LIMITING MANAGERIAL DISCRETION BY REGULATION: NURSING HOMES AND THE NATIONAL BACKGROUND CHECK PROGRAM

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Abstract

Structuring managerial discretion has been a key government policy tool in contemporary regulation and governance. This paper explores how a policy that constrains managers' discretion in recruitment influences the performance of public services. The National Background Check Program (NBCP) is a federal program aimed at strengthening states' criminal background checks targeting direct patient access employees in nursing homes, where abuse, neglect and misappropriations have been a persistent concern. We combine secondary administrative panel data on Medicare and Medicaid certified nursing facilities with primary data collected from states on their NBCP efforts. We find that NBCP participation, funding and the implementation of fingerprinting requirement, in particular, are associated with fewer deficiencies and higher star ratings. These findings suggest that, while constraining managerial discretion, government regulation is an important tool that federal and state agencies can use to control the performance of public and private entities in some markets and provide market enhancing signals to consumers.

One set of public sector reform initiatives conducted during the past three decades in a number of countries stressed downsizing, de-regulation, and accountability for results as administrative means for achieving greater efficiency, economy and service quality (Peters and Savoie 1998; Kettl 2000). A key facet of these reforms, what has often been called "managerialism," became an important ideology for public service organizations (Pollitt 1998; Terry 1998; Light 2006). Advocating for greater managerial authority and autonomy, managerialism relates to replacing traditional personnel management with flexible systems that grant top executives discretion in hiring and firing, offering competitive compensation and building organizations using temporary and part-time workers (Rainey 1998). Associated by some with governments' increasing reliance on private organizations to deliver services, managerial discretion is expected to be a key tool for effective governance.

A second set of reforms that focus on regulation and governance, in contrast, argue that markets are institutional structures crafted via government actions that in part define the scope of managerial discretion (Boyer 1990; Vogel 2018; Polanyi 1944). Governments might use combinations of incentives, information and coercion to structure markets to enhance the quality, efficiency, equity or safety of existing markets (Anton, Deltas and Khanna 2004; Carpenter, Grimmer and Lomazoff 2010; Konar and Cohen 1997; Van Erp 2011). Such governance strategies within regulation can both limit discretion by the regulated firms (and managers) and simultaneously provide signals to consumers that enhance market efficiency. With that in mind, how do policies that explicitly limit managerial discretion influence the performance of public services?

A key issue in the scholarship on managerial discretion is related to keeping a balance between discretion and accountability (Scott 1997). To date, few studies have investigated

whether variation in managerial discretion, particularly in terms of personnel management, can influence the performance of public services. In this article, we address this gap by studying one such policy, the effect of state-mandated criminal background checks of front-line workers on the quality of publicly financed services delivered by governmental, nonprofit and for-profit organizations. Common in employment screening, certification and occupational licensing, background checks are legally required for many professions (Harris and Keller 2005). Like other federal and state regulations, background checks seek to protect the safety of organizational clients and help companies shield their assets through hiring better employees (Brody 2010; Philipsen et al. 2012). However, these policies also impose administrative and financial burdens, and may undermine service quality by creating obstacles for speedy and efficient recruitment and retention, especially in industries with relatively high turnover rates.

We conduct this research in the context of U.S. nursing homes, where quality and staff turnover have been a continuous concern. As a response to market failures resulting from informational asymmetries, the government has developed an extensive regulatory regime. Both a federal agency – the Centers for Medicare & Medicaid Services (CMS) – and state agencies regulate nursing homes through annual inspections, sanctions, and licensure, among other policies. In addition to these ongoing efforts, in 2010 CMS solicited applications for grants for the National Background Check Program (NBCP) to design a framework and implement enhanced background checks on prospective direct patient access employees in long-term care facilities. Since then, twenty-seven states and Washington, D.C. have been awarded grants. Implementation across states varies: some states have implemented the key milestones of the program, while others are still in the early stages. This variation in program participation allows us to conduct an inquiry into the impact of NBCP on service quality across states. As

governments continue to look for the right balance between managerial discretion and regulation, this investigation sheds light on the importance of regulating frontline human service workers by showing how even basic regulatory controls can contribute to regulatory policy objectives while helping to improve service quality.

Regulation and Performance

Approaches to Government Regulation

While the scope and stringency of government regulation across fields is a subject of intense debates, regulation is widely used as tool to augment the performance of both public and private organizations through mandates and enforcement actions. Regulation is introduced to monitor regulated entities' behavior, with the potential of ensuring answerability, preventing harm, and improving organizational performance (May 2002). This study defines regulation as a process by which government bodies ('regulators'), operating under legal mandates, set standards for, monitor and control organizations subject to regulation ('regulated entities') using sanctions or rewards. The common regulatory instruments consist of legal, economic, and informational instruments such as laws, taxes, audits, inspections, financial controls, performance indicators, certification, guidelines, and others (Amirkhanyan, Meier, and O'Toole 2017; Ashworth, Boyne, and Walker 2002; Hood, James, and Cross 2000; Vogel 2018).

Regulation strategies vary greatly. "Hard-path policy" or "the mandatory approach" to regulation (Steurer, 2013) involves using coercive power ("sticks") to ensure compliance through frequent monitoring and imposing sanctions for noncompliance (Attari et al. 2009; May 2002; 2005; Wilms 1982). Soft regulation – assistance programs, education, or training – emphasizes the normative and social motivations for compliance (May 2005; Steurer 2013). In practice, hard and soft regulation are two ends of a continuum that is used in regulatory governance (Vogel

2018). Mandatory approaches can include voluntary elements such as providing assistance to regulated entities or allowing certification rather than licensing (Carpenter et al. 2010). Conversely, voluntary approaches can incorporate more coercive elements, such as taking legal action against certain behavior (May 2005).

