

IOWA STATE UNIVERSITY

Child Welfare Research and Training Project

Improving Child Support Enforcement through Paternity Establishment – A Modeling Approach

Iowa Partnership Grant (9/01/2011 through 8/31/2014)

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Overview of the Project

- Funded by Section 1115 discretionary funds offered by the Office of Child Support Enforcement (OCSE)
- Partnership between
 - Iowa Department of Human Services--Child Support Recovery Unit (CSRU)
 - Iowa State University--Child Welfare Research and Training Project
- Goals:
 - CSRU field offices meet performance targets
 - Hospitals increase percentage of properly completed paternity affidavits

Overview of the Project Cont.

Phase 1. Baseline assessments (Fall 2011-Spring 2012)

Phase 2. Design, implementation and monitoring of (Spring 2012-Summer 2013)

- Paternity establishment target-setting model
- Outreach to CSRU staff, hospitals and community organizations

Phase 3. Evaluation (Fall 2013-Summer 2014)

Rationale for the Project

- Paternity establishment benefits children
- Large number of nonmarital births
- States face dwindling resources
- States must still meet federal paternity establishment requirements
- Methodology to account for case characteristic variations is lacking
- An effective paternity target-setting model is needed

Goals of the Modeling Component

- Create a modeling approach that can be used
 - to help the Iowa CSRU set more equitable and realistic paternity establishment targets for each local office
 - to help Iowa CSRU better allocate staff resources to address cases that have a higher probability of paternity establishment
 - to increase the percentage of paternity establishment
 - by any state's Title IV-D program

Developing a Paternity Establishment Model

Modeling approach overview

- Potential barriers to paternity establishment identified by the workgroup
- Data from prior three federal fiscal years used to determine the impact of potential barriers
- Predictive model “scores” each case in the pool based on “statistically significant” barriers/predictors:
(0 to 0.499 = less viable case; 0.50 to 1 = more viable case)
- Score used to predict likelihood of establishing paternity

Analytic Approach for Developing Model

Data mining

- Review of cases that needed paternity establishment using information such as:
 - Paternity establishment status
 - Potential barriers for paternity establishment/case characteristics (e.g., number of alleged fathers on the case, number of years case has been open, case account type, age of children, etc.)

Analytic Approach for Developing Model, Cont.

Steps in model development

- Start with FFY 2011 data (all case characteristics of the 4,042 cases that needed paternity establishment)
 - Separate cases with pattern of unknown information on alleged father
 - Impute missing data
 - Use logistic regression
 - Dependent variable: establishment status in FFY 2011
 - Independent variables: potential barriers/case characteristics
- Repeat process with FFY 2010 and FFY 2009 data

Analytic Approach for Developing Model, Cont.

- **Final predictive logistic regression model**
 - Uses 15 out of 26 barriers/case characteristics
 - Formula:

Prob(est by CSRU in FFY11)

$$= \frac{1}{1 + e^{.229} * e^{.014 * AF_{Age}} * e^{.434 * N\#AF_{isAF}} * e^{-.263 * N\#AF_{isOR}} * \dots * e^{-1.986 * AccOS_{Med}}}$$

- Predicts with 70.8% accuracy whether or not CSRU obtained a paternity order on the case in FFY 2011

Analytic Approach for Developing Model, cont.

Statistically significant case characteristics

- Age of the Alleged Father/AF (-)
- Number of other cases on which the AF is also the AF (-)
- Number of cases on which the AF is a payor (+)
- Number of AFs listed (-)
- Number of unknown AF's listed (-)
- Whether the AF is located (+)
- AF's state of residence is another state other than Iowa (-)
- Mother's statement not returned and payee is sanctioned (-)
- Age of the youngest child (-)
- Payee is a caretaker (-)
- Case is a FIP case (+)
- Case is an out-of-state FIP case (+)
- Case is a Medicaid case (+)
- Case is an out-of-state Medicaid case (+)
- Number of years the case has been open (-)

Model Application in FFY 2013

Initial FFY 2013 case “scoring”

- Each case in PEP pool as of 09/30/2012 was assigned a viability “score” (probability of paternity establishment)
 - Cases scored 0.50 and higher were used to determine office targets
 - Office targets were then based on cases more likely to produce a paternity order
 - Number of viable cases decreased from 3,425 (total as of 09/30/12) to 1,305
 - Offices could still work all cases

Model Application in FFY 2013, cont.

Monthly case “scoring”

- All PEP cases receive a “score” to assist staff in determining priority
 - As new cases are added to the pool, they receive a score
 - As information is updated on cases, they receive an updated score
 - E.g., new information, such as mother’s statement returned and alleged father’s location obtained will affect case viability scores

Implementation

- The modeling approach was developed by the working group
- Model was used by Central office at the beginning of FFY 2013 to identify more viable pool of cases
- CSRU field offices pursue cases for paternity establishment based on calculated priority
- Using the instruction provided by the working group, central office can repeat the modeling approach each year based on the latest data

Evaluation

- Evaluation of the Model:
 - Feedbacks/questions from CSRU field workers when using the model
 - Pre- and Post-implementation of the model
 - Surveys of field workers
 - Paternity establishment percentages

Summary

- Partnership in model developing
- Fulfill initial goal through the modeling process
 - CSRU field offices meet performance targets
- Implementation
- Evaluation and modification
- Modeling approach can be used on an ongoing basis by any state's Title IV-D program

Questions?



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Thank you