Deterring Worker Complaints Worsens Workplace Safety: Evidence from Immigration Enforcement

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\textsuperscript{1}Abt Associates, \textsuperscript{2}Duke University

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NORA Seminar Series
Motivation

- Workplace safety and health regulators rely on complaints by workers to target scarce enforcement
  - Occupational Safety and Health Administration (OSHA) (∼ 25%) of inspections
  - OSHA inspects < 1% of establishments each year
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- Is this an effective approach?
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  - But the cost to complain (knowledge, language, retaliation), hazards, might be correlated

- Might this regulatory approach affect the actual hazards workers face?
  - Workers’ threat of complaining serves as deterrent for employers
This paper: How does immigration enforcement affect the regulation and provision of worker safety and health?

- Immigration enforcement raises cost of complaining for Hispanic workers
- Why focus on workplace safety?
- Work-related injuries are pervasive; cost $250 billion/year (Leigh 2011)
- Prior evidence that threat of retaliation for whistleblowing leads to more workplace injuries (Johnson, Schwab and Koval 2022)
- We examine effect of immigration enforcement on workplace complaints and injuries
- Secure Communities: localized enforcement program rolled out 2008–2013
- Data on worker complaints and injuries from FOIA requests; inspection occurrences
- Triple-difference research design to isolate causal effect

¹Hispanic/Latino/LatinX. Includes Mexican, Puerto Rican, Cuban, other. Term based on ACS.
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Preview of Our Results

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- (Why) did $\downarrow$ threat of complaining lead to $\uparrow$ injuries? Secure Communities...
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- \ldots and led to \( \sim 18\% \) more serious injuries among such workers

- (Why) did ↓ threat of complaining lead to ↑ injuries? Secure Communities. . .
  - lowered employer inputs into safety (compliance with safety regulations)
  - Effects are absent for unionized workers
This Paper Summarized in One Tweet...

A sure fire way to endanger the safety and health of all workers: terrify undocumented workers so they won't raise concerns about job site safety hazards.

Jacob Remes @jacremes · Oct 19, 2019

“One of the workers injured in the deadly collapse Oct. 12 of the unfinished Hard Rock Hotel in New Orleans has been detained for deportation by immigration authorities after he spoke about his experience with a television station”
nola.com/news/courts/ar...
Background and Conceptual Framework
So You Want to File a Complaint with OSHA...

- Workers have legal right to complain to OSHA under Section 11(c) of 1970 OSH Act
So You Want to File a Complaint with OSHA...

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How to File a Safety and Health Complaint

You (or your representative) have the right to file a confidential safety and health complaint and request an OSHA inspection of your workplace if you believe there is a serious hazard or if you think your employer is not following OSHA standards. The complaint should be filed as soon as possible after noticing the hazard. A signed complaint is more likely to result in an onsite inspection.

**Online - Use the Online Complaint Form**
Submit your complaint online to OSHA.

**Fax/Mail/Email - Complete the OSHA Complaint Form [En Español], or Send a Letter Describing Your Complaint**
Complete the complaint form or letter, and then fax, mail, or email it back to your local OSHA office.

**Telephone - Call Your Local OSHA Office or 800-321-6742 (OSHA)**
OSHA staff can discuss your complaint with you and respond to any questions you may have.

**In Person - Visit Your Local OSHA Office**
OSHA staff can discuss your complaint with you and respond to any questions you may have.

- Benefits:
  - Complain $\rightarrow$ OSHA inspection $\rightarrow$ fewer injuries (Levine et al. (2012); Johnson et al. (2022); Li & Singleton (2019))

- Costs: risk of employer retaliation (illegal in most cases, but rarely enforced)

  - Thousands of reports of whistleblower retaliation each year (Weatherford 2013)
  - Retaliation is common in other domains (Dahl and Knepper 2022)

  - Immigration enforcement raises undocumented workers' costs of complaining

  - "Chilling effect" extends to citizen and legal Hispanic workers (Alsan and Yang 2019)

  - "You don't want to be the family member that because you signed up for coverage you're getting your grandmother your uncle, or your parent deported" (PBS News Hour 2015)

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Would a Lower Pr(Complain) Cause Workers to Face Worse Workplace Hazards?