Research on the effects of hard and soft regulation on compliance offers mixed results. On the one hand, a vast array of arguments has been put forward in favor of using hard regulation to improve compliance and performance (Gray and Shimshack 2011; May 2005; Mukamel et al. 2012; Wilms 1982; Winter & May 2001). The deterrence-based approach, however, incurs high enforcement and compliance costs, and can lead to confrontation (Mukamel et al. 2011; Potoski and Prakash 2004). On the other hand, numerous studies suggest that soft regulation fosters normative and social motivations for compliance (May 2002, 2005; Potoski and Prakash 2004; Stafford 2012; Winter and May 2001). Despite its impact, soft regulation has its own limitations, including lower accountability (Girth 2014; May 2005).

Recent trends in government regulation reflect changes from the emphasis on desired actions to desired outcomes; and from regulation administered by the government to indirect regulation relying on third-party entities, information, and self-regulation (Carpenter et al. 2010; May 2002). More evidence is needed to evaluate these trends (May 2002; Potoski and Prakash 2004). Thus, there is a need systematically to study various regulatory tools across policy contexts to better understand what combination of mechanisms is effective given the nature of the market and service characteristics. Our analysis examines one potential combination of regulatory mechanisms targeting the front-line workers in the context of U.S. nursing homes.

Regulation of U.S. Nursing Homes

Currently, around 16,000 skilled nursing facilities operate in the U.S. (Amirkhanyan et al. 2018). Market failure is inherent in this field. First, information asymmetry exists between the care providers and the service recipients, who lack resources easily to exit and move from one facility to another and may have cognitive issues limiting their understanding of services and their quality. Second, this is overwhelmingly a government created and structured market with the third-party payment system limiting performance information to only what is provided by the federal payors – largely, the Medicaid and Medicare programs (Amirkhanyan, Meier, and O'Toole 2017; Brinkerhoff 2004; Chou 2002; Mukamel et al. 2011; Mukamel et al. 2012). Also, dissatisfaction with the performance of health systems due to high costs, variable access to services, uneven quality, and abuse of authority contribute to concerns about accountability in this field (Brinkerhoff 2004).

In addition to the broader concern of inadequate care quality in U.S. skilled nursing facilities, the problem of patient abuse, neglect and exploitation has been persistent.[1] Residents face several types of abuse: physical, sexual, verbal/psychological, financial exploitation, gross neglect, resident to resident physical or sexual abuse, and other harms (Jogerst, Daly, and Hartz 2005). While national data are scarce (Pickering, Nurenberg, and Schiamberg 2017), some studies estimated high rates of abuse and neglect in nursing homes through surveys (Castle 2012; Page, Conner, Prokhorov, Fang and Post 2009). Physical abuse is among the most visible and well-known forms. As many as 24% of residents experience at least one instance of physical abuse (Schiamberg et al. 2012). Physical abuse also takes the form of physical and chemical restraints. While preventing patients from removing a medical device or harming themselves, physical restraints come with negative outcomes such as infections (Balci and Arslan 2018) and can be used for non-medical reasons. Similarly, chemical restraints (i.e., antipsychotic

medications) are used to deal with behavioral problems (Cioltan et al. 2017). Efforts to curb this phenomenon range from abuse-prevention training to abuse-related regulations (Daly, Merchant and Jogerst 2011).

An important factor to consider – the staff turnover rate – has been high and likely contributed to the quality concerns in this field. The annual nursing staff turnover is 119%, 89%, 87%, 57%, and 48% for nurse aides, licensed practical nurses, registered nurses, administrators, and directors of nursing, respectively (Castle 2006).[2] While tolerating high turnover by keeping wages low might result in cost savings (Mukamel et al. 2009), high turnover and low retention rates present both human resource and service quality problems (Castle and Engberg 2005).

Federal and state regulation of nursing homes takes many forms (Mukamel et al. 2012). Nursing homes that accept Medicare and Medicaid funding are inspected by state surveyors every nine to fifteen months to determine if their practices and outcomes meet federal and state standards in terms of resident safety, health, staffing, administration, environment, and other dimensions. Physical and chemical restraints, when identified, receive their own deficiency citations outside of the broader "free from abuse and neglect" citation by state inspectors. In cases of violations, nursing facilities receive citations, and, in some cases, sanctions such as required training, fines, decertification, or termination of Medicaid and Medicare participation (Amirkhanyan, Meier, and O' Toole 2017). CMS has also introduced the five-star rating system to assess nursing home facilities based on health, staffing, and quality. Despite these efforts, nursing home regulation has been criticized for imposing high compliance costs, being deterrence-oriented and incurring high regulatory costs due to fragmentation (Amirkhanyan, Meier, and O' Toole 2017; Walshe 2001). As a result, regulatory effectiveness is a concern in this field.

Overview of the National Background Check Program

The National Background Check Program is a federal program authorized by Title VI, Subtitle B, Part III, Subtitle C, section 6201 of the 2010 Affordable Care Act (ACA) (Colello 2017). It directs the Secretary of the Department of Health and Human Services (HHS) to fund states and help them reduce patient neglect, abuse, and fund misappropriation by identifying "efficient, effective, and economical procedures for long term care facilities and providers to conduct background checks on a statewide basis for all potential direct access employees" (CMS 2014, 3). Seven states had participated in a pilot program conducted between 2006 and 2007. The assessment of the pilot suggested no clear consensus on whether the marginal benefits of fingerprint-based background checks exceed their costs (Abt Associates Inc. 2008).

