The 2014-15 Disneyland measles outbreak was associated with an increase in measles vaccine coverage among U.S. children of college educated mothers + a decrease in age at measles vaccination among all U.S. children.

INTRODUCTION

- Media attention can influence health-related behaviors.
- Among recent outbreaks, the 2014-15 Disneyland measles outbreak received considerable media attention, with 90% of U.S. parents aware of the outbreak.
- To examine the relationship between the Disneyland outbreak & the uptake of measles-containing vaccine (MCV) among U.S. children

METHODS

- Study design: Difference-in-differences design, which included pneumococcal conjugate vaccine (PCV) as a negative control.
- Exposure: Media coverage of the Disneyland measles outbreak characterized as a binary variable; birth cohorts with children <19 months of age as of Jan 2015 were defined as exposed.
- Outcomes:
  1. MCV coverage by 19 months of age.
  2. Mean age at MCV administration by 19 months of age.
- Statistical analyses:
  - Outcome 1: bionomial regression with an identity-link function.
  - Outcome 2: linear regression.

WEIGHTED SAMPLE POPULATION

Table 1. Weighted participant characteristics by exposure status.

<table>
<thead>
<tr>
<th>Exposure Status</th>
<th>Unexposed % (95% CI)</th>
<th>Exposed % (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parental Education</td>
<td></td>
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<tr>
<td>College</td>
<td>32.4 (31.5, 33.4)</td>
<td>32.9 (32.1, 33.7)</td>
</tr>
<tr>
<td>Not college</td>
<td>67.6 (66.6, 68.5)</td>
<td>67.1 (66.3, 67.9)</td>
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<tr>
<td>Income</td>
<td></td>
<td></td>
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<tr>
<td>Above poverty</td>
<td>35.1 (34.2, 36.1)</td>
<td>35.6 (34.7, 36.5)</td>
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<tr>
<td>≤$75,000</td>
<td>24.9 (23.9, 25.8)</td>
<td>23.9 (23.0, 24.9)</td>
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<tr>
<td>≤$30,000</td>
<td>14.8 (13.9, 15.7)</td>
<td>14.8 (13.9, 15.7)</td>
</tr>
<tr>
<td>≥$75,000</td>
<td>31.1 (30.2, 32.1)</td>
<td>31.5 (30.6, 32.5)</td>
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<tr>
<td>Age</td>
<td></td>
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<tr>
<td>&lt;12 years</td>
<td>31.4 (30.8, 32.1)</td>
<td>31.7 (31.1, 32.4)</td>
</tr>
<tr>
<td>≥12 years</td>
<td>68.6 (68.3, 69.0)</td>
<td>68.3 (68.0, 68.6)</td>
</tr>
</tbody>
</table>

RESULTS

Figure 1. Time trends of MCV + PCV: (A) ≥1-dose vaccine coverage and (B) age in days at administration.

- In adjusted models, the exposure was associated with an increase in MCV 21-dose vaccine coverage & an overall decrease in age at MCV vaccination.

Figure 2. Absolute differences between exposed & unexposed cohorts in (A) ≥1-dose vaccine coverage and (B) age at vaccination in days, by maternal education.

- In adjusted models, the exposure was associated with an increase in MCV 21-dose vaccine coverage among children of college-educated mothers & a decrease in age at vaccination among all U.S. children.

CONCLUSIONS

- The Disneyland outbreak was associated with an increase in MCV coverage among U.S. children of college-educated mothers, + an overall decrease in MCV age at administration among U.S. children.
- These data complement national surveys that report higher MCV support among parents aware of the outbreak, + the creation of stricter office vaccination policies by healthcare providers following the outbreak.
- These data may provide meaningful insights to inform interventions to address vaccine hesitancy.

FINANCIAL DISCLOSURE

- Funding for this project was provided by an ACPHS new faculty start up award

REFERENCES