- If Workers’ Pr(Complain | hazard) falls...
  - ... Employers’ expected benefits of remediating hazards is lower (less scrutiny, publicity)
  - ... Less incentive for employers to remediate safety hazards (Becker 1968)
Would a Lower Pr(Complain) Cause Workers to Face Worse Workplace Hazards?

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- But wait...don’t employers already have incentives to minimize injuries?
Would a Lower $\text{Pr(Complain)}$ Cause Workers to Face Worse Workplace Hazards?

- If Workers’ $\text{Pr(Complain $|$ hazard)}$ falls...
  - ... Employers’ expected benefits of remediating hazards is lower (less scrutiny, publicity)
  - ... Less incentive for employers to remediate safety hazards (Becker 1968)

- But wait...don’t employers already have incentives to minimize injuries?
  - Many eligible injuries do not get reported to workers’ compensation (Biddle and Roberts 2003)
  - Frictions, monopsony, dampen discipline of competition (Lavetti and Schmutte 2018)
Need Three Measures to Undertake Analysis

1. Worker complaints and workplace injuries
2. Workforce demographics
3. Local immigration enforcement
Need Three Measures to Undertake Analysis

1. Worker complaints and workplace injuries
   - **Complaints:**
     1.1 All complaints received by OSHA (obtained through FOIA request)
     1.2 OSHA inspections triggered by worker complaint
   - **Injuries:** OSHA inspections triggered by serious accident

2. Workforce demographics

3. Local immigration enforcement
Need Three Measures to Undertake Analysis

1. Worker complaints and workplace injuries

2. Workforce demographics
   - Ideal: share of Hispanic workers by workplace
   - Our proxy: share of Hispanic workers at county-industry level
     - American Community Survey 2005–2007
     - Industries: ~2-digit NAICS codes (Ag, Construction, Manufacturing...)

3. Local immigration enforcement
Need Three Measures to Undertake Analysis

1. Worker complaints and workplace injuries

2. Workforce demographics

3. Local immigration enforcement
   - County participation in **Secure Communities**
     - Local law enforcement agencies automatically share arrestees’ fingerprints with ICE
     - Mandatory participation, rolled out across counties 2008 – 2013
## Summary Stats by Industry

