Have Private Equity Owned Nursing Homes Fared Worse Under COVID-19?

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Sixth Annual Volatility Institute Conference at NYU Shanghai  
*Economic and Financial Implications of COVID-19*
Source: The New York Times
COVID-19 at Nursing Homes

- Over 40% of U.S. COVID-19 deaths occurred in long-term care
- Accusations that PE ownership increased vulnerability to COVID-19

This paper:
- Evaluate performance of PE-owned nursing homes during the pandemic
- Consider cases and deaths, shortages of personal protective equipment
COVID-19 at Nursing Homes: What Do We Know?

Ex-ante, unclear whether PE ownership is necessarily bad:

► PE improves quality in competitive markets
  ► Gandhi, Song, and Upadrashta (2020)

► Quality is a poor predictor of COVID-19 outbreaks
  ► Abrams et al. (2020)
  ► Konetzka (2020)

► Financial slack matters
  ► Begley and Weagley (2020)
Background: Nursing Home Industry

- Skilled nursing facilities
  - Inpatient skilled nursing and therapy
  - *Not* assisted living facilities

- 15.6k facilities, 1.7M beds, ~5% of healthcare spending (~1% of GDP)

- Longstanding concerns about quality
  - Vulnerable populations (elderly, frail, infirm, cognitively impaired)
  - Reimbursement rates mostly set by government (low for Medicaid)
Background: Private Equity in Healthcare

- **Growth of PE**: $3.9 trillion in assets (2019).

- **PE in Healthcare**: 951 deals and $67.5 billion investment in 2019.
  - 15.9% of new capital (up from 8.5% in 1990).

- **PE in Nursing Homes**: 12% of facilities in our sample either currently or previously PE-owned.
Widespread Concern About PE in Nursing Homes

Corporate America’s Latest Target: Nursing Home Patients

The Huffington Post (2017)
Widespread Concern About PE in Nursing Homes

Overdoses, bedsores, broken bones: What happened when a private-equity firm sought to care for society’s most vulnerable

Widespread Concern About PE in Nursing Homes

*Push for Profits Left Nursing Homes Struggling to Provide Care*

Some with private equity owners, focused on making money, were particularly ill equipped and understaffed to handle Covid-19.

The New York Times (2020)
Widespread Concern About PE in Nursing Homes

From a 2007 Congressional hearing:

The industry is publicly supported, and therefore must be held accountable to the public for the care it provides. The nursing home chains should be striving to improve care and not cut corners to increase profits at the expense of the seniors and people with disabilities.

– Rep. Pete Stark (D-CA)
Widespread Concern About PE in Nursing Homes

Congress of the United States
Washington, DC 20510

November 15, 2019

Ronald E. Silva
President and Chief Executive Officer
Fillmore Capital Partners
Four Embarcadero Center
Suite 710
San Francisco, CA 9411

Dear Mr. Silva:

We are writing to request information regarding Fillmore Capital Partners’ (Fillmore) investment in companies providing nursing home care and other long-term care services and to request information about your firm’s structure and finances as it relates to these companies.
On May 8, 2020, the Centers for Medicare & Medicaid Services (CMS) mandated that nursing homes report COVID-19 cases and deaths, as well as PPE shortages, to the Centers for Disease Control and Prevention (CDC) National Healthcare Safety Network (NHSN) system.
Data

▶ **Coverage**: All CMS-certified facilities reporting to NHSN
  ▶ Case counts, deaths, and PPE shortages

▶ **Facility Characteristics**: LTCFocus.org, Nursing Home Compare, and the Provider of Services (POS) files
  ▶ Size, occupancy, resident composition, quality ratings, ownership, and geolocation data

▶ **Identifying Buyouts**: Capital IQ, PitchBook, Preqin, SDC Platinum, and Irving Levin Associates (and Google)
Identifying PE Ownership

We also pay careful attention to identifying PE exits, to distinguish between facilities with and without active PE ownership.

▶ If neither continued PE ownership nor PE exit can be confirmed, we assume the median holding period in our sample.

▶ We classify as PE-owned only if the investment firm has control rights.
  ▶ e.g. Nursing chains receiving supplementary debt financing from a PE firm, PIPE deals, etc. are excluded.

