## Home Foreclosure and Child Protective Services Involvement

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**OBJECTIVE:** We estimated associations between experiencing a home foreclosure filing and experiencing a child protective services (CPS) investigation or substantiation.

abstract

**METHODS:** We linked a large sample drawn from administrative data on foreclosure filings, CPS involvement, and participation in a host of other public programs for >60 000 Wisconsin households over a 4-year period from 2008 to 2011. Our empirical analyses used piecewise exponential survival models to estimate the risk of CPS involvement (investigation or substantiation) as a function of a home foreclosure filing and a set of individual and household characteristics. We fitted these models with and without the inclusion of propensity score weights.

**RESULTS:** Households that experienced a foreclosure filing had a much higher probability of CPS involvement. This was true in the year before the filing as well as the year after the foreclosure filing. However, these associations were generally largest in the period before or shortly afterward.

**CONCLUSIONS:** Experiencing a foreclosure filing is associated with increased CPS involvement. However, it is not clear that this association is driven by the foreclosure filing action itself. Rather, increased risk of CPS involvement is apparent during the process of moving toward the filing as well as the year or so after the filing, both of which are likely characterized by limited economic resources as well as by financial and other stress.

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Drs Berger, Collins, Slack, and Smeeding conceptualized and designed the study; Dr Berger supervised data management and analysis and drafted the initial manuscript; Dr Font and Ms Gjertson carried out the initial analyses and reviewed and revised the manuscript; Drs Collins, Slack, and Smeeding critically reviewed the manuscript; and all authors approved the final manuscript as submitted and agree to be held accountable for all aspects of the work.

www.pediatrics.org/cgi/doi/10.1542/peds.2014-2832

**D0I:** 10.1542/peds.2014-2832

Accepted for publication May 1, 2015

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PEDIATRICS (ISSN Numbers: Print, 0031-4005; Online, 1098-4275).

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**FINANCIAL DISCLOSURE:** The authors have indicated they have no financial relationships relevant to this article to disclose.

**FUNDING:** This research was generously funded by the John D. and Catherine T. MacArthur Foundation How Housing Matters to Families and Communities Initiative.

**POTENTIAL CONFLICT OF INTEREST:** The authors have indicated they have no potential conflicts of interest to disclose.

WHAT'S KNOWN ON THIS SUBJECT: Prior studies have found a positive relationship between macro-level indicators of home foreclosure and child maltreatment rates. The extent to which home foreclosure may be associated with child protective services involvement at the micro level is largely unknown.

what this study adds: Foreclosure filings are positively associated with child protective services involvement. However, this is true of the periods before and after a filing, which are characterized by economic and other stress, which may drive this association more than the filing itself.

Socioeconomic disadvantage has been described as "the most consistent and strongest" predictor of child protective services (CPS) involvement.1 An extensive literature documents that economic stress and hardship, low income, poverty status, and related factors are associated with increased risk of both child maltreatment and CPS involvement.<sup>2-23</sup> Economic factors may directly and indirectly affect risk of abuse or neglect.24 Limited economic resources, or a decline therein, may directly increase a family's likelihood of engaging in maltreatment by preventing the ability to fully meet a child's basic material needs.<sup>25-27</sup> A chronic lack of resources may indirectly increase the probability of maltreatment through its association with increased parental stress and depression.<sup>28,29</sup> Economic instability may have particularly important effects; a sudden decline in resources (negative shock) may lead to a concomitant increase in parental stress and a deterioration of the home environment beyond that associated with limited but stable economic resources.<sup>30</sup> Finally, limited economic resources, or a drop therein, may increase the likelihood that a family becomes known to CPS, even holding parenting behaviors constant.

The recent housing crisis and Great Recession were characterized by rampant economic stress as large numbers of families experienced job loss and home foreclosure.31 Whereas many studies have examined links between unemployment and various measures of child maltreatment, we are aware of only 2 studies to directly examine associations between foreclosure and maltreatment, despite research indicating that home foreclosure is inversely associated with well-being for both adults and children.32-35 Wood et al examined associations of metropolitan statistical area-level unemployment, mortgage delinquency, and

foreclosure rates with hospital admissions for physical abuse and high-risk traumatic brain injury. They found positive associations of mortgage delinquency and foreclosure rates with both types of admissions.36 Frioux et al estimated associations of county-level unemployment and mortgage foreclosure rates with child maltreatment investigations and substantiations. Their results indicate that both factors are positively associated with CPS investigations and substantiations.<sup>37</sup> These studies provide evidence suggesting a link between home foreclosure and child maltreatment. However, one cannot assume that these macro-level associations hold at the individual or household level. We are aware of no study that examines associations between foreclosure and child maltreatment at the micro level.