<table>
<thead>
<tr>
<th>Industry</th>
<th>Share Hispanic workers</th>
<th>total # complaints</th>
<th># formal complaints</th>
<th># complaint inspections</th>
<th># injury inspections</th>
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<tbody>
<tr>
<td>Agriculture, forestry, fishing</td>
<td>0.42</td>
<td>5.30</td>
<td>1.84</td>
<td>3.38</td>
<td>3.16</td>
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<td></td>
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<td>(27.14)</td>
<td>(7.20)</td>
<td>(16.08)</td>
<td>(12.45)</td>
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<td>Manufacturing</td>
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<td>14.84</td>
<td>4.22</td>
<td>6.43</td>
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<td></td>
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<td>(7.88)</td>
<td>(10.37)</td>
<td>(9.30)</td>
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<td>Wholesale trade</td>
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<td>1.26</td>
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<td>(8.80)</td>
<td>(2.32)</td>
<td>(3.20)</td>
<td>(2.42)</td>
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<td>Retail trade</td>
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<td>8.31</td>
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<td>2.20</td>
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<td>(15.56)</td>
<td>(3.73)</td>
<td>(4.42)</td>
<td>(1.86)</td>
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<tr>
<td>Transportation/ warehousing</td>
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<td>13.25</td>
<td>3.43</td>
<td>3.81</td>
<td>1.04</td>
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<td></td>
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<td>(6.24)</td>
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<td>Technical Services</td>
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<td>(3.07)</td>
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<td>Admin and Support Services</td>
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<td>1.08</td>
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<td>(0.17)</td>
<td>(9.58)</td>
<td>(3.05)</td>
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<td>(3.89)</td>
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<td>Education Services</td>
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<td>(5.18)</td>
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<td>Health Care and Social Assistance</td>
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<td>(0.60)</td>
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<td>0.69</td>
<td>0.69</td>
<td>0.36</td>
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<td></td>
<td>(0.12)</td>
<td>(7.22)</td>
<td>(1.66)</td>
<td>(1.49)</td>
<td>(1.37)</td>
</tr>
<tr>
<td>Accomodation and Food Services</td>
<td>0.16</td>
<td>4.97</td>
<td>0.89</td>
<td>1.23</td>
<td>0.17</td>
</tr>
<tr>
<td></td>
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<td>(12.13)</td>
<td>(2.89)</td>
<td>(5.15)</td>
<td>(0.81)</td>
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<td>Repair Services</td>
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<td>5.36</td>
<td>1.13</td>
<td>1.74</td>
<td>0.51</td>
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<td>(0.19)</td>
<td>(8.84)</td>
<td>(2.15)</td>
<td>(2.96)</td>
<td>(1.74)</td>
</tr>
<tr>
<td>Other Services</td>
<td>0.13</td>
<td>3.92</td>
<td>0.86</td>
<td>1.05</td>
<td>0.16</td>
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<tr>
<td></td>
<td>(0.15)</td>
<td>(7.14)</td>
<td>(1.77)</td>
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</table>
Effect of immigration enforcement on complaints to OSHA and workplace injuries
Event study Regression Specification

For county $c$, industry $i$ and year $t$:

$$\text{asinh}(Y_{cit}) = \sum_{k \neq -1} \beta_1^k (I_{c,t=k}) + \sum_{k \neq -1} \beta_2^k (I_{c,t=k} \times \text{Hispanic}_{ci})$$

$$+ \Gamma \times X_{cit}$$

$$+ \zeta_{ci} + \eta_{it} + \theta_{rt} + \text{Hispanic}_{ci} \times \delta_t + \epsilon_{cit}$$

- $Y_{cit} =$ Number of complaints or number of injuries
- $I_{c,t=k} =$ Indicator for year $k$ relative to Secure Communities activation in county $c$
- $\text{Hispanic}_{ci} =$ Hispanic workforce share [0,1]
- $X_{cit} : \{ \text{asinh(employment) + asinh(programmed inspections)} \}$
- SEs clustered by county, regression weighted by 2005–2007 employment
Immigration enforcement leads to immediate & persistent drop in complaints in workplaces with Hispanic workers.
But Immigration enforcement leads to **More** workplace injuries
Effects on Complaints and Injuries: Excluding Services
### Effect of immigration enforcement on complaints and injuries: Regression estimates

<table>
<thead>
<tr>
<th>Dependent variable:</th>
<th>Total complaints (1)</th>
<th>Inverse hyperbolic sine of Formal complaints (2)</th>
<th>Inverse hyperbolic sine of Complaint-driven inspections (3)</th>
<th>Injury-driven inspections (4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SC</td>
<td>0.099*** (0.036)</td>
<td>0.019 (0.035)</td>
<td>0.113*** (0.031)</td>
<td>-0.020 (0.014)</td>
</tr>
<tr>
<td>SC×Hispanic share</td>
<td>-0.64** (0.26)</td>
<td>-0.48*** (0.17)</td>
<td>-0.40** (0.16)</td>
<td>0.19** (0.08)</td>
</tr>
<tr>
<td>Mean Dep Var (in levels)</td>
<td>8.51</td>
<td>2.00</td>
<td>2.97</td>
<td>0.86</td>
</tr>
<tr>
<td>Mean share Hispanic if high-Hispanic share=1</td>
<td>0.38</td>
<td>0.38</td>
<td>0.38</td>
<td>0.38</td>
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<tr>
<td># Observations</td>
<td>472,164</td>
<td>472,164</td>
<td>472,164</td>
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</tr>
</tbody>
</table>
Interpreting the magnitudes

