findings down to the relevant ones for denial and revocation. This secondary cluster analysis of these repetitive codes indicated an overwhelming association that specific codes, considered minor in their own, may lead to denial or revocation when they are identified more frequently within the same home study. When sixteen of the codes used in identifying themes occurred more than once within the same case denial or revocation was recommended. It is important to note that not all violations appeared on each case, and not all had the same multiple findings of a specific code. Overall, home studies with more than one finding of these sixteen codes were denied or revoked in 76.6% of all cases in this study as demonstrated in Fig. 2.

The total 27 codes from the primary and secondary analysis were cross-referenced with one another in order to identify duplicate codes found in both analyses. Results are presented in Fig. 3. Because many of the codes were inherently the inverse of one another (i.e. Marriage/Partnership Instability vs. Marriage/Partnership Stability), each code was classified into three categories on how they were related between the two analyses; direct, indirect and not related. "Direct" means that the two codes found within both analyses were the same. "Indirect" means that while the codes were different, the theme was within the same intent of the parent theme. "Not related" references codes that were unique to the primary or secondary analysis. The purpose was to limit duplicative themes through highlighting bivariate associations.

As can be seen in Fig. 2, six codes from the secondary analysis emerged that were not related, either directly or indirectly, to the primary indicators. They include: abuse, neglect, domestic violence as an adult (ANDA), drug and alcohol abuse or use (DAAU), inappropriate discipline (DI), concerns identified with the family of origin (FOCI), medical needs (MN) and, self-identified challenges/lack of insight (SICLI).

4. Discussion

It is important to provide this preliminary study to introduce the parameters of locating and identifying emergent themes within the home study that could be used to guide depth of assessment as well as possible frequency of support. Through this study, we are able to identify 13 preliminary indicators within the foster care home study currently being used throughout the state. These categories combine both the inclusion and absence of the topic (i.e. educational success and educational challenges). They include; childhood experiences, level of cooperation, educational success, financial/work stability, home and/or community safety, child trait requested, marriage/partnership stability, mental health, availability of resources, current family relationships, background check clearance, religious affiliations, military, references.

Not all indicators within the first analysis applied to all provider types. Due to some codes being more significant within the varied provider types, this study demonstrates a pathway to differentiate a home study based on provider types (licensed versus unlicensed) and outcomes (revoked, denied and good standing). There are some indicators that apply only when considering a licensed general foster home study while others apply to a greater extent in unlicensed home studies. For example, marriage/relationship stable (MRS), background check clearance (BCC), applicant cooperative (AC), and childhood challenges or instability (CCI) only appeared as indicators in licensed general home studies while unsupportive references (UR), lack of religious affiliation (REN) and military (MI) only showed as indicators in unlicensed home studies. Likewise, several indicators are already specific for the type of home study needed. For example, child trait requested (CTR) is only applicable in licensed foster care because kinship care involves an identified family member or friend of the family, making the need to specify age, gender and ability of a child irrelevant.

Finally, the secondary analytics was able to identify items that while not an indicator when mentioned only once within a home study did become an indicator when found more than once. These repeated items

ANDA	ANDC	AUL	BCCL	DAAU	DFR	DI	ES	FOCI	FWUS	HCS	MH	MN	MPI	PFR	SICLI
0.91%	3.64%	7.27%	9.09%	0.91%	0.91%	1.82%	0.91%	0.91%	2.73%	4.55%	3.64%	0.91%	0.91%	0.91%	3.64%

Fig. 2. Percentage of codes mentioned more than Once in Denied or Revoked Home Studies. Legend: ANDA = ABUSE NEGLECT DOMESTIC VIOLANCE ADULT; ANDC = ABUSE NEGLECT DOMESTIC VIOLANCE CHILD; AUL = APPLICANT UNCOOPERATIVE/LIED; BCCL = BACKGROUND CHECK CLEARED; DAAU = DRUG ALCOHOL ABUSE/USE; DFR = DIFFICULT FAMILY RELATIONSHIPS; DI = DISCIPLIN INAPPROPRIATE; ES = EDUCATIONAL SUCCESS; FOCI = FAMILY OF ORIGIN CONCERNS IDENTIFIED; FWUS = FINANCIAL/WORK UNSTABLE; HCS = HOME/COMMUNITY SAFETY; MH = MENTAL HEALTH; MN = MEDICAL NEEDS; MPI = MARRIAGE/PARTNERSHIP ISSUES; PFR = POSITIVE FAMILY RELATIONSHIPS; SICLI = SELF IDENTIFIED CHALLENGES/LACK OF INSIGHT.