We use extensive administrative data from Wisconsin to examine associations between experiencing a home foreclosure filing and experiencing a CPS investigation or substantiation. We conceptualize home foreclosure as a dynamic process, rather than a static event. That is, homeowners are likely to face a period of missed mortgage payments and mortgage delinquency, which may be accompanied by increasingly aggressive communications from lenders. This process may unfold over an extended period of time and is likely to be accompanied by considerable financial stress. The next step in the foreclosure process in a judicial procedure state such as Wisconsin occurs when the mortgage holder files a legal motion to foreclose. Such a filing marks the beginning of a formalized legal process through which the lender seeks to evict the homeowner and reclaim the property. During the subsequent months (sometimes years), the homeowner may make adequate payments to retain the home, may voluntarily leave the home, or may enter into

a court process that results in the foreclosure being upheld or denied. In addition to the period preceding a foreclosure filing, the period in which the filing occurs is also likely to be characterized by added stress, uncertainty, and perhaps instability. Furthermore, if a family chooses to leave the home, or is forced to do so, and is unable to find another suitable home in a reasonable amount of time, it may be at risk for child neglect by failing to provide adequate housing for the children. Even if the family finds a new, adequate home, the process of doing so is likely to be chaotic. Evidence from the few prior studies that have considered the timing of foreclosure-related events suggests that the period surrounding a foreclosure filing is associated with greater risk of adverse outcomes than is the actual loss of the home, 32,35 which generally occurs much later, if at all. We expect the period leading to a foreclosure filing (during which a family is likely to be experiencing financial hardship), the filing event itself, and the period after the filing to each be positively associated with CPS involvement. It is unclear, a priori, which period should be most strongly associated with CPS involvement. Our empirical work examines the timing of householdlevel foreclosure filings in relation to the timing of household-level CPS involvement over a 4-year period, focusing on quarterly time intervals.

#### **METHODS**

#### **Data**

We used linked administrative data from the Wisconsin Consolidated Court Automation Programs (WI CCAP) and the Multi-Sample Person File (MSPF) database housed at the Institute for Research on Poverty. 38,39 WI CCAP data include case information from the Wisconsin circuit courts case management system. Court record summaries are public records under Wisconsin law. The MSPF database includes linked

individual-level administrative data from a host of public social welfare programs. Inclusion in the MSPF necessitates that an individual or his or her family or household members participated in ≥1 of these programs at some point. Any individual who is observed as being part of a social welfare benefit case is included, regardless of being the actual benefit recipient. Once an individual enters the MSPF, he or she is followed backward and forward in time, regardless of prior or ongoing benefit receipt. For example, once an individual enters the MSPF, we have access to and can track his or her earnings (through unemployment insurance contributions) in all subsequent and prior periods regardless of program participation in those periods.

To construct our data set, we first extracted the entire universe of 57 661 person-level foreclosure filing records in the WI CCAP from 2008 to 2011. These records could include multiple individuals in the same household if listed in the filing. We then linked these files to MSPF records by using a deterministic matching strategy based on identifying information available in both data sources. We were able to match 55 880 of the foreclosure cases (97%) to MSPF records. Because the WI CCAP and MSPF data were linked at the individual rather than household level, households were duplicated if multiple adults were affiliated with a foreclosure filing. To ensure that our analyses did not include duplicate households, we randomly selected 1 adult from each household and excluded 24 995 duplicate household records. This resulted in a sample of 30 885 households, observed each quarter from 2008 to 2011 (constituting 494 160 household-quarter observations).

We constructed a comparison group by randomly selecting 40 000 individuals in the MSPF. Because the WI CCAP data include the full

universe of WI foreclosures, the comparison group consisted only of households that did not experience a foreclosure filing. We then excluded 10 424 individuals (26%) who were <18 years old in the first period in which we could observe foreclosure filings (quarter 1 of 2008). This resulted in a total sample of 60 461 households (30 885 foreclosure and 29 576 comparison group), observed each quarter from 2008 to 2011 (constituting 967 376 householdquarter observations).