- If we assume that:
  - Immigration enforcement has zero effect on non-Hispanic workers
  - The effect on Hispanic workers is independent of demographics of co-workers
Interpreting the magnitudes

- If we assume that:
  - Immigration enforcement has zero effect on non-Hispanic workers
  - The effect on Hispanic workers is independent of demographics of co-workers

- Then Secure Communities
  - Reduced complaints by Hispanic workers by 40–50%
  - Increased risk of injury among Hispanic workers by 17%
Results are robust to... 
- Alternative exposure measures: non-citizens, Hispanic non-citizens
- Alternative measure of Hispanic share from QWI instead of ACS
- Bias from heterogeneous treatment effects (Goodman-Bacon 2021)
Results are robust to... 
- Alternative exposure measures: non-citizens, Hispanic non-citizens
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- Lots of other stuff...
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<table>
<thead>
<tr>
<th>Sample restrictions</th>
<th>Complaints</th>
<th>Injuries</th>
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<tbody>
<tr>
<td>Drop border counties</td>
<td></td>
<td></td>
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<tr>
<td>Drop early adopters</td>
<td></td>
<td></td>
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<tr>
<td>Drop highest Hispanic workforce share</td>
<td></td>
<td></td>
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<tr>
<td>Drop largest Hispanic population</td>
<td></td>
<td></td>
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<tr>
<td>Control for asinh(establishments)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extra Controls</td>
<td></td>
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<td>Bartik controls</td>
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<td>OSHA region-year FE</td>
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<td>State-year FE</td>
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<td>State-specific trends</td>
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<td>County-year FE</td>
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<td>Log instead of asinh of dep var</td>
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<td></td>
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<tr>
<td>Dep var as rate per establishment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poisson instead of OLS</td>
<td></td>
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</table>

Change in controls

<table>
<thead>
<tr>
<th>Alternative specifications</th>
<th>Complaints</th>
<th>Injuries</th>
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<tbody>
<tr>
<td>Log instead of asinh of dep var</td>
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</table>
(Why) Does a Lower $\text{Pr(Complain)}$ Lead to More Injuries?
Why Did Secure Communities Lead to More Workplace Injuries?

1. Reduced compliance with OSHA regulations at workplaces with Hispanic workers.
2. Had no effect on complaints or injuries at unionized workplaces.
3. Also increased minimum wage violations for Hispanic workers.
4. Led to tiny changes in worker composition (quits, turnover).
Why Did Secure Communities Lead to More Workplace Injuries?

Secure Communities . . .

1. . . . reduced **compliance** with OSHA regulations at workplaces with Hispanic workers
Why Did Secure Communities Lead to More Workplace Injuries?

Secure Communities...

1. ... reduced **compliance** with OSHA regulations at workplaces with Hispanic workers

2. ... Had no effect on complaints or injuries at **unionized workplaces**
Why Did Secure Communities Lead to More Workplace Injuries?

Secure Communities ... 

1. ... reduced **compliance** with OSHA regulations at workplaces with Hispanic workers

2. ... Had no effect on complaints or injuries at **unionized workplaces**

3. ... also increased **minimum wage violations** for Hispanic workers

4. ... led to **tiny** changes in worker composition (quits, turnover)
Measuring the Effect on Compliance with safety regulations

- One of employers’ safety inputs is compliance with government safety+health regulations
- OSHA’s inspection database (IMIS) includes number of various categories of violations detected in each inspection
- Restrict attention to violations in “programmed inspections” (which are exogenous to immigration enforcement)
Immigration enforcement leads to worse OSHA compliance at workplaces with more Hispanic workers

