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# Legal and Policy Responses to Vaccine-Preventable Disease Outbreaks

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## Introduction

In 1998, Andrew Wakefield and co-authors published an article in *The Lancet* that linked the measles-mumps-rubella (MMR) vaccine to autism. The study has since been retracted, Wakefield was stripped of his medical license, and the study's findings were extensively debunked.<sup>1</sup> However, this and other fallacies have led to a decline in vaccination rates<sup>2</sup> and the re-emergence of vaccine-preventable diseases.<sup>3</sup> Eleven outbreaks of measles,<sup>4</sup> a vaccine-preventable disease declared eradicated from the U.S. in 2000,<sup>5</sup> were reported in the U.S. as of October 2018.

Recent vaccine-preventable disease outbreaks have occurred in amusement parks, local communities, and college campuses. Laws and policies are vital tools in preventing outbreaks and limiting the further spread of disease, but they vary in content and implementation. This manuscript provides insight into challenges surrounding vaccine laws and policies by examining legislative changes in California, the laws implicated in the response to a measles outbreak in a largely unvaccinated community in Minnesota, and policy changes on certain college campuses.

## California's Legislation and Its Aftermath

In 2015, following a measles outbreak that began in Disneyland,<sup>6</sup> California passed SB277, a law removing the non-medical exemption to school vaccination requirements. The law passed four committees and

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two houses of the legislature with large majorities, in spite of aggressive opposition and activism from the anti-vaccine minority.<sup>7</sup>

The rates of fully vaccinated kindergarten students went from 92.8% to over 95% in 2017, connected to both the law and the efforts to bring conditional admission students up-to-date.<sup>8</sup> The law has withstood multiple legal challenges, with six courts — federal district courts, state courts, and one state appellate court — upholding its constitutionality.<sup>9</sup>

However, implementation challenges remain. One challenge is that the language in SB277 exempting students with Individualized Educational Programs (IEPs) needs to be interpreted. It is not clear whether those students are exempt from vaccination requirements completely, or just to the extent defined in their IEP, and districts vary in implementation.<sup>10</sup> Medical exemptions have also gone up, from 0.2% before the law to 0.7%. While the rate is low, the trend — a tripling — and the pattern of distribution, with some schools having very high rates, is troubling.<sup>11</sup> Part of the problem is that the language of the law leaves medical exemptions to the discretion of the individual doctor, with few tools available for oversight.<sup>12</sup> Medical board activity against doctors selling exemptions has been limited.

The hostility from the anti-vaccine movement has not abated. Additional challenges may be filed, though a growing body of law upholding SB277 should limit their chances of success. Overall, SB277 improved California's vaccination rates, but implementation has not been problem-free.

### **An Overview of Minnesota Laws Used to Contain a Measles Outbreak**

Minnesota law requires that children receive certain vaccines for school and childcare, unless the child has a medical or personal belief exemption (PBE).<sup>13</sup> In 2017, pockets of unvaccinated individuals using PBEs contributed to the largest measles outbreak in decades with 79 cases, of which 91% were unvaccinated.<sup>14</sup>

As in most states, the Minnesota Commissioner of Health has general authority under Minnesota statutory law to prevent and control the spread of disease.<sup>15</sup> However, to manage the outbreak the Minnesota Department of Health (MDH) had to rely on a variety of laws, some under the authority of other state agencies.

First, to contain the outbreak MDH needed to identify contacts and verify their vaccination status in order to determine their susceptibility to measles.

lem with one childcare center that kept poor records. Consequently, MDH could not identify who attended the center and when they attended. MDH worked for over 19 days to try to obtain a roster of attendees. Because the center was not cooperating, MDH reached out to the Minnesota Department of Human Services (DHS) which has authority to suspend a center's license<sup>16</sup> if the licenser does not follow applicable law. After DHS suspended its license, the center provided MDH with the roster of children to assist with identification and exclusion of susceptible children. The center was then allowed to reopen. Without this collaboration, the process would have taken even longer. Unfortunately, the delay in identifying susceptible individuals allowed measles to spread.

MDH also worked with the Minnesota Department of Education (MDE) because students out of school more than 15 consecutive days for medical reasons

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Minnesota Statute § 144.3351 allows certain individuals and organizations to share vaccination information without patient consent. This allowed MDH to use the Minnesota Immunization Information Connection (MIIC) to verify who was unvaccinated and susceptible to measles. This law helped MDH quickly reduce the nearly 8,500 known exposures to about 700 individuals susceptible to measles. MDH also contacted the healthcare provider, school, or childcare provider of the exposed individuals if the vaccination information was not in MIIC.