#### **Measures**

We focused on 2 measures of CPS involvement including whether a household had been (1) investigated for child maltreatment and (2) substantiated for maltreatment. Our key predictor was whether a foreclosure had been filed regarding the address associated with a given MSPF record in a particular quarter. With the exception of the final set of "consolidated" models, for which we coded foreclosure as a discrete event constrained to the quarter of the filing, we coded foreclosure as 1 in the quarter in which it was filed and all subsequent quarters. In different model specifications, we assessed associations between foreclosure and CPS involvement over a 2-year period, accounting for various lag and lead periods. Our models controlled for gender, race, and age of the adult associated with the MSPF observation: dummies for wage category (zero reported wages and wage quintile for those with positive wages, as well as an indicator that we were unable to link to unemployment insurance wage data because the respondent's social security number was not available in the administrative data); and indicators for Temporary Assistance for Needy Families (TANF), the Supplemental Nutrition Assistance Program (SNAP), Medicaid, child support received, child support paid, and unemployment in the current quarter. Finally, we controlled for the year in which the observation occurred.

We used piecewise exponential survival models to estimate risk of CPS involvement as a function of a foreclosure filing and the control variables. Piecewise exponential models are particularly suited to our analyses because they do not require that the hazard rate be proportional across groups or over time. In other words, our models allow the hazard of CPS involvement to be nonproportional across households that did and did not experience foreclosure. Additionally, the model is not constrained by the assumption that the baseline hazard is flat (constant) or changing at a constant rate. Rather, it may vary across time intervals identified in the model, so long as it meets the constancy assumption within a given interval. We allowed the baseline hazard to vary by year of observation. (We also estimated models allowing the baseline hazard to vary by quarter of observation; however, this resulted in a considerably poorer model fit.) This strategy enabled us to model foreclosure filings using a variety of lag and lead periods over a 2-year span, without having to meet the constancy assumption for the baseline hazard. The reference group in all models is households that did not experience foreclosure.

We cannot identify homeownership in the MSPF data. Thus, by necessity, the comparison group includes both homeowners and renters. This should bias our results toward zero, as renters tend to be less advantaged than homeowners and should, therefore, have a greater underlying probability of CPS involvement. To better adjust for such differences, we also implemented a propensity score weighting strategy. We generated propensity scores representing the likelihood of foreclosure based on all covariate values in quarter 1 of 2008. After computing a propensity score for each household, we conducted

weighted regression analyses in which the weights were equal to the inverse probability (propensity) of experiencing a foreclosure. This served to more heavily weight the most similar households.

#### **RESULTS**

Table 1 presents descriptive statistics and results from t tests for mean differences in the characteristics of households that experienced a foreclosure filing and those that did not, as well as in the characteristics of those households that experienced a foreclosure when observed in preand postforeclosure quarters.

Households that experienced a foreclosure were substantially more likely to have been involved with CPS. These households were disproportionately white and had higher wages and less welfare receipt. They were also more likely to receive SNAP and Medicaid, to pay and receive child support, and to have experienced unemployment. Among households experiencing a foreclosure filing, the probability of CPS involvement was slightly, though not substantially, less common in the period after the filing than before it. Households were substantially more disadvantaged in the postfiling period than prefiling; they reported lower

wages, more unemployment, and greater receipt of SNAP, Medicaid, and TANF in the postforeclosure period.

Our first set of survival analysis estimates is shown in Table 2. The upper panel presents results without the propensity score weights; the lower panel presents propensity score weighted results. The estimates presented in each column represent the risk of experiencing a CPS investigation for foreclosed households relative to nonforeclosed households, all else being equal. Each column shows results from a separate model focusing on a particular period in which a filing may have occurred,