<table>
<thead>
<tr>
<th>Dep Var = # of</th>
<th>Overall violations (1)</th>
<th>Serious violations (2)</th>
<th>Repeat or Willful violations (3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SC</td>
<td>-0.08</td>
<td>-0.10</td>
<td>-0.01</td>
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<tr>
<td></td>
<td>(0.07)</td>
<td>(0.07)</td>
<td>(0.01)</td>
</tr>
<tr>
<td>SC×Hispanic share</td>
<td>0.60*</td>
<td>0.71**</td>
<td>0.05</td>
</tr>
<tr>
<td></td>
<td>(0.31)</td>
<td>(0.28)</td>
<td>(0.03)</td>
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</tbody>
</table>

Mechanisms

- Exposure measure × year ✓ ✓ ✓
- County × industry FE ✓ ✓ ✓
- Industry × year FE ✓ ✓ ✓
- OSHA region × year FE ✓ ✓ ✓
Labor Unions and the Costs/Benefits of Complaining

- Labor unions:
  - solve “public goods” problem by filing complaints directly (Weil and Pyles 2005)
  - Keep identity of worker anonymous after complaint (Morantz 2018)
  - Include safety-specific provision in contract agreements (Hirsch et al. 1997)
Labor Unions and the Costs/Benefits of Complaining

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  - Include safety-specific provision in contract agreements (Hirsch et al. 1997)

- Hispanic workers’ union membership rates very similar to national average (BLS)

- Unionized workplaces with Hispanic workers should be **unaffected** by Secure Communities
WORKPLACE PROTECTIONS FOR IMMIGRANT WORKERS

Here are some of the safeguards our immigrant members enjoy through the strong contract language many of our locals have won in bargaining:

- Employers can't discriminate against a worker because of their national origin, immigration status, or in the event their work authorization changes.
- Workers get a paid holiday to attend their citizenship swearing-in ceremony without losing compensation for that time off.
- Employers contribute to a joint fund with workers for legal assistance on immigration and naturalization proceedings.
- If a worker is fired or resigns because of an issue in their work authorization, they get 12 months to provide proof of work authorization for immediate rehire without loss of seniority.
- Employers must contact the Union immediately in the event of an inquiry into a worker from the Department of Homeland Security.
- The employers are also expected to refuse ICE agents entrance to the workplace or inspection of worker documents without a valid judicial warrant, creating a safe working environment for everyone.
Labor Unions mitigate the chilling effect of immigration enforcement

<table>
<thead>
<tr>
<th></th>
<th>Non-unionized (1)</th>
<th>Unionized (2)</th>
<th>Non-Unionized (3)</th>
<th>Unionized (4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SC</td>
<td>0.088***</td>
<td>0.032</td>
<td>-0.055***</td>
<td>-0.007</td>
</tr>
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<td></td>
<td>(0.033)</td>
<td>(0.023)</td>
<td>(0.021)</td>
<td>(0.011)</td>
</tr>
<tr>
<td>SC×Hispanic share</td>
<td>-0.53***</td>
<td>-0.05</td>
<td>0.29**</td>
<td>0.10</td>
</tr>
<tr>
<td></td>
<td>(0.18)</td>
<td>(0.15)</td>
<td>(0.12)</td>
<td>(0.09)</td>
</tr>
<tr>
<td>p-value on difference:</td>
<td>0.02</td>
<td>0.07</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asinh(programmed inspections)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Asinh(employment)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Hispanic share × year</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>County × industry FE</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Industry × year FE</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>OSHA region × year FE</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>OSHA jurisdiction × year FE</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Mean Dep Var (in levels)</td>
<td>3.80</td>
<td>0.84</td>
<td>1.17</td>
<td>0.25</td>
</tr>
<tr>
<td># Observations</td>
<td>216,411</td>
<td>216,411</td>
<td>216,411</td>
<td>216,411</td>
</tr>
</tbody>
</table>
Conclusion

- The threat of complaining has a meaningful effect on workers’ safety and health.
- Hispanic (esp. immigrant) workers face especially large barriers to complain.
- Going forward: how to design a system for vulnerable workers to speak up about safety hazards?

matthew.johnson@duke.edu
Measuring worker complaints and workplace injuries

- Source: OSHA’s Integrated Management Information Systems (IMIS)
  - Each inspection: date, reason, employer location/industry/name/etc.