During the investigation, MDH needed to share private information with schools and childcare providers, which is not usually permitted under state law. Minnesota Statute § 13.3805 allowed the commissioner to share private health data (specifically, the disease status of an individual) to control or prevent the spread of serious disease. This data sharing was essential, not only to allow exclusion of susceptible individuals from schools and childcare, but also to prevent further spread of the disease.

These laws, however, only work when MDH knows the names of the contacts. MDH encountered a prob-

lem must receive education services.<sup>17</sup> Even though many of the unvaccinated students were excluded for less than 15 days, MDH and DHS worked together to find ways to provide support and alternative education services for the excluded students. In addition, MDH did not need to use Minnesota's isolation and quarantine law<sup>18</sup> because susceptible individuals were voluntarily excluded from schools and child care.

Working with other agencies and using a variety of laws was crucial to the public health response and containment of the 2017 Minnesota measles outbreak.

### **Outbreaks on College Campuses**

Half of all mumps outbreaks that occurred in the U.S. between January 2016 and June 2017 took place on college campuses.<sup>19</sup> This can be attributed partly to the constant close contact between college students,<sup>20</sup> especially those living in on-campus housing, and possibly also to potential waning effectiveness of the mumps vaccine.<sup>21</sup> In contrast to state law governing vaccine requirements for elementary, middle, and high school entrance, colleges and universities usually create their own policies for students in terms of vac-

cine mandates. This can vary from requiring quite a few vaccines (e.g., the University of California university system) to requiring none (e.g., University of New Mexico) before students may enroll.<sup>22</sup>

Just as vaccine requirements vary among universities, so do responses to outbreaks on university campuses. Ohio State University, following a 2014 mumps outbreak, instituted a requirement that all students (part-time or greater) must provide proof of vaccination for nine diseases, plus additional proof of vaccination for meningitis for those students living in on-campus housing.<sup>23</sup> The University of Iowa experienced a mumps outbreak in 2015.<sup>24</sup> The university had a mandatory MMR vaccination policy dating back to 2003, and a majority of infected individuals had previously received two doses of the MMR vaccine. The university worked with local and state health officials to implement a vaccination campaign and recommended that students under 25 years of age receive a third dose of MMR. The campaign included the administration of over 4,700 MMR doses through eight free vaccination clinics. Cases of mumps were lower five months following the vaccination campaign (75 cases) compared to the five months prior to the campaign (226 cases).

Universities and colleges can utilize and amend their vaccine requirement policies and work with local and state health officials to prevent or slow the spread of outbreaks.

## Conclusion

Our three case studies demonstrate that law and policy play an important role in combatting the risks posed by non-vaccinating, and while the design of legal frameworks matters, so does implementation. Legal infrastructure can give implementers tools to address non-vaccinated individuals. In universities, mandates and infrastructure affected how universities could respond to outbreaks, and the rate of vaccination generally. In California, a change in the law led to increased vaccination rates, while gaps in the law (i.e., lack of clarity in the language related to IEPs and broad discretion to doctors to give exemptions) led to some implementation challenges facing the state. In Minnesota, the lenient laws governing exemptions helped facilitate a measles outbreak, but the legal infrastructure allowing health authorities to track vaccination status quickly helped authorities contain it.

In all cases, however, the legal framework was not enough. At the university level, gaps in standards matter, as some universities require numerous vaccines and others require no vaccines for matriculation. In California, willingness of parents to pay doctors for fake exemptions and willingness of doctors to write

them, and challenges to disciplinary action by the board, mattered. In Minnesota, behavior of childcare facilities mattered. And in the two latter cases, in the background, mistrust of vaccines and anti-vaccine claims created a pool of unvaccinated children resulting in outbreaks.

Law matters, and the vaccine-related legal framework strongly affects the ability of an institution to reduce or fight disease outbreaks. But implementation also matters, and continuing to fight for confidence in vaccines is an invaluable part of the discussion.

## Note

Dorit Reiss' family owns regular stock in GSK, a vaccine manufacturer, as part of a diverse portfolio. Authors Barraza and Freeman have nothing to disclose.

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