Indicator based on single occurrence	Indicator based on pattern or repeat occurrences	Indirectly related	Directly related	Not related
CCI	ANDC	X		
AC	AUL	X		
ES	ES		X	
FWUS/FWS	FWUS		X	
HCS	HCS		X	
CTR				X
MPI	MPI		X	
MH	MH		X	
RA				X
PFR	DFR		X	
BCC	BCCL	X		
MRS/MPI	MPI	X		
RLA				X
MI				X
UF				X
REN				X
FWS		X		
DFR		X		
ANDC		X		
AUL		X		
BCCL		X		
	DAAU			X
	ANDA			X
	DI			X
	FOCI			X
	MN			X
	SICLI			X

Fig. 3. Primary and Secondary Comparison: Identifying Duplicative and Dependent Findings. *Legend:* CCI = CHILDHOOD CHALLENGES OR INSTABILITY; AC = APPLICANT COOPERATIVE; ES = EDUCATIONAL SUCCESS; FWUS = FINANCIAL/WORK UNSTABLE; HCS = HOME/COMMUNITY SAFETY; CTR = CHILD TRAIT REQUESTS; MPI = MARRIAGE/PARTNERSHIP ISSUES; MH = MENTAL HEALTH; RA = RESOURCES AVAILABLE; PFR = POSITIVE FAMILY RELATIONSHIPS; BCC = BACKGROUND CHECKS CLEARED; MRS = MARRIAGE RELATIONSHIP STABLE; RLA = RELIGIOUS AFFILIATION; MI = MILITARY; UF = UNSUPPORTIVE REFERENCES; REN = RELIGION NONE; FWS = FINANCIAL WORK STABLE; ANDA = ABUSE NEGLECT DOMESTIC VIOLENCE ADULT; AUL = APPLICANT UNCOOPERATIVE/LIED; BACKGROUND CHECK CLEARED; DAAU = DRUG ALCOHOL ABUSE/USE; DFR = DIFFICULT FAMILY RELATIONSHIPS; DI = DISCIPLIN INAPPROPRIATE; FOCI = FAMILY OF ORIGIN CONCERNS IDENTIFIED; MN = MEDICAL NEEDS; SICLI = SELF IDENTIFIED CHALLENGES/LACK OF INSIGHT.

began to show patterns within certain codes. The cases in which they did happen showed a significant chance of having other issues which were considered problematic. This leads to the conclusion that items found in groupings also meets the indicator definition and shows that minor findings in key patterns may create scenarios that, while not being serious enough to cause a denial or revocation themselves, warrant further investigation and or mitigation strategies before a home study is approved. For example, an assessor may not have enough information to justify a denial and also have concerns that are preventing them from approving the home study, but upon finding multiple sightings of the same minor indicators it could give reason for further investigation in some areas.

Four specific limitations were identified; sample size, consistency of data collection, individual bias and systematic bias. Each of these limitations were known from the beginning of the project and while addressed throughout could not be completely mitigated.

Because home study data points are not recorded in an electronic database, consideration to the amount of time and limited resources available was considered. There are approximately 2250 homes studies

completed each year; this sample (207) represents only 9.2% of the annual statewide home study caseload. Ideally, the sample would be 20% of all home studies totaling closer to 400 home study reviews in order to provide smaller margins for error and increase the capacity of finding significant differences within the codes.

While data collection training was provided, the fact that all 207 home studies were reviewed by 39 data collectors with varying degrees of effort and interpretation resulted in unknown and potentially limited inter-rater reliability. This can be seen by the fact that recorded themes on the homes studies varied between one thematic discovery to 48 discoveries. In order to address this limitation, resources need to be provided to limit data collector numbers as well as provide precision training.

Another challenge identified was individual assessor bias. The fact that home studies are summary assessments with very broad categories inherently lends to predispositions or individual bias. While assessors are provided guidance and general questions to ask the applicants, the results are often open to interpretation and may be influenced by individual bias of the assessor themselves. Due to the racial, ethnic,

cultural, gender, and economical predispositions of the home study team, unintended bias within the home study could have led to a distortion in the original data. The level of impact of individual bias to this study is unknown.