- Among inspections 2003–2016 (∼ 100,000 / year):
  - ∼ 20% triggered by worker complaint
  - ∼ 5% triggered by serious accident
  - Most of rest: “programmed” (exogenous, conditional on industry etc.)
Spatial distribution of Hispanic workforce share

Agriculture

Construction

Hispanic workforce share

- 0.56 - 1
- 0.32 - 0.56
- 0.17 - 0.32
- 0.07 - 0.17
- \( \leq 0.07 \)

Data
Roll-out of Secure Communities

2009

2010

2011

2012

Data
Secure Communities-related deportations over time

Data
Sample

- 48 contiguous U.S. states + DC
- Years: 2003–2016
- Agriculture, construction, manufacturing industries (consider all industries in robustness checks)
- County-industries with at least 96 employees on average
- 103,488 county-industry-year observations
Hispanic workforce share by industry

Agriculture, forestry, fishing: 0.14
Construction: 0.09
Manufacturing: 0.09
Wholesale trade: 0.07
Retail trade: 0.06
Transportation/ warehousing: 0.05
Non-citizen workforce share by industry

- Agriculture, forestry, fishing: 0.10
- Construction: 0.06
- Manufacturing: 0.05
- Wholesale trade: 0.03
- Retails trade: 0.02
- Transportation/warehousing: 0.02

Average non-citizen workforce share
Hispanic non-citizen workforce share by industry

- Agriculture, forestry, fishing: 0.09
- Construction: 0.05
- Manufacturing: 0.04
- Wholesale trade: 0.03
- Retail trade: 0.01
- Transportation/warehousing: 0.01
Worker complaints and workplace injury rates by industry

Worker complaints

- Agriculture, forestry, fishing: 1.0
- Construction: 4.5
- Manufacturing: 3.6
- Wholesale trade: 1.3
- Retail trade: 0.7
- Transportation/ warehousing: 1.5

Complaint-driven inspections per 100,000 workers

Workplace injuries

- Agriculture, forestry, fishing: 1.1
- Construction: 1.5
- Manufacturing: 0.5
- Wholesale trade: 0.3
- Retail trade: 0.1
- Transportation/ warehousing: 0.5

Injury-driven inspections per 100,000 workers
Heterogeneous treatment effects are not a source of meaningful bias (Goodman-Bacon (2021) decomposition)
### Robustness checks: alternative exposure measure

<table>
<thead>
<tr>
<th>Exposure measure:</th>
<th>Dependent variable: asinh(complaint-driven inspections)</th>
<th>Dependent variable: asinh(injury-driven inspections)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SC</td>
<td>0.099*** (0.036)</td>
<td>-0.02 (0.01)</td>
</tr>
<tr>
<td>SC × Hispanic share</td>
<td>-0.64** (0.26)</td>
<td>0.19** (0.08)</td>
</tr>
<tr>
<td>SC × non-citizen share</td>
<td>-0.83** (0.42)</td>
<td>0.31** (0.13)</td>
</tr>
<tr>
<td>SC × Hispanic non-citizen share</td>
<td>-1.07** (0.45)</td>
<td>0.36** (0.17)</td>
</tr>
</tbody>
</table>

Significance codes: * $p < .1$, ** $p < .05$, *** $p < .01$. Heteroskedasticity-robust standard errors clustered at the county in parentheses.
### Accounting for measurement error with IV