States participated in the NBCP voluntarily, and applications were accepted on an ongoing basis. All states including those that have participated in the pilot program were eligible to apply.[3] As of today, the CMS has provided grants to 26 states and Washington, DC to design and implement the background check program for direct patient access employees in long-term care facilities including nursing homes. To receive grants, states must guarantee that part of the costs will be covered by using state revenues or donations. CMS provides matching funds that are three times the amount guaranteed by states, not to exceed $3 million.[4]

Participating states develop a plan to implement the program and conduct background checks in all required facilities. They are expected to achieve three milestones: having enabling legislation, implementing processes to collect fingerprints (including state-based abuse and neglect registries, state-based criminal history, and FBI fingerprint checks), and operating a rap back system continuously to monitor employees' criminal records (Murrin 2016). The rap back system provides for continued monitoring of existing employees for criminal activity during

employment. Four years after the inception of NBCP, of the 25 states Murrin (2016) studied that received grants,[5] 13 states had not yet obtained enabling legislation to conduct background checks, ten states had not implemented fingerprinting, and 15 states had not developed the capacity to monitor employees' criminal history (Murrin 2016). (Today, many states are still making progress towards their milestones). Calculating the number of disqualified employees is challenging, since only six states had submitted sufficient data. In these states, three percent of job candidates were disqualified. Common disqualifying convictions include battery, homicide/murder, and most categories of sex crimes (Radcliff et al. 2013).

Regulation of Frontline Workers in Nursing Homes

As a policy, NBCP aimed at addressing patient neglect and abuse, a persistent problem that has attracted attention of policymakers and the general public alike. The nursing home care workforce historically included employees with past criminal records. In fact, 92 percent of nursing homes have one employee with at least one criminal conviction, and almost half have more than five employees with at least one conviction (Levinson 2011). Thus, NBCP was designed as a tool to protect clients' safety and to improve services.

In organizations, street-level bureaucrats – frontline workers involved in service implementation – face a wide range of challenges such as low income, excessive stress, high caseloads, and inadequate resources (Brannon et al. 2007; Ejaz et al. 2008; Gray-Stanley and Muramatsu 2011; Lipsky 2010; Shinan-Altman and Cohen 2009). Some workers develop negative coping mechanisms such as neglect or poor service (Baggs et al. 1999; Raines 2000; Tummers et al. 2015; Wilkinson 1988). Regulation targeting frontline workers can be important to improve their performance. Background checks, in particular, are required in a variety of fields such as education, early childcare, certain health services, law enforcement, and jobs

related to national security to prevent harms by screening out disqualified candidates (Cochrane, Tett and Vandecreek 2003). They are intended to safeguard clients' best interests, reduce employee turnover, protect the organization's reputation, and avoid litigation (Cochrane, Tett and Vandecreek 2003). Some nursing schools and licensing agencies, for instance, conduct background checks on nursing students and nurses seeking licensure (Philipsen et al. 2012).

The National Background Check Program can reduce patient neglect and abuse by imposing a requirement to screen out prospective and current employees with a criminal history or a history of elder abuse. Two studies of elder abuse estimate that between 25% and 46% of perpetrators had prior criminal records (Jackson and Hafemeister 2011; Brownell et al. 1999). Compared to other hiring practices – interviews and reference checks – background checks may not be able to identify a candidate's skills and personality; but they can identify those who may have a higher likelihood of committing crimes or abusing residents in the future. The proposition that the best predictor of future behavior is past behavior has been accepted in many fields such as college applications, loan applications, credit card applications, and auto insurance applications (Kurlychek, Brame, and Bushway 2006). Research in criminology also finds that criminal history is strongly associated with subsequent criminal behavior (Cottle, Lee, and Heilbrun 2001; Gendreau, Little, and Goggin 1996; Farrington 1987; Kyckelhahn and Cooper 2017; Kurlychek, Brame, and Bushway 2006). In nursing home care, employees with criminal records may be more prone to patient neglect and abuse, compared to those without criminal records.

Drug diversion, classified as a form of abuse and neglect, is a persistent problem that can harm patients (Berge et al. 2012). Due to the vulnerable nature of nursing homes patients, their abusive and neglectful treatment necessitates recruitment and monitoring processes that

minimize the likelihood of abuse by frontline workers. Background check programs targeting frontline workers have been viewed as a key tool to improve patient safety and the overall service quality (Philipsen et al. 2012). The NBCP represents a combination of hard and soft regulation. At the state level, program participation is voluntary, and funding, technical assistance, and training are provided by CMS as incentives to assist states in implementation. At the provider level, facilities in states that enacted relevant employer and employee mandates, are required to conduct employee screenings.[6]

Despite the logic linking background checks to improved performance of direct care organizations and widespread use of such checks, there have been no systematic studies linking the use of checks to performance in nursing homes or similar organizations. Although CMS (2012) conducted an evaluation of the nursing home pilot program, they used only subjective opinion data rather than nursing home outcome data. Similarly, the Office of Inspector General's (2019) recent report focuses solely on implementation and does not provide any assessment of impact on quality of care. The broader literature on criminal background checks focuses primarily on legal issues and whether or not such checks are racially discriminatory, but does not probe whether such checks affect the performance of organizations using them (see Agan and Star 2018; Binns and Kempf 2020; Jones and Weninger 2007; Kurlychek, Bushway & Denver 2019).