TABLE 1 Descriptive Statistics by Foreclosure Filing Status

Measure	Full Sai	mple	Households Experienc	ing Foreclosure Filing
	No Foreclosure Filing	Foreclosure Filing	Before Foreclosure Filing	After Foreclosure Filing
CPS involvement				
CPS investigation (ever)	3.61	11.85 <sup>a</sup>		
CPS investigation in current quarter	0.24	0.78 <sup>a</sup>	0.81	0.76 <sup>b</sup>
Substantiated investigation (ever)	0.74	8.56 <sup>a</sup>		
Substantiated investigation in current quarter	0.03	0.11 <sup>a</sup>	0.12	$0.09^{c}$
Time constant covariates				
CPS involvement before 2008	2.30	7.07 <sup>a</sup>		
Female	49.05	44.46 <sup>a</sup>		
Missing gender	3.31	0.60 <sup>a</sup>		
White	47.35	67.04 <sup>a</sup>		
Black	9.90	9.12 <sup>a</sup>		
Hispanic	5.25	6.16 <sup>a</sup>		
Asian	2.23	2.79 <sup>a</sup>		
American Indian	1.71	1.98 <sup>a</sup>		
Race unknown	33.55	12.91 <sup>a</sup>		
Missing age	10.29	4.32 <sup>a</sup>		
Mean age in years in 2008 (SD)	45.43 (20.27)	40.82 (10.30) <sup>a</sup>		
Time varying covariates				
No reported wages	50.95	35.98 <sup>a</sup>	32.48	38.92 <sup>a</sup>
Unable to link to wage data	20.63	10.23 <sup>a</sup>	10.78	9.78 <sup>a</sup>
0th-20th percentile wages	17.98	11.96 <sup>a</sup>	10.69	13.03 <sup>a</sup>
20th–40th percentile wages	7.51	5.78 <sup>a</sup>	8.01	3.91 <sup>a</sup>
40th-60th percentile wages	8.02	13.87 <sup>a</sup>	14.39	13.44 <sup>a</sup>
60th–80th percentile wages	8.46	17.18 <sup>a</sup>	18.17	16.34 <sup>a</sup>
80th-100th percentile wages	7.09	15.22 <sup>a</sup>	16.25	14.35 <sup>a</sup>
TANF receipt this quarter	0.36	0.21 <sup>a</sup>	0.10	0.30 <sup>a</sup>
SNAP receipt this quarter	8.16	10.77 <sup>a</sup>	7.43	13.59 <sup>a</sup>
Medicaid receipt this quarter	11.71	22.03 <sup>a</sup>	18.61	24.90 <sup>a</sup>
Received child support this quarter	4.20	11.36 <sup>a</sup>	9.63	12.82 <sup>a</sup>
Paid child support this quarter	4.39	9.01 <sup>a</sup>	7.07	10.65 <sup>a</sup>
Unemployed this quarter	5.47	12.73 <sup>a</sup>	12.18	13.19 <sup>a</sup>
Household-quarter observations	473 216	494 160	225 672	268 488

Values are expressed as % unless noted otherwise. Table shows 967 376 household-quarter observations of 60 461 households observed from Quarter 1, 2008, through Quarter 4, 2011 (analyses are based on 1 observation of each household in each of these quarters, for a total of 16 observations per household). The "unable to link to wage data" category is a subset of the "no reported wages" category, such that these categories are not mutually exclusive. t tests were used to assess mean differences between groups.

a P < .001.

b *P* < .05.

 $<sup>^{\</sup>rm c}$  P < .01.

ABLE 2 Piecewise Exponential Survival Model Results for CPS Investigation, Separate Models by Timing of Foreclosure Filing

llming	Imper	Impending Foreclosure Filing	iling	Concurrent Foreclosure Filing		Lagged Fore	Lagged Foreclosure Filing	
	(1)	(2)	(2)	(4)	(5)	(9)	(2)	(8)
Without propensity score weights								
Foreclosure filing 3–4 quarters after	1.701 (0.055) <sup>a</sup>							
Foreclosure filing 2 quarters after		1.471 (0.047) <sup>a</sup>						
Foreclosure filing in next quarter			1.398 (0.045) <sup>a</sup>					
Foreclosure filing in current quarter				1.316 (0.043) <sup>a</sup>				
Foreclosure filing in prior quarter					1.266 (0.043) <sup>a</sup>			
Foreclosure filing 2 quarters before						1.167 (0.041) <sup>a</sup>		
Foreclosure filing 3-4 quarters before							1.046 (0.041)	
Foreclosure filing $\geq 5$ quarters before								0.782 (0.068) <sup>b</sup>
With propensity score weights								
Foreclosure filing 3–4 quarters	1.739 (0.080) <sup>a</sup>							
after								
Foreclosure filing 2 quarters after		1.539 (0.068) <sup>a</sup>						
Foreclosure filing in next quarter			1.481 (0.065) <sup>a</sup>					
Foreclosure filing in current quarter				1.410 (0.062) <sup>a</sup>				
Foreclosure filing in prior quarter					1.359 (0.060) <sup>a</sup>			
Foreclosure filing 2 quarters before						1.271 (0.058) <sup>a</sup>		
Foreclosure filing 3–4 quarters before							1.154 (0.057) <sup>b</sup>	
Foreclosure filing >5 quarters before								0 867 (0 083)