**IV = Hispanic workforce share from Quarterly Workforce Indicators (QWI)**

<table>
<thead>
<tr>
<th>Dependent variable:</th>
<th>Inverse Hyperbolic Sine of the Number of:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Complaint Inspections</td>
</tr>
<tr>
<td></td>
<td>Injury Inspections</td>
</tr>
<tr>
<td>Model:</td>
<td>OLS</td>
</tr>
<tr>
<td></td>
<td>IV</td>
</tr>
<tr>
<td></td>
<td>OLS</td>
</tr>
<tr>
<td></td>
<td>IV</td>
</tr>
<tr>
<td>(1)</td>
<td>(2)</td>
</tr>
<tr>
<td>(3)</td>
<td>(4)</td>
</tr>
<tr>
<td>SC</td>
<td>0.098***</td>
</tr>
<tr>
<td></td>
<td>(0.036)</td>
</tr>
<tr>
<td>SC×Hispanic share [QWI]</td>
<td>-0.78***</td>
</tr>
<tr>
<td></td>
<td>(0.30)</td>
</tr>
<tr>
<td>SC × Share Hispanic workers</td>
<td>-0.71***</td>
</tr>
<tr>
<td></td>
<td>(0.26)</td>
</tr>
<tr>
<td>Asinh(programmed inspections)</td>
<td>✓</td>
</tr>
<tr>
<td>Asinh(employment)</td>
<td>✓</td>
</tr>
<tr>
<td>Hispanic workforce share × year</td>
<td>✓</td>
</tr>
<tr>
<td>County × industry FE</td>
<td>✓</td>
</tr>
<tr>
<td>Industry × year FE</td>
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<tr>
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<td>✓</td>
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<tr>
<td># Observations</td>
<td>400,283</td>
</tr>
</tbody>
</table>

Robustness: 12 / 21
Unionized workers as a “placebo group”

- Labor unions:
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<tr>
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<td></td>
<td></td>
</tr>
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<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
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<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Hispanic share × year</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>County × industry FE</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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</tr>
<tr>
<td>Industry × year FE</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>OSHA region × year FE</td>
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<td>✓</td>
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<td>Mean Dep Var (in levels)</td>
<td>3.80</td>
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<td>0.25</td>
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<td>216,411</td>
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<td>216,411</td>
</tr>
</tbody>
</table>
### Effect of immigration enforcement on complaints and injuries: States under Federal OSHA jurisdiction

<table>
<thead>
<tr>
<th>Dependent variable:</th>
<th>Total complaints (1)</th>
<th>Inverse hyperbolic sine of Formal complaints (2)</th>
<th>Inverse hyperbolic sine of Complaint-driven inspections (3)</th>
<th>Inverse hyperbolic sine of Injury-driven inspections (4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SC</td>
<td>0.045 (0.038)</td>
<td>0.059 (0.040)</td>
<td>0.067** (0.031)</td>
<td>-0.019 (0.017)</td>
</tr>
<tr>
<td>SC×Hispanic share</td>
<td>-0.85** (0.33)</td>
<td>-0.78*** (0.23)</td>
<td>-0.61*** (0.18)</td>
<td>0.21*** (0.08)</td>
</tr>
<tr>
<td>Mean Dep Var (in levels)</td>
<td>8.51</td>
<td>2.00</td>
<td>2.97</td>
<td>0.86</td>
</tr>
<tr>
<td>Mean share Hispanic if high-Hispanic share=1</td>
<td>0.38</td>
<td>0.38</td>
<td>0.38</td>
<td>0.38</td>
</tr>
<tr>
<td># Observations</td>
<td>472,164</td>
<td>472,164</td>
<td>472,164</td>
<td>472,164</td>
</tr>
</tbody>
</table>
Immigration Enforcement and Compliance with the Minimum Wage

- Imperfect enforcement ⇒ imperfect compliance with minimum wage laws (Ashenfelter and Smith 1979; Clemens and Strain 2020)

- Like OSHA, Wage&Hour relies on worker complaints to target enforcement
Immigration Enforcement and Compliance with the Minimum Wage

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- Did Secure Communities increase minimum wage violations for Hispanic workers?
Immigration Enforcement and Compliance with the Minimum Wage

- Imperfect enforcement $\Rightarrow$ imperfect compliance with minimum wage laws (Ashenfelter and Smith 1979; Clemens and Strain 2020)