Propositions

This article proposes that a program mandating criminal background checks will have an impact on overall health care quality in regulated facilities. The effect may be direct, as intended by policy. Assuming that those with prior criminal records related to drugs, financial exploitation, or violence and abuse are more prone to pursuing such actions than those without

such record, the policy that screens out the employees with past criminal history will increase patient safety and improve access to health care that is free of physical abuse, neglect or exploitation.

The causal mechanism between background check regulation and care quality can also be indirect because public policies send signals to the target population and the general public. Regulatory policies, such as excise taxes imposed on manufacturers or consumers in the tobacco industry, increase regulatory compliance by signaling to smokers about the health consequences of smoking (Licari and Meier 2000). Background check laws can have a similar signaling effect by indicating to management that their personnel decisions can be monitored and may result in legal liabilities.

These arguments can be applied to regulation of nursing homes. Background checks may not always accurately identify applicants who can deliver high quality care, and prior criminal records may not be strongly linked to the future behavior. The nursing home industry, however, is characterized by scarce labor, low wages, stress, and high caseloads. Regardless of whether background check programs are implemented effectively, they will send a signal about the importance of sound human resource practices and the potential penalties for "cutting corners." Background checks reinforce liability concerns so that human resources personnel will be more vigilant and risk averse in the recruitment process. With these direct and indirect influences in mind, we propose that the NBCP implemented within a state is likely to have a positive impact on the overall health care quality in the regulated facilities of that state.

Because background checks do not focus on quality care directly or the skills of the personnel, a reasonable case can be made for the null hypothesis of no impact. The causal chain between past criminal behavior and actions that might abuse or endanger nursing home residents

is both long and likely affected how the job is structured, changed behavior on the part of the employee, maturation or rehabilitation of the employee, and supervision of the employee. The past criminal behavior in question may also have no relationship to any on-the-job activities. The level of abuse and neglect can in fact be more closely linked to staff shortages and related turnover, residents' vulnerabilities due to limited cognitive capacity, and structural or cultural facility-level factors. Additionally, to the extent that background checks slow the personnel process and prevent filling vacancies in an industry that is characterized by high turnover, difficulty in filling positions, vacant positions and overworked staff could actually worsen organizational performance. (Note, however, that the Office of Inspector General's (2019) report, referenced above, suggests that the use of the NBCP criminal background checks in nursing homes did not limit the pool of potential applicants, which is supported by the qualitative findings of this study).

Methodology

Data

We use data from several sources. The Nursing Home Compare (NHC) data set is an administrative database that includes unbalanced panel data on all U.S. Medicare and Medicaid certified nursing facilities. The data include performance indicators (such as the number of health deficiencies and 5-star ratings), legal ownership (for-profit, public and nonprofit), facility size, hospital affiliation, percentage of residents on Medicaid, staffing hours, and other facility-level variables. In this article, we use data for the period between 2006 and 2016.

In addition, we collected data on the NBCP implementation in each state: the amount of grants received as well as state matching funds, milestones achieved, and other relevant information from a variety of sources including the CMS website, state legislative summaries,

the Inspector General Pilot Report (Abt Associates Inc. 2008), and the Inspector General Interim Report (Murrin 2016). In addition to these secondary data sources, we reached out to the NBCP program officers in each state that implemented it[7] and asked questions to verify the information about the attainment of two milestones: (1) whether the state had a fingerprinting requirement for personal care staff in skilled nursing facilities and, if yes, since when, and (2) whether the state had a rap back requirement affecting personal care staff in skilled nursing facilities and, if yes, since when. We received responses from all 26 states and Washington, DC, reflecting 100% response rate for participating states.[8]

In addition to the factual questions about program milestone attainment and dates, all of our respondents were asked and half of them were willing to answer two additional open-ended evaluative questions: (a) [h]ow have the NBCP background check policies been influencing nursing homes? (16 out of 27 respondents, or 59%) and (b) [w]hat challenges have their states experienced in the NBCP implementation process? (13 out of 27 respondents, or 48% response rate[9]). This helped generate qualitative data analyzed in this article.

We also collected information on nursing home background check practices in states that did not apply for the NBCP award. These data were obtained from the CMS website, legislative summaries, as well as through primary data collection. We reached out to state nursing home surveying agencies[11] in non-NBCP-funded states[12] to clarify (1) whether the state had a fingerprinting requirement for personal care staff in skilled nursing facilities and, if yes, since when, and (2) whether the state had a rap back requirement affecting personal care staff in skilled nursing facilities and, if yes, since when. We received a response on fingerprinting and rap back policies from all non-participating states and compared that to the information from secondary data sources.

Finally, we used state-level crime data from a publicly available Federal Bureau of Investigation (FBI) database. The resulting hybrid data set allows us to explore the effect of the NCBP program funding and milestones on archival measures of service quality generated by federal and state regulators.

Variables

Dependent variables. The quality of nursing home services is measured by using two archival measures from NHC. The *total number of health deficiencies* reflects the number of citations a facility received during a single state inspection cycle. U.S. nursing homes certified by Medicare and Medicaid are inspected once every nine to fifteen months to assess whether they meet federal standards. This indicator has been used extensively in nursing home research (Mullan and Harrington 2001; O'Neill et al. 2003; Amirkhanyan, Meier, and O'Toole 2017; Amirkhanyan et al. 2017). In this analysis, we use the total number of health deficiencies each nursing home received every year between 2006 and 2016 to measure service quality. In the sample, this variable ranges from 0 to 89 deficiencies with the mean of 8.87 (S=6.99).