▶ All facilities acquired by PE firms in 2020 are excluded from analysis.
Empirical Strategy

- **Approach:** Compare $PE$ vs. $prior\ PE$ vs. $never\ PE$ at initial survey in terms of (1) outbreak severity and (2) PPE shortages
  - Initial surveys best represent facility status prior to the availability of national-level data to coordinate a response

- **PE Ownership:** 3% $PE$, 9% prior $PE$, 88% never $PE$

- **Other Controls:** Facility ownership, resident composition, facility characteristics, local characteristics
Empirical Strategy

▶ **Approach:** Compare outbreaks and PPE shortages by PE status

▶ **PE Ownership:** 3% PE, 9% prior PE, 88% never PE

▶ **Other Controls:**
   1. **Ownership:** chain membership, for-profit status
   2. **Composition:** demographics, intensity of care requirements
   3. **Facility controls:** occupancy, access to on-site testing, first survey date
   4. **Local controls:** county-level COVID-19 prevalence, population, local competition (HHI), locally defined outbreak measure
Local Controls

We define controls specifically for each facility in our data.

Procedure:

- Identify level of bandwidth to determine neighbors (baseline is 10km).

- For each facility, identify set of neighboring facilities within radius.

- Construct controls for each dependent variable by averaging the corresponding values of the outcome for all neighbors within the radius.
Local Controls

Outcome: Confirmed resident cases (Los Angeles area)
Empirical Strategy, contd.

**Estimation:** Logistic regression model for COVID-19 outcomes on indicators for past and present PE ownership, with additional controls

- **Outcomes:** Presence of confirmed cases, suspected cases, deaths; presence of PPE shortages

- **Other Controls:** Facility ownership, resident composition, facility characteristics, local characteristics
  - Local controls include average of outcome variable among nearby SNFs
  - State-level fixed effects
COVID-19: Residents

PE-owned facilities experience fewer resident cases and deaths.
PE-owned facilities experience fewer cases among nursing staff.
### COVID-19: Personal Protective Equipment

<table>
<thead>
<tr>
<th>Category</th>
<th>N95 masks</th>
<th>Surgical masks</th>
<th>Eye wear</th>
<th>Gowns</th>
<th>Gloves</th>
<th>Hand sanitizer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean (SD)</td>
<td>.17 (.38)</td>
<td>.09 (.28)</td>
<td>.1 (.3)</td>
<td>.19 (.4)</td>
<td>.06 (.23)</td>
<td>.07 (.25)</td>
</tr>
</tbody>
</table>

**Graph:**
- **PE:** N95 masks, Surgical masks, Eye wear, Gowns, Gloves, Hand sanitizer
- **Prior PE:** N95 masks, Surgical masks, Eye wear, Gowns, Gloves, Hand sanitizer
- **For-Profit Chain Facility:** N95 masks, Surgical masks, Eye wear, Gowns, Gloves, Hand sanitizer
COVID-19: Personal Protective Equipment

Across six types of PPE:

- PE-owned facilities have fewer shortages.
- Previously PE-owned facilities have more.
Additional Tests and Robustness

We supplement these results with the following:

- Linear probability models rather than logistic regressions

- Intensive margin of prevalence (counts of cases and deaths) using OLS

- Using county-level FEs rather than locally defined COVID-19 prevalence

- Replication of key results using state-level data
Data Limitations

Two key limitations:
1. Data are self-reported
2. Incompleteness: 7.4% of facilities with missing or low-quality responses
   - Encouraged, but not required to report cases prior to May 8th

Tests that address these concerns:
- Survey incompleteness not systematically different by PE ownership
- Result is robust to using data from state departments of health
  - Covers earlier periods and 30/50 states
  - Discrepancies between federal and state data not different by PE status
Concluding Remarks

Key Findings
- PE ownership is associated with:
  1. Lower likelihood of COVID-19 outbreak
  2. Lower likelihood of PPE shortages
- These benefits do not extend to previously PE-owned facilities

Ongoing Analysis
- Unpacking potential mechanisms:
  - Managerial aptitude
  - Availability of capital and labor (staffing)
- Persistence: Will PE-owned facilities continue to outperform in long-run?
Thank you!

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