experienced a foreclosure filing in the specified period. Table includes 967 376 household-quarter observations of 60 461 households observed from Quarter 1, 2008, through Quarter 4, 2011 (analyses are based on 1 observation of each household in each of falues are expressed as hazard ratios (SEs). For each set of results (without and with propensity score weights), each column (1 through 8) presents results from a separate piecewise exponential survival model examining whether a household hese quarters, for a total .001 including subsequent (impending) filings, concurrent filing, and prior (lagged) filings. Once a household experienced an initial filing, all subsequent quarters were coded affirmatively for having experienced a filing.

The results indicate that households that will go on to experience a foreclosure filing in the next 6 to 12 months are at 70% greater risk of a CPS investigation than households that will not subsequently experience a foreclosure. Indeed, the entire period from 12 months before to 6 months after the filing is associated with elevated risk of CPS investigation. Interestingly, the pattern of the coefficients suggests that such risk is greatest during the 6 to 12 months before the foreclosure and decreases in magnitude in each consecutive quarter. Approximately 6 months after a filing, households are no longer at elevated risk. The propensity score weighted results reveal a consistent pattern, though the estimates are somewhat larger. Additionally, these results indicate that households are also at increased risk of CPS involvement during the 12 months after a filing. As noted above, foreclosure group households tended to be more socioeconomically advantaged than comparison group households (all of the former achieved homeownership, whereas the comparison group includes both renters and homeowners), which should likely bias our estimates toward zero. Indeed, these results indicate that, once the data are weighted to account for such differences, we find even greater risk of CPS involvement in the periods before, during, and shortly after a foreclosure filing. Table 3 presents results for substantiations. The pattern and magnitude of the coefficients is quite consistent with those for investigations.

Table 4 shows results when all of the lag and lead periods are included in the same "consolidated" model. Here,

ABLE 3 Piecewise Exponential Survival Model Results for CPS Substantiation, Separate Models by Timing of Foreclosure Filing

Timing	lmpe	Impending Foreclosure Filing	illing	Concurrent Foreclosure Filing		Lagged Foreclosure Filing	losure Filing	
	(1)	(2)	(3)	(4)	(5)	(9)	(2)	(8)
Without propensity score weights	,							
Foreclosure filing 3–4 quarters after	1.696 (0.144) <sup>a</sup>							
Foreclosure filing 2 quarters after		1.448 (0.123) <sup>a</sup>						
Foreclosure filing in next quarter			1.330 (0.115) <sup>a</sup>					
Foreclosure filing in current quarter				1.200 (0.107) <sup>b</sup>				
Foreclosure filing in prior quarter					1.308 (0.120) <sup>c</sup>			
Foreclosure filing 2 quarters before						1.169 (0.114)		
Foreclosure filing 3-4 quarters before							1.058 (0.117)	
Foreclosure filing $\geq 5$ quarters before								1.054 (0.234)
With propensity score weights								
Foreclosure filing 3–4 quarters after	1.769 (0.173) <sup>a</sup>							
Foreclosure filing 2 quarters after		1.563 (0.151) <sup>a</sup>						
Foreclosure filing in next quarter			1.429 (0.142) <sup>a</sup>					
Foreclosure filing in current quarter				1.332 (0.135) <sup>c</sup>				
Foreclosure filing in prior quarter					1.406 (0.148) <sup>c</sup>			
Foreclosure filing 2 quarters before						1.314 (0.145) <sup>b</sup>		
Foreclosure filing 3-4 quarters before							1.200 (0.149)	
Foreclosure filing $\geq 5$ auarters before								1221 (0.292)

