Background:
In October 2015, New York State (NYS) passed amendments to state law requiring students entering grades seven and twelve on or after September 1, 2017 to be vaccinated against meningococcal disease in accordance with Advisory Committee on Immunization Practices recommendations. In 2015, estimated baseline 1-dose meningococcal (MenACWY) vaccine coverage among NYS adolescents aged 13 through 17 years was 86.2% (+/- 3.1%) and coverage with 2 doses and/or 1 dose on or after the sixteenth birthday among NYS 17 year olds was 35.7%.

Setting:
New York State

Population:
Estimated 231,409 students attending grade seven and 192,763 students attending grade twelve in NYS public, private and parochial schools.

Project Description:
To raise school, parent, adolescent and healthcare provider awareness of the new school requirements, the NYSDOH launched a high-reach, high-frequency multi-media campaign targeting parents of adolescents, with a secondary target of all adults aged 25-54 years. Television and radio ads aired in major media markets across NYS outside of NYC, and digital ads ran statewide. The media campaign was supplemented with educational materials, electronic notices, and presentations to schools and healthcare providers. The NYSDOH monitored MenACWY coverage in the New York State Immunization Information System throughout the months leading up to the effective date and assessed school immunization coverage in an annual school survey.

Results/Lessons Learned:
Early and open communication with the public, schools, and healthcare providers was critical to ensure smooth and timely implementation of new school requirements. Digital ads, while relatively low-cost compared to traditional media, outperformed expected benchmarks, driving the highest traffic experienced by the NYSDOH website in many years. Social media comments were largely positive, and provided useful, near real-time feedback allowing for timely modification of the communications campaign. NYS 2016-17 grade seven MenACWY coverage was 97% and grade twelve coverage was 95%.
Oral Presentation
Early feedback from a pilot of a cognitive computing system to analyze immunization data
Stacie Greby, Alexandra Bhatti, Alison Fisher, Yoonjae Kang, Cynthia Knighton, Pamela Srivastava, Sarah Ball, William Campell, Alisaon Thaung, Zoran Obradovic, Marija Stanojevic

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Background:
The goal of immunization programs is to maintain or improve vaccination coverage to prevent diseases. While quantitative and qualitative data are available to support this goal, qualitative data are not always actionable because of labor intensive analytic methods. Cognitive computing systems can address this challenge by leveraging automation for quantitative and qualitative data analysis.

Objectives:
To describe the development of a cognitive computing system to analyze immunization data.

Methods:
Text data from a variety of formal and informal sources were collected to develop a lexicon, or local language, to describe immunization programs. Formal data included program reports, legal and scientific text searches, and vaccine-related textbooks. Informal data included Sysomos searches of Twitter feeds related to immunization, (e.g., recent vaccine-preventable disease outbreaks). The data were searched with a cognitive computing system using multiple algorithms.

Results:
The formal and informal data effectively created two databases. The formal database is a sample of 64, one entry for each immunization program awardee. The informal database is a sample of over 64 million. Location information is available for up to 60% of the Twitter data, related to the user-profile, not the location of the tweet. Challenges identified by this pilot project included: data structure, classification of misinformation, and language relevance (e.g., MMR can mean measles, mumps, and rubella vaccine or Match Making Rank, a rating system used in online gaming.). Potential solutions include: sorting by type of group tweeting and retweeting the information to help identify sources of misinformation.

Conclusion:
The pilot system can quickly search formal and informal immunization data. The formal data may be helpful in identifying program activities associated with changes in vaccination coverage.
Oral Presentation

Saving grace? Exploring the impact of a four-day grace period on measles coverage in Ontario.
Jessica Wong, Andrean Bunko, Chi Yon Seo, Sarah Wilson

Background:
Under Ontario’s Immunization of School Pupils Act (ISPA), students require two doses of measles-containing vaccine (MCV) given on or after their first birthday. In contrast, some jurisdictions apply a grace period to immunization requirements. For example, the Advisory Committee on Immunization Practices considers doses administered within four days before a vaccine’s minimum age as valid.

Objectives:
Our objectives were to describe the timing of first MCV doses, and to quantify the impact of implementing a four-day grace period on measles immunization coverage in Ontario.

Methods:
Records from Ontario’s Digital Health Immunization Repository were extracted for 7–year-old students for three recent school years. We determined the proportion of students who received their first MCV dose at different age milestones and assessed measles up-to-date (UTD) coverage with and without a four-day grace period. The number of students affected and the change in coverage were calculated.

Results:
Of 434,482 students assessed, 3.2% had zero MCV doses, 91.8% received their first dose on or after their first birthday, and 5.0% received their first dose before their first birthday. A small proportion (0.6%) received doses before but within four days of their first birthday. Considering these doses to be valid resulted in an additional 1,357 children being UTD, increasing MCV coverage from 91.6% to 91.9%. Additionally, there were 1,202 students immunized within the four-day grace period who were already UTD due to receiving additional vaccines.

Conclusion:
A four-day grace period would result in a very small increase in MCV coverage. Few students were immunized within the four-day grace period and approximately half of those students were already UTD due to additional doses. Although the impact on provincial MCV coverage is small, a grace period may still be important for public health units from the perspective of resource allocation and relationship building with immunizing families.