Finally, DCYF is committed to identifying and limiting systematic racial disparity within the agency's entire child welfare system. In a 2018 report, it was found that the rate of children entering placement in Washington varied depending on the ethnic group. For example, children of native American Indian/Alaskan Native (AI/AN) were removed from their homes at a higher proportional rate than children of other ethnic groups. Placement of black children/youth were only slightly higher than white children and children of Asian or Pacific Island ethnicity were less likely to be placed than white children (Graham, 2019). In contrast, the racial and ethnic make-up of the foster care provider community in Washington State is largely white at approximately 75%. Because of this known limitation, it is possible disproportionality and systemic bias will continue to be reflected through the use of the identified indicators.

5. Recommendations

We assume the use of indicators may have the potential to reduce subjective decision making and bias by creating an avenue for consistency in home study assessments and guidance for recommended approvals or denials. This can be done by identifying areas that may predict unsuccessful placement. It is possible this will provide guidance to assessors when further assessment and mitigation is needed. Additionally, with a carefully designed home study tool it should be possible to reduce the amount of time an assessor uses to approve or deny a home study, saving agency time and resources. Finally, by differentiating and focusing technical assistance to those applicants that need more or specific support, the use of indicators may increase the success of timely placement and permanency. However, in order to assess and evaluate if the above assumptions are correct, it is critical to design a system that collects the data for validation and reliability purposes.

In order to use the indicators, they must be systematically and intentionally imbedded in the home study sections as direct questions which could be pre-populated based on the applicant's responses on the application. Due to the potential bias limitations, indicators should not be used as a tool to recommend or not recommend placement or permanency. Therefore, it is recommended that indicators are used as a tool to identify potential areas that need additional information within a home study and require mitigation assessments as needed. There are two recommendations for indicator use: 1) further assessment before determination and, 2) frequency of monitoring post assessment.

Further Assessment: Indicators, when encountered within a home study, could require an assessor to gather further information before assurances of mitigation can be determined. For example, if it is determined one or more applicant did not complete a high school (ES) degree or GED an assessor would ask additional questions pre-identified by the system such as "What were the factors that contributed to the incomplete education?" and "What are the belief systems regarding education for potential foster children?". If an assessor determines a mitigation is successful based on the interview responses, they move onto the next section. If an assessor determines a mitigation is not successful, or there is not enough information, they could require additional actions such as training or the review of a topic-specific resource.

Frequency of Monitoring: A second strategy that could be used with

indicators is to set a threshold of key indicators within any one home study whereby additional, or more frequent post licensing monitoring visits should be completed. This strategy would only be applicable for licensed providers as unlicensed providers are not required to have ongoing monitoring. For example, if three different indicators are present determined by the assessor's review of the applicants' answers, the recommendation could be made that a health and safety check will be completed within six months' time, upon placement. If four or more indicators are present, a health and safety check could be required with 4 months of placement, etc.

It is important to continuously evaluate the predicative indicators within the home study assessment. This is to ensure comprehensive and up-to-date data are considered, how changes to policy and practice affect the model, and whether the model needs to be changed or modified. Ongoing evaluation should consider if staff are implementing and using the home study approach as intended. Validation should include a larger data set of home study components inclusive of these identified indicators.

6. Conclusion

There are many potential uses of indicators within the home study process. Once Washington systemizes how they will be used, additional validation studies will be developed to ensure appropriate identification and use as well as identifying any unintended consequences before moving forward with implementation. It is critical to remember that thematic identification of indicators does not definitively inform the assessor of the outcome or determine the recommendation of the home study. However, it is possible indicators may help improve consistency by identifying emerging patterns and limiting variations in decision-making. They could also help ensure applicants statewide are being assessed and treated similarly.

The purpose of the home study is to assess the caregiver(s)' ability to provide a safe home, the quality of care needed by children and an environment that is nurturing, respectful and supportive (WAC 110-148-1320, 110-148-1365). To measure whether or not that goal is being met, ongoing research and validation is needed. This study was conducted to initially identify indicators or predictors that would assist licensors with identification of broader concerns early on in the home study. This study classifies what are considered universal, licensed (general), unlicensed (kinship) and repeat or pattern indicators. All of which will help with identifying what areas of the home study should have more, or less, depth.