falues are expressed as hazard ratios (SEs). For each set of results (without and with propensity score weights), each column (1 through 8) presents results from a separate piecewise exponential survival model examining whether a household a preciosure filing in the specified period. Table includes 967.376 household-quarter observations of 60.461 households observed from Quarter 1, 2006, through Quarter 4, 2011 (analyses are based on 1 observation of each household each of these quarters, for a total observation we are concerned only with the initial quarter in which a foreclosure filing occurred; we thus coded the foreclosure variable as 1 in that quarter only and not in subsequent quarters, allowing for multiple CPS events (failures). These results indicate that experiencing a foreclosure in any of the periods considered is associated with an increased likelihood of a CPS investigation and substantiation, with 2 exceptions. We find no associations for experiencing a substantiation in the same quarter as the filing, nor for experiencing a substantiation ≥5 quarters after the filing. Consistent with our prior estimates, the magnitude of the association between foreclosure and CPS involvement tended to decrease steadily over time, such that it was highest ~12 months before a foreclosure and lowest ~12 months after the foreclosure. However, these results also reveal a notable temporary dip in the hazard for each outcome in the quarter of the filing. Finally, they suggest that households are at substantially increased risk of CPS involvement in the 6 to 12 months after a filing, as well as during the 12 months before.

#### **DISCUSSION**

Experiencing a foreclosure filing is associated with increased risk of a CPS involvement. This pattern, which is apparent in our raw data and the estimates from our survival analyses, supports findings from prior research linking macro-level foreclosure rates with child maltreatment prevalence.36,37 An examination of the timing of these events, however, reveals that increased risk of CPS involvement is apparent as much as 12 months before a foreclosure filing, although households continue to be at heightened risk of CPS involvement through the 6 to 12 months after the

On the whole, this leads us to conclude that factors such as

a *P* < .001. b *P* < .05. c *P* < .01.

TABLE 4 Piecewise Exponential Survival Model Results for CPS Investigation and Substantiation, Consolidated Model

Timing	Investi	gation	Substantiation	
	Without Propensity Score Weights	With Propensity Score Weights	Without Propensity Score Weights	With Propensity Score Weights
Foreclosure filing 3–4 quarters after	1.804 (0.089) <sup>a</sup>	1.950 (0.112) <sup>a</sup>	1.832 (0.235) <sup>a</sup>	1.985 (0.274) <sup>a</sup>
Foreclosure filing 2 quarters after	1.653 (0.107) <sup>a</sup>	1.693 (0.119) <sup>a</sup>	1.922 (0.307) <sup>a</sup>	2.202 (0.387) <sup>a</sup>
Foreclosure filing in next quarter	1.619 (0.101) <sup>a</sup>	1.671 (0.116) <sup>a</sup>	1.894 (0.293) <sup>a</sup>	1.863 (0.300) <sup>a</sup>
Foreclosure filing in current quarter	1.468 (0.093) <sup>a,b</sup>	1.549 (0.111) <sup>a,b</sup>	0.812 (0.178) <sup>b,c,d</sup>	0.957 (0.227) <sup>b,c,d</sup>
Foreclosure filing in prior quarter	1.682 (0.103) <sup>a</sup>	1.696 (0.114) <sup>a</sup>	1.857 (0.290) <sup>a,e</sup>	1.775 (0.291) <sup>a,e</sup>
Foreclosure filing 2 quarters before	1.607 (0.103) <sup>a</sup>	1.667 (0.120) <sup>a</sup>	1.705 (0.288) <sup>e,f</sup>	1.760 (0.321) <sup>e,f</sup>
Foreclosure filing 3–4 quarters before	1.459 (0.078) <sup>a,b</sup>	1.497 (0.094) <sup>a,b</sup>	1.403 (0.208) <sup>e,g</sup>	1.473 (0.231) <sup>g</sup>
Foreclosure filing ≥5 quarters before	1.281 (0.058) <sup>a,b,c,d,h,i,j</sup>	1.338 (0.076) <sup>a,b,c,d,h,i</sup>	1.148 (0.148) <sup>b,c,d,h,i</sup>	1.281 (0.185) <sup>b,c</sup>

Values are expressed as hazard ratios (SEs). Table includes 967 376 household-quarter observations of 60 461 households observed from Quarter 1, 2008, through Quarter 4, 2011 (analyses are based on 1 observation of each household in each of these quarters, for a total of 16 observations per household). Observations are not censored after the first failure; that is, these models allow for multiple failures. All models control for the covariates shown in the lower panel of Table 1 as well as a fixed effect for year of observation.

decreased economic resources, increased economic instability, and high levels of economic and other stress that characterize the period surrounding a foreclosure are likely driving the association between foreclosure and CPS involvement. That is, whereas our results demonstrate an association between foreclosure and CPS involvement, they do not necessarily indicate that there is a causal link between the filing itself and increased CPS involvement. As such, policies and programs aimed at stabilizing economic resources and preventing or compensating for adverse economic shocks may be more successful at preventing maltreatment than those solely focused on helping households avoid foreclosure without addressing other underlying economic needs and stressors.