In 2008, the CMS also developed *overall five-star ratings* ranging from 1 to 5 stars to make its quality assessments more accessible to the general public. By providing an intuitively comprehendible measure based by extensive data, the objective was to provide a clear and credible signal to the consumer public to allow for an informed choice of a nursing home consistent with a market constituting approach to regulation (Vogel 2018). The rating is computed using a complex formula that incorporates health deficiencies, staffing, and quality, with 5 representing the best performance. For this indicator, we use data between 2009 and 2016. In our sample, facilities on average received 3.15 stars (S=1.35).

Independent variables. The total of 26 states[13] and Washington, DC received grants from the CMS to design and implement the NBCP aimed at all direct patient access employees involved in long-term care. We use the year in which each participating state received the award and all years after that (ending in 2016) as the treatment years.[14] We created an *NBCP participation* dummy variable coded as "1" for the years in which NBCP-participating states received the award and all years after that, and "0" for all years in which these states have not yet received the award. This variable is also coded as "0" for all years for non-NBCP-participating states.

For all "treatment" years, we also created *NBCP total funding* variable reflecting the funding provided by the CMS and the funds received from the state budgets to implement the NBCP. Non-participating states were assigned the value of "0". Since we expect the effect to be non-linear, we transformed *NBCP total funding* to a log scale.

We created two dummy variables (*fingerprinting* and *rap back*) for each state/year, coded as "1" if the state had (a) fingerprinting and (b) rap back requirements in place aimed at skilled nursing facility personal care staff, and "0" if the state had no such requirement. While in many cases, these requirements were adopted by NBCP-funded states after receiving the award, some NBCP-funded states already had these requirements in place prior to receiving the award. Additionally, some non-NBCP states have one or both of these requirements in place, despite the fact that they did not participate in the NBCP.

Finally, we created *NBCP pilot program* dummy variable to control for states' participation in the pilot program ("1" for participating states). Seven states took part in the pilot in 2006.[15]

Control variables. We control for numerous organizational-level and state-level characteristics in the analysis. At the nursing home level, we include facility size (number of beds per facility), ownership type (we include *for-profit* and *nonprofit* dummy variables and use governmental homes as a comparison category), total nurse staffing hours per resident per day (including RNs, LPNs and certified nurse aides hours), percentage of residents funded by the Medicaid program, years since the facility has been certified, hospital affiliation, whether there was a change of ownership within the last year, and market competition (using Herfindahl index of market concentration representing the sum of squared percentages of resident beds). At the state level, we include the state's crime rate. Violent crime rates per 100,000 population in each state were retrieved from the FBI's Uniform Crime Reporting Program database.[16]

[Table 1 about here]

Identification Strategy

This study applies the difference-in-differences identification strategy to examine the impact of NBCP on performance. The difference-in-differences strategy has two identifying assumptions: (1) no other intervention was simultaneously enacted in treated units; (2) no pre-existing differential trends between treated and control groups. To test the parallel trend assumption, we plot raw data (see appendix A) that shows parallel trends in terms of deficiencies before treatment. We also conducted the event study (appendix B). The raw data and the event study suggest that the parallel trend assumption is fulfilled.

We estimate ordinary least squares panel regression and Poisson regression when using health deficiencies as a dependent variable, and ordinary least squares regression for 5-star ratings, all with nursing home and time fixed effects. For the star-rating, we recoded the variable into a dummy variable, with 1 representing the nursing home receives 4-star or above rating and

0 otherwise, in order to avoid the incidental parameter problem when including nursing home fixed effect in ordered logit model. We also cluster standard errors at the facility level to account for heteroscedasticity. The general specification takes the following form:

$$Q_{it} = \beta_0 + \beta_1 BC_{it} + \beta_2 X_{it} + c_i + v_t + \varepsilon_i$$

where "Q" represents quality of care (three measures), "BC" represents variables reflecting the implementation of the background check program, "X" represents a vector of control variables, and c_i and v_t are nursing home and year fixed effects.

Findings and Conclusion

Quantitative Findings

Table 2 provides summary information about the NBCP program implementation. The average amount of the total NBCP funding is $3.3 Million. Among those states that received the NBCP award, 74% had a fingerprinting requirement as of 2019, and 48% had set up a rap back system. Among non-participating states, 17% had a fingerprinting requirement, and only 4% had a rap back system.

[Table 2 about here]

We begin with a balance test that compares states that did and did not participate in the NBCP in terms of total health deficiencies, five-star ratings, number of residents, and other variables, using data in 2009. As Table 3 suggests, the mean difference between these two groups is insignificant for all variables, except the rap back requirement, which is statistically significant at the 10 percent level. The latter makes sense, since the implementation of a rap back system is an important milestone for NBCP-participating states. Overall, the balance test suggests there is no selection bias related to the variables of interest.

[Table 3 about here]

Regression results are shown in Tables 4 and 5. In both tables, three regressions are presented: (1) OLS with fixed effects and (2) Poisson models with fixed effects for regressions that use health deficiencies as a dependent variable, and (3) OLS with fixed effects for the regression that uses five-star ratings. Table 4 includes four independent variables of interest: *NBCP participation* dummy, *fingerprinting requirement, rap back requirement* and the *NBCP pilot participation*. Two out of three models (models 1 and 3) suggest that receiving an NBCP award significantly reduces health deficiencies and increases the probability of receiving 4-star and above ratings. More specifically, participating in NBCP is associated with a decrease of total number of health deficiencies by 0.46, and an increase of the probability of receiving 4-star or above ratings by 1.8 percentage points. Having a fingerprinting requirement has a similar effect (models 2). Meeting the fingerprint requirement reduces health deficiencies by 3.9 percent. There is no evidence of rap back systems being associated with service quality. Additionally, pilot program participation is associated with significantly lower health deficiencies. In Table 5, NBCP participation is replaced with NBCP total funding variable, and the findings are consistent with those in Table 4 supporting the hypothesis that receiving grants (total funding transformed to the log scale) has a positive impact on nursing home performance. More specifically, in the OLS regression, a one percent increase in funding is associated with a decrease of deficiency citations by 0.03, holding all other variables constant. Additionally, the nursing homes' star rating is also positively associated with the NBCP award amount: a nursing home's probability of being in a 4-star rating or above categories increase by 0.1 percentage point (sig. <0.01), holding all other variables constant. We also find that the fingerprinting requirement in nursing homes has a significant and negative effect on deficiencies (in the Poisson model). Once again,