- Like OSHA, Wage&Hour relies on worker complaints to target enforcement

- Did Secure Communities increase minimum wage violations for Hispanic workers?
  - **IPUMS: CPS-MORG** data on hourly wage, worker ethnicity, other demographics
  - $\sim 40\%$ of respondents have county of residence in IPUMS
  - Merge with state-year effective minimum wage rate
  - Sample: workers in bottom quintile of wage distribution (Fine et al. 2020)
Effect of Secure Communities on Minimum Wage Violations

\[ Below_{ict} = \beta_1 SC_{ct} + \beta_2 SC_{ct} \times Hispanic_i + \beta_3 MW_{c(s)t} + \Gamma X_i + \zeta_c + \theta_r + \epsilon_{ict} \]
Effect of Secure Communities on Minimum Wage Violations

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<table>
<thead>
<tr>
<th>Sample</th>
<th>Dependent variable:</th>
<th>All workers</th>
<th>Hourly workers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Wage&lt; Min Wage (1)</td>
<td>Wage&lt; Min Wage (2)</td>
<td>Wage&lt; Min Wage (3)</td>
</tr>
<tr>
<td>SC</td>
<td>-0.001 (0.002)</td>
<td>0.000 (0.002)</td>
<td>-0.002 (0.003)</td>
</tr>
<tr>
<td>Hispanic=1 × SC</td>
<td>0.008*** (0.002)</td>
<td>0.007*** (0.001)</td>
<td>0.006*** (0.002)</td>
</tr>
<tr>
<td>County FE</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Census region × year × quarterFE</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Mean Dep Var</td>
<td>0.04</td>
<td>0.03</td>
<td>0.04</td>
</tr>
<tr>
<td># Observations</td>
<td>850,997</td>
<td>850,997</td>
<td>475,761</td>
</tr>
</tbody>
</table>

Significance codes: * \( p < .1 \), ** \( p < .05 \), *** \( p < .01 \). Heteroskedasticity-robust standard errors clustered at the county in parentheses.
Is the Mechanism Truly due to Lower Pr(Complain)?
- Is the effect of Secure Communities on safety, minimum wage violations, due to ↓ Pr(complain), or general reduction in bargaining power?
Is the Mechanism Truly due to Lower Pr(Complain)?

- Is the effect of Secure Communities on safety, minimum wage violations, due to ↓ Pr(complain), or general reduction in bargaining power?
Why is the threat to complain such a large deterrent?

- SC decreased complaints by 40%, increased injuries by 18%, for Hispanic workers
- Implies elasticity of injuries w.r.t. Pr(complain) of 0.45!
- Shouldn’t labor market competition, other forces, mute the role of complaints?
- Hirschman (1970): “exit” (e.g., quitting) versus “voice” (e.g., complaining)
- “Exit” option is less available for Hispanic workers
- Fewer outside employment opportunities (esp for undocumented) (East et al. 2020)
- Less access to UI and public assistance in event of job loss (Nichols and Sims 2012)
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Secure Communities Had Only a Tiny Effect on Hispanic workers’ Separation rate

<table>
<thead>
<tr>
<th>Dependent variable:</th>
<th>asinh(employment), Hispanic workers (1)</th>
<th>separation rate, Hispanic workers, (2)</th>
<th>stable turnover rate, Hispanic workers (3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SC</td>
<td>-0.020*** (0.004)</td>
<td>0.010*** (0.002)</td>
<td>-0.000 (0.000)</td>
</tr>
<tr>
<td>County × industry FE</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Industry × year FE</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>OSHA region × year FE</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Mean Dep Var (in levels)</td>
<td>4271.05</td>
<td>0.27</td>
<td>0.13</td>
</tr>
<tr>
<td># Observations</td>
<td>422,184</td>
<td>341,777</td>
<td>289,229</td>
</tr>
</tbody>
</table>

Significance codes: * p < .1, ** p < .05, *** p < .01. Heteroskedasticity-robust standard errors clustered at the county in parentheses.

Mechanisms