Our findings are particularly notable given that those households that experienced foreclosure were, on average, more advantaged than those that did not. To begin with, the foreclosure group consisted predominantly of homeowners, whereas the comparison group

included a combination of renters and owners. In addition, the foreclosure group experienced higher wages and greater child support payment and receipt than the comparison group. These factors all suggest greater economic advantage. At the same time, households that experienced a foreclosure were likely to have also experienced an adverse economic shock. This is reflected by the large decrease in wages and increase in unemployment, as well as TANF, SNAP, and Medicaid receipt, in postforeclosure compared with preforeclosure quarters (Table 1). On one hand, we would expect more advantaged households, such as those that were able to purchase a home, to have lower risk of CPS involvement. On the other hand, prior evidence suggests that adverse economic shocks are associated with increased maltreatment.<sup>29</sup> Our findings clearly provide support for the latter conjecture. After adjusting for other differences in socioeconomic advantage, the 24-month period surrounding a foreclosure filing is associated with roughly a 40% to 95% greater likelihood of a CPS investigation or substantiation; such

risk is highest in the 6 to 12 months before or after a foreclosure filing.

#### **CONCLUSIONS**

Homeownership has long been linked to a variety of social and economic benefits.<sup>40</sup> However, recent research suggests that that these benefits primarily reflect the stability associated with owning a home, rather than homeownership itself.41,42 Owners move less often than renters, and this stability allows families and children to establish a foundation in a community, remain in a consistent school, and use a known set of community institutions. Whereas our results imply that the economic instability surrounding foreclosure is associated with increased CPS involvement, it is important to note that we focused only on foreclosure filings, not on foreclosure finalization or eviction. It is possible that being evicted may compound the adverse effects of preexisting economic stress and lead to even greater risk of CPS involvement. This is an area that is ripe for future research.

Overall, we find consistent evidence that households that experience

a P < .001.

 $<sup>^{\</sup>mathrm{b}}$  P < .05 versus "Foreclosure 3–4 quarters after."

 $<sup>^{\</sup>mathrm{c}}$  P < .05 versus "Foreclosure 2 quarters after."

 $<sup>^{</sup>m d}$  P < .05 versus "Foreclosure in next quarter."

 $<sup>^{\</sup>rm e}$  P < .05 versus "Foreclosure in current quarter."

f P < .01.

g P < .05.

 $<sup>^{\</sup>rm h}$  P < .05 versus "Foreclosure in prior quarter."

 $<sup>^{\</sup>mathrm{i}}$  P < .05 versus "Foreclosure 2 quarters before."

 $<sup>^{\</sup>rm j}$  P< .05 versus "Foreclosure 3–4 quarters before."

a foreclosure filing are at increased risk of CPS involvement in both the year before and the year after the filing. However, this does not necessarily suggest that there is a causal link between the filing itself and becoming involved with CPS. Indeed, we do not observe an immediate jump in CPS involvement in the period during or directly after the filing. Rather, households are at equal or greater risk of CPS involvement in the year before the filing and shortly thereafter. In plain terms, foreclosure appears to be a symptom of larger economic problems that create stress within the family, especially for relatively advantaged families that are not usually thought to face such pressures. As such, child maltreatment prevention practices and policy would be well served by supporting all households that experience an adverse economic shock rather than focusing specifically on those households facing foreclosure.

#### **ACKNOWLEDGMENTS**

We are grateful to Jane Smith for data merging assistance and to Shaini Kothari and Laura Cuesta for data extraction assistance. We assume responsibility for all errors of commission and omission.

#### **ABBREVIATIONS**

CPS: child protective services
MSPF: Multi-Sample Person file
SNAP: Supplemental Nutrition
 Assistance Program
TANF: Temporary Assistance for
 Needy Families
WI CCAP: Wisconsin Consolidated
 Court Automation
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Pediatrics 2015;136;299

DOI: 10.1542/peds.2014-2832 originally published online July 20, 2015;

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