we find no evidence of rap back being associated with the quality of nursing home services. As in Table 4, nursing homes in states that participated in the pilot program in 2006-2007 received, on average, fewer deficiency citations, holding all other variables constant. In summary, participation in the program, the amount of NBCP spending, the fingerprinting mandate, and participation in the NBCP pilot, appear to have a positive effect on nursing home performance.

Among control variables in Tables 4 and 5, for-profit nursing homes on average have lower service quality than public and nonprofit nursing homes, and this finding is consistent with previous research (Amirkhanyan, Kim and Lambright 2008). Additionally, change of ownership that happened within a year of the survey is negatively associated with service quality. Finally, total nurse staffing hours is associated with lower nursing home deficiencies and higher 5-star ratings.

[Table 4 and Table 5 about here]

For sensitivity analysis, we tested the effect of receiving grants for NBCP within three sectors – public, nonprofit and for-profit – and found similar patterns. We generally observe positive associations between quality and the NBCP funding as well as fingerprinting requirement in all the three sectors. However, in the for-profit sector, while the funding tends to be associated with better quality, rap back is associated with more deficiencies.[17]

We conducted jackknife estimations for a robustness check. The jackknife is a resampling technique that can be used to evaluate model performance, estimate variance, and reduce sampling errors and bias (Nisbet, Miner, and Yale 2017; Singh et al 2015). More specifically, the procedure is to leave one sample out and create an n-1 subsample each time to detect potential bias for the purpose of cross-validation. In this case, we conducted a jackknife analysis by dropping one state at a time, and thus generating 51 auxiliary regressions to compare

the key coefficients in order to determine if dropping any one state affects the significance of the coefficients on the independent variables of interests.

To compare the results from the auxiliary regressions, we standardized all the variables, captured the coefficients for each regression, and calculated the Euclidean distance between the coefficients and the grand regression with all cases. Figures 1 and 2 indicate that there is little overall distortion from the individual states. Figure 1 shows that California, which has almost 10 percent of all U.S. nursing homes, generates some positive findings. The jackknife results also suggest that other implementation variables in states may play a major role in program effectiveness.

[Figure 1 and Figure 2 about here]

We also conduct additional robustness checks. First, we include a variable: *years of participation*, to account for the fact that it might take some time for NBCP to become effective. We coded this variable as 0 for all years in which these states have not yet received the award, and coded as 1 to represent one year after receiving the award, 2 to represent two years after receiving the award, etc. The results (see appendix C) are overall similar with Table 4 and 5. The second robustness check we conduct is to estimate two OLS regressions with state-specific and nursing home-specific linear time trends (shown in appendix D).[18]

Qualitative Findings

Perceptions of program effects. We examined qualitative data collected from the NBCP program managers. Commenting on the influence of the program on nursing home care, most respondents referred to the direct effect of the program: by disqualifying individuals with serious criminal offenses or with false credentials, the program keeps them away from vulnerable

populations, and hence the quality (and safety) of care is likely to improve. The fingerprinting component was expected to help identify people who may have moved from another state, while the rap back component allows for a continuous check on any new offenses. While some respondents argued that their states typically disqualified a fairly small proportion of applicants, they also noted that they preferred to not take any risk with that population. A respondent framed this perspective as such: "…when you look at the risk factors and let's say, one of 100 people get excluded, and it's your relative or family member or a friend that is in the nursing home, a member of vulnerable population, would you want them to take that 1% risk?"

In addition to identifying people with disqualifying convictions, respondents noted that the NBCP program implemented in their state is likely to discourage certain people from pursing personal care positions:

> We started this in 1998. And, back then, we were disqualifying 4% of all applicants. Now that the general public knows about fingerprinting, that number has dropped, we are only disqualifying less than 1%.

Another respondent reiterated the preventative effect of the program:

> This is more of a preventative process. As folks require to do background checks, you tend to see those who have issues not apply. But, you know, the labor pool is full, we don't have any problems hiring.

Several respondents noted the important role of the health care industry and its support in the implementation of the NBCP program. They argued that the program not only does not restrict providers' hiring practices, but, in fact, results in a larger pool of qualified applicants, by virtue of giving them useful information about the applicants' qualifications. Also, as one respondent noted, with background checks, "there is no bias that can creep into the process. All the providers see is whether someone is eligible or not." Another respondent agreed by noting: "We have created a more equitable screening process."

Having said that, respondents in some states pointed out that the cost of new background check practices can be intimidating for providers or applicants and may be a barrier to recruitment:

> The cost can be intimidating. Some providers have been compelled to pay for these things themselves to recruit personnel. Some have a policy to reimburse the applicants after they complete the probation period. Some reimburse anyway, it's a cost they are willing to bear.

Additionally, as one respondent argued:

> There is a significant HR component to having to coordinate and having background check completed, and the time it takes the go back to get provisional and final clearances. . . . They have to consider what happens for someone who is provisional, and who then gets barred. What happens when rap back comes in? They have to coordinate all of the renewals. They have to renew background checks, but also have to do the annual verification. So, they have to dedicate a fair amount of HR resources to managing all that.

