Vaccine Preventable Diseases

Data Profile

Making the Healthy Choice the Easy Choice

A Collaborative Community Effort Led by: Olmsted County Public Health Services, Olmsted Medical Center and Mayo Clinic
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Introduction

Community Health Assessment and Planning Process

The community health assessment and planning (CHAP) process is a collaborative community effort led by Olmsted County Public Health Services, Olmsted Medical Center, Mayo Clinic Rochester and partnerships with multiple community organizations. It is a continuous, triennial cycle that assesses our community's health; prioritizes our top community health needs; and plans, implements, and monitors/evaluates strategies to improve our community's health.

About the Data Profile

This data profile provides a deeper dive into the community health improvement plan priority, vaccine preventable diseases. Data in the profile includes both quantitative and qualitative data that has been collected through various data sources to better examine not only immunization and disease rates in Olmsted County but also contributing factors (local conditions).

About the Vaccine Preventable Diseases Workgroup

The Vaccine Preventable Diseases Workgroup formed in May 2015 with representation from healthcare, public health, pharmacies, long-term care, and schools. In 2015, the workgroup developed two strategies and corresponding objectives that informed a broad work plan. The two strategies are: (1) increase immunization rates; and (2) develop innovative means to address vaccine hesitancy. In addition, the workgroup approved goals to help inform their work.

In 2016, the workgroup agreed to focus on areas of disparity in immunization rates by making this a priority in planning for 2016-2017 school-based immunization clinics.
Executive Summary

Community Health Priority: Vaccine Preventable Diseases

Community Health Importance and Impact

Vaccinations allow protection from several infectious diseases. With increased vaccination rates, some infectious diseases (small pox) or cancers (cervical cancer) can be eliminated or eradicated.

Local Conditions of Vaccine Preventable Diseases

In 2015, 86% of Olmsted County children aged 24-35 months were up-to-date on their age-appropriate Measles, Mumps and Rubella (MMR) vaccine. The Olmsted County rate is high in comparison to Minnesota, with 78.5% of children aged 24-35 months immunized. However, the Healthy People 2020 goal calls for a 90% coverage rate. The majority (96%) of Olmsted County kindergarteners were up-to-date (2013-2016).

Community Perception

Level of Threat

- Slight
- Moderate
- Significant
- Severe/Extreme

16% of prioritization participants feel immunizations is one of the top health issues impacting Olmsted County residents.

Community Dialogue Themes

- Concerns about the Vaccine
- Lack of Knowledge about Vaccine
- Sources of Information
- Health Providers’ Role

“Risk could only be one in a million but don’t want that to be my own daughter”

Health Disparities

Childhood MMR Rates

- 75% Somali
- 90% Non-Somali

“Would like non-biased and non-monetary motivated sources of information”

HPV Adolescent Immunization Rates 2013 - 2016

- Overall Completion: 58%
- 1st Dose: 54%
- All 3 Doses: 30%

“I know I can call my health care provider but not everyone has that”
Important Definitions

Vaccine Preventable Diseases
A vaccine preventable disease is an infectious disease for which an effective preventive vaccine exists.

Vaccine preventable disease levels are at or near record lows. Even though most infants and toddlers have received all recommended vaccines by age two, many under-immunized children, adolescents, and adults remain, leaving the potential for outbreaks of disease.

Diseases that used to be common in this country and around the world, including polio, measles, diphtheria, pertussis, rubella, mumps, tetanus, rotavirus and Haemophilus influenza type b (Hib), can now be prevented by vaccination. The eradication of the smallpox vaccine is a success story in vaccine preventable diseases. Smallpox, a once debilitating disease, is no longer a threat to humans due to the invention and effectiveness of a vaccine.

Vaccines and Immunity
Immunity is the body’s way of preventing disease. The immune system recognizes germs that enter the body as “foreign invaders” (called antigens) and produces proteins called antibodies to fight them. The first time a child is infected with a specific antigen (say measles virus), the immune system produces antibodies designed to fight it. Usually, the immune system can