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CRedit authorship contribution statement

Sonya Stevens: Conceptualization, Methodology, Data curation, Project administration, Supervision, Writing - original draft, Resources.
Richard Fiene: Formal analysis, Validation, Writing - review & editing.
Daniel Blevins: Conceptualization, Formal analysis, Validation.
Amber Salzer: Resources, Data curation, Writing - review & editing.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Appendix A. Code identification sheet

Code	Theme	Description
ACAC	Adult child Adverse Experiences	One or more adult child(ren) of an applicant experienced adverse experiences such as abuse, homelessness, substance use or mental health issues.
ANDC	Abuse Neglect Domestic Violence Child	One or more applicant experiences Abuse and/or neglect as a child which may include inappropriate discipline such as spanking, restraining or withholding food.
CCI	Childhood Challenges or Instability	Applicant reported non-abuse related challenges during childhood such as (but not limited to) instability, bullying at school or difficulty with friends.
BCCL	Background Check Issues Identified (including license actions)	One or more applicant has one or more issues identified during a background check which may have included one or more of the following: Criminal, founded findings, licensing violations, traffic violations, etc.
HB	Healthy Boundaries	The applicant has healthy relationships and boundaries with others
AC	Applicant cooperative	The applicant was cooperative during the licensing process
AUL	Applicant Uncooperative or Lied	One or more applicant was either uncooperative during the licensing process by delaying or refusing to meet requirements or lied or withheld information during interviews or on paperwork.
DA	Discipline appropriate	Discipline and guidance used in the home is appropriate
DI	Discipline Inappropriate	Discipline and/or guidance used in the home is inappropriate including but not limited to spanking, isolation, food restrictions, etc.
ID	Inclusive of Diversity	Inclusive of Diversity including race, ethnicity, ability and sexual orientation
DD	Difficulty Diversity	Difficulty with Diversity including but not limited to race, ethnicity, ability and sexual orientation
ECDO	Educational Challenges or Drop out	One or more applicant experienced challenges in school such as dropping out, being expelled or self-inflicting unrealistic expectations toward education.
ES	Educational Success	One or more applicant was successful in school through high school or GED completion and perhaps completing some or all of a college degree.
FWS	Financial/Work Stable	The applicants reported financial stability as well as having stable employment.
FWUS	Financial/Work Unstable	The applicant reported unstable personal finances and/or unstable work meaning unemployment, frequent changes in employment or inability to work.
HCS	Home/Community Safety	The licensor reported one or more concerns regarding the safety of the home or community such as mold, unstable stairs or floors, elements in or near the home such as bodies of water, highways, or unsafe neighborhoods.
HM	Home Moves	Relocation (frequent or recent)
RM	Roommate	Roommate in the home
CTR	Child Trait Requests	Specific child trait restrictions or requests for placement
FA	Foster/Adoption	Prior foster/adoption
MPI	Marriage/Partnership Issues	One or more applicant reported instability or difficulties in their marriage, domestic partnership or long term relationship.
MC	Medically cleared	The applicant was medically cleared by their physician
MN	Medical Need	Specific medical needs or areas of concern were identified by the physician
MH	Mental Health	Significant mental health issues
DAAU	Drug/Alcohol Abuse/Use	One or more applicant reported using drugs and alcohol either and don't do it anymore or only drink occasionally.
RA	Resources Available	There are resources the applicant reported as available
SICLI	Self-Identified Challenges Lack of Insight	Either the licensor or one or more applicant reported self-behavior challenges such as but not limited to the inability to know how prior experiences affect current behavior or an understanding of parenting.
WEPL	Work/experience parenting limited	One or more applicant reported having limited parenting experience
FP	Family Planning	The applicant reported fostering or adoption as a means to grow the family
FCCSN	Family of creation child(ren) special needs	The applicant has one or more children with disabilities
FC	Foster child(ren)	The applicant has a foster child in the home
OA	Origin Adoption	The family of origin experienced adoption
MI	Military	An applicant has military experience
FOPAR	Family of Origin Parental Relationships	One or more applicant reported their own parents struggled in marital or partnership relationships such as divorce or multiple marriages
UF	Unsupportive References (including children in home)	References were limited or do not support the applicant including formal references and comments made by children in the home and/or adult children.
PFR	Positive Family Relationships	One or more applicant reported positive family relationships including those in both the family of origin and family of creation.
DFR	Difficult Family Relationships	One or more applicant reported difficult relationship(s) between themselves and the family of creation or origin.
FOCI	Family of Origin Concerns Identified	One or more of the applicants reported serious concerns with someone in their family of origin including but not limited to addiction, criminal record or health related issues.
ANDA	Abuse Neglect Domestic Violence Adult	One or more applicant reported experiencing abuse and neglect as an adult including but not limited to domestic violence, physical abuse, emotional abuse. This experience may have been to be a witness.
RU	Resources Unavailable	There are a lack of resources available to the applicant
HG	Home Good	The licensor noted the home is physically good, safe and stable in general
BCC	Background Check Cleared	No issues were identified about one or more applicant during the background check process.
BSP	Blended Shared Parenting	Within the home there are children of creation from multiple relationships usually inclusive of shared parenting with a parent outside the home.
CEPG	Childhood Experiences Positive General	One or more applicant reported generally positive childhood experiences
EHS	Education Home School	The applicant home schools their children.
MRS	Marriage Relationship Stable	The applicants reported a stable marriage, domestic partnership or long term relationship.
REN	Religion None	One or more applicant reported they did not identify as religious or spiritual.
RLA	Religious Affiliation	One or more applicant reported an affiliation to a religion or spiritual community.
RE	Related Experience	One or more applicant reported experience they believe would help them to be a foster parenting either through parenting or through work such as education, medical, civil service, parenting other children, parenting classes, etc.
BRUG	Boundaries/relationship unhealthy general	The licensor reported unhealthy relationships between the applicant and others in general.
VGA	Values/Goal/Attitude Positive	One or more applicant reported strong insight and/or positive goals and values.