One comment summed up the overall perception of NBCP influence on nursing homes: "Overall, we have elevated the workforce here in the state, and we are seeing fewer deficiencies. We are promoting high quality of staff."

Several respondents also provided relatively unique perspectives on the effects of the program. One respondent, for example, discussed the efficiency effects of the program in their state: "The financial model was very successful for us; it contains costs, and we don't have to *re-print* with it. So – efficiency." Additionally, two respondents discussed that their state's system created a pathway for those with a criminal history to seek employment when possible (e.g., in the instances when a long time passed since the violation occurred). One stated that "people who are not eligible – there is another process for them to follow", which, they argued, has opened up the provider's pool of applicants. Similarly, a respondent stated that their system helped those who would be denied otherwise. They "pride [their] program for allowing folks, who would not be able to get more work, get it."

Challenges of implementation. When asked about the challenges of implementing the NBCP program, several respondents noted the critical role of the enabling legislation for administering fingerprinting and rap back. As one respondent noted, "I think the biggest challenge has been the legislation. We have a voluntary program here and without the legislation this wasn't something we could mandate." Another respondent argued that ""voluntary" means we are operating on a shoestring budget. Having no appropriations means that the program is self-supporting. So, our inability to secure legislation was the main issue." Meanwhile, in another state, our respondent commented: "We were lucky in our state to have a lot of support. We were able to pass the legislation for fingerprinting and rap back."

Several respondents commented on the challenges of coordination between various informational systems across agencies. The challenge involved "integrating what we do here with outside registries: department of motor vehicles, child protective services, adult protective services…" Related challenges involved getting stakeholder engagement, explaining the policy to them, getting the buy-in and having people see how the new way of screening people is going to benefit the facilities. One respondent stated that despite their "smooth transition" their challenge was "getting the providers to use the background check system that was developed."

Background checks have a significant technological component, and several respondents commented on the difficulties being not "philosophical," but "technical" and "physical": holding training on the new electronic process, creating videos on how the system would work, creating the website and resolving related issues. As one respondent noted, "Maintaining that infrastructure and keeping it operational and resilient has been a challenge." Another respondent shared, "We have legislation in place. We have everything to do it other than the equipment. We are not getting push back from other agencies, like other states…" Some respondents emphasized

the benefit of having a "single entry" system, where information about individuals and facilities can be reviewed and compared in one place. Related to the technical challenges were the geographic considerations: ensuring that enough scanning technology is available in accessible locations and ensuring their smooth operation. To summarize, the NBCP program managers expected that the program would have both direct and preventative effects on the quality of nursing home care workforce. The program was generally perceived to influence care quality, although it was associated with some political, technological and logistical difficulties.

Conclusion

Regulation is an important tool that government agencies use to shape and structure markets via controlling and influencing the performance of organizations across many policy areas. This article examines the effect of a staff background check policy, implemented at the state level, on the performance of nursing homes. In the United States, the field of nursing home care is among the most regulated policy areas: service providers are subject to strict licensure and certification, and accreditation standards. Their performance has been measured annually for several decades and, more recently, shared publicly to help enhance patient decision-making and accountability. The evidence in this research suggests that the amount of funding dedicated to the implementation of the policy is in fact significantly associated with fewer regulatory violations and higher 5-star ratings. Additionally, requiring fingerprinting is also associated with improvements in health deficiencies and star ratings. As hypothesized earlier, the mechanism may be two-fold. On the one hand, the NBCP policy implementation could result in screening out or disqualifying the candidates whose employment would undermine the quality of care. Additionally, we may be observing the indirect effects of this policy: participating states may be incentivizing the individuals involved in recruitment of nursing home staff to pursue more risk-

averse practices and, in the case of nursing facilities, to reduce future liability in cases of imprudent hiring. Similarly, the candidates with past criminal records might be discouraged from applying for jobs in the regulated states, as they would expect that their past criminal behavior will be more easily and promptly identified, and their employment would be terminated.

The criminal background check policy is an example of market constituting regulation that seeks to enhance the effectiveness of government designed markets (Vogel 2018; Polanyi 1944). By stressing the link between criminal backgrounds and potential consequences that can affect both patient care and liability risks, the policy encourages what are common practices in many industries. The regulation also sends signals to reassure potential consumers about practices in the nursing home industry and thus could potentially increase demand for the services.

Although the combination of soft and hard regulation presented an ideal situation for assessing the impact of the background check program, it also resulted in a suboptimal policy. The voluntary nature of the program permitted us to compare states before and after program adoption with a set of states that continued past practices. This allowed incorporation of national trends and other factors that could have improved nursing home performance over time and generated a more precise estimate of program impact. The research advantages must be contrasted with the policy limitations of soft regulation as almost half of the states did not participate in the program and many of those did not have an effective process for screening and monitoring its employees. The result is that the impact of the National Background Check Program was less effective than it could have been if hard regulation would have been used to mandate that all states have programs.

The overall positive impact of the adoption of the background check program and its funding and the use of fingerprinting needs to recognize that there remains substantial variation in effectiveness across the states of what appear to be similarly designed programs. That variation suggests that factors such as the management of the programs, the costs, accessibility and the ease of using the background check system, the comprehensiveness of the databases searched and other factors might play a role in program effectiveness. The absence of a systematic and publicly available federal data base on the content of the individual state programs means that research on these dimensions is difficult, and as a result this lack of data operates as a barrier to improving existing programs at the state level.

Although we were able to demonstrate the positive benefits of the National Background Check Policy in terms of performance indicators, a full cost-benefit analysis of the law was beyond the scope of this study for a variety of technical reasons. First, only some of the benefits of the law (lower health deficiencies and improved five-star ratings) were measured. No existing data links these performance indicators to actual outcomes of patient treatment or cases of abuse, so that outcome estimates were not possible. In addition, putting a cost estimate on case of elder abuse would not be straight forward. Similarly, greater screening of personnel is likely to also provide benefits to nursing homes in terms of reduced liability costs given the high level of litigation in the industry (Studdert et al. 2011; Zhao et al. 2011). In addition, the industry also likely benefits from the enhanced confidence that consumers would have in nursing homes knowing that good personnel practices were followed, and employee backgrounds were checked.

Second, there is little existing data on the costs of the NCBP program and estimating them would be difficult. Although we know the federal funds share and could estimate the state expenditures, there are no existing estimates of the costs to the individual nursing homes. Even

though a great many industries use background checks voluntarily indicating the perceived benefits to the firm exceed the costs (a national study by HR.Com in 2017 found that 93% of firms used criminal background checks for some personnel), the high level of turnover and the competitive cost pressures in the nursing home industry could affect these cost-benefit perceptions.

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Notes

[1] The Centers for Medicare and Medicaid Services seeks to identify and prevent (1) abuse (physical, verbal/psychological and sexual), (2) neglect and (3) exploitation. According to Omnibus Budget Reconciliation Act of 1987 (OBRA 1987. Pub L. No. 100-203), abuse can be defined as "the willful infliction of injury, unreasonable confinements, intimidation, or punishment with resulting physical harm, pain, or mental anguish" (Hawes, 2003). Neglect is defined as "failure to provide goods and services necessary to avoid physical harm, mental anguish, or mental illness"(Hawes, 2003). Exploitation is defined as "taking advantage of a resident for personal gain through the use of manipulation, intimidation, threats, or coercion" (42 CFR § 483.5).

[2] Also see Donoghue (2010). Turnover is also fairly high among Nursing Home Administrators (40%), compared to hospital administrators (18%), a function of low pay, long hours, stigmatized setting, stringent regulations, complex resident needs, high staff turnover, rising resident acuity levels and many other issues (Nelson et al., 2020).

[3] Although states participating in the pilot program can also apply for a grant, the maximum Federal fund is $1.5 million, as opposed to $3 million for states that have never participated in the pilot program.

[4] The decision as to whether or not they will be granted awards is based on an assessment made by the federal technical evaluation panel in terms of each state's personnel capacity, budget narrative, collaboration among state agencies, components and methodology of the background check program, etc. A score is assigned to each state, and states that meet the minimum score of 70.2 out of a total score of 101 are awarded grants (CMS, 2013).

[5] Kansas received the grant in 2015, so it was not included in the Office of Inspector General Interim Report in 2016.

[6] These states include Alaska, California, Connecticut, DC, Delaware, Florida, Georgia, Hawaii, Idaho, Illinois, Kansas, Kentucky, Maine, Michigan, Minnesota, Mississippi, Missouri, Nevada, New Mexico, North Carolina, Ohio, Oklahoma, Oregon, Rhode Island, Utah, West Virginia, and Wisconsin. We reached out to the Centers for

Medicare and Medicaid Services Office of Clinical Standards and Quality, requested and received state-level NBCP program contacts, including those states that completed program implementation and those that were considered "active" and were in the process of implementing funded activities.

[8] We were able to communicate with all state-level contacts from the CMS listing with the exception of three states, in which the CMS contact person was no longer affiliated with the program or retired. In these cases, we were referred to and were able to speak to another program officer in the background check or nursing home surveying division of state government.

[9] The reasons for non-response for these two questions included (1) respondents' time constraints and preference for a shorter interview, or email communication, and (2) respondents' preference to discuss factual program related information and avoid evaluative and subjective assessments.

[11] State survey agencies survey, monitor, and enforce federal standards in skilled nursing facilities.

[12] These states include Alabama, Arizona, Arkansas, Colorado, Indiana, Iowa, Louisiana, Maryland, Massachusetts, Montana, Nebraska, New Hampshire, New Jersey, New York, North Dakota, Pennsylvania, South Carolina, South Dakota, Tennessee, Texas, Vermont, Virginia, Washington, and Wyoming.

[13] Originally, 27 states received the NBCP funding. However, Maryland returned the federal award, and in this study, we coded it as a non-participating state.

[14] We found that the year states received grants and when they started active program implementation were very close. For example, Connecticut received the grant in 2011. In the same year, the Connecticut Department of Public Health created an implementation plan and started discussions with other state agencies and contractors to map the business-process flow of an applicant background check. The implementation of the background check program in Connecticut can be found at http://bgcheckinfo.cna.org/sites/default/files/public/rs_CT_Case_Study.pdf

[15] The seven states were Alaska, Idaho, Illinois, Michigan, Nevada, New Mexico, and Wisconsin.

[16] Violent crime in the FBI's Uniform Crime Reporting Program includes four offenses: murder and nonnegligent manslaughter, rape, robbery, and aggravated assault.

[17] The findings of sub-group analysis across sectors can be obtained from the authors.

[18] We also conducted an analysis by using a subsample of nursing homes located in adjacent counties across state borders, as shown in Appendix E. The results suggest the importance of having the rap back requirements in nursing homes across neighboring counties. Nursing homes that have implemented the rap back requirement have fewer deficiency citations. The reason could be that states that have implemented the rap back system may be better able to eliminate violators who moved across state borders, thus, reducing deficiency citations.