Appendix B. Supplementary material

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.childyouth.2020.105133>.

References

- Capatosto, K. (2017). Foretelling the future: A critical perspective on the use of predictive analytics in child welfare. Kirwan Institute for the Study of Race and Ethnicity at The Ohio State University. Retrieved from <http://kirwaninstitute.osu.edu/wp-content/uploads/2017/05/ki-predictive-analytics.pdf>.
- Child Welfare Information Gateway (2018). Home study requirements for prospective foster parents. Retrieved from <https://www.childwelfare.gov/topics/systemwide/laws-policies/statutes/homestudyreqs/>.
- Conradi, L., Landsverk, J., & Wotring, J. R. (2014). Integrating safety, permanency and well-being series: Screening, assessing, monitoring outcomes and using evidence-based interventions to improve the well-being of children in child welfare. *Children's Bureau: An Office of Administration for Children and Families*. https://www.acf.hhs.gov/sites/default/files/cb/wp2_screening_assesing_monitoring.pdf.
- Crea, T. M., Barth, R. P., & Chintapalli, L. K. (2007). Home study methods for evaluating prospective resource families: History, current challenges, and promising approaches. *Child Welfare: Journal of Policy, Practice, and Program*, 86(2), 141–159.
- Cuccaro-Alamin, S., Foust, R., Vaithianathan, R., & Putnam-Hornstein, E. (2017). Risk assessment and decision making in child protective services: Predictive risk modeling in context. *Children and Youth Services Review*, 79, 291–298. <https://doi.org/10.1016/j.chilyouth.2017.06.027>.
- Depanfilis, & Girvin (2005). Investigating child maltreatment in out-of-home care: Barriers to effective decision-making. *Children and Youth Services Review*, 27, 353–374. <https://doi.org/10.1016/j.chilyouth.2004.11.010>.
- Department of Children, Youth, and Families. (2008). Policy 45274: Placement with unlicensed relatives or suitable persons. Retrieved from <https://www.dcyf.wa.gov/4527-kinship-care-searching-placing-and-supporting-relatives-and-suitable-other-persons/45274>.
- Fiene & Nixon (1985). Instrument based program monitoring and the indicator checklist for child care. *Child Care Quarterly*, 14(3), 198–214.
- Fiene (1985). Measuring the effectiveness of regulations. *New England Journal of Human Services*, 5(2), 38–39.
- Graham, J.C. (2019). Washington state DCYF racial disparity indices report (2018). Washington State Department of Children, Youth, and Families; Office of Innovation, Alignment, and Accountability. Retrieved from https://www.dcyf.wa.gov/sites/default/files/pdf/reports/Washington_State_DCYF_Racial_Disparity_Indices_Report_2018.pdf.
- Greene, J. C., Caracelli, V. J., & Graham, W. F. (1989). Educational evaluation and policy analysis. *American Educational Research Association*, 11(3), 255–274. <https://doi.org/10.2307/1163620>.
- Rossi, P. H., Schuerman, J., & Budde, S. (1999). Understanding decisions about child maltreatment. *Evaluation Review*, 23(6), 579–598. <https://doi.org/10.1177/0193841X9902300601>.
- Washington Administrative Code (2020). WAC 110-148-1320, 110-148-1365. Retrieved from <https://apps.leg.wa.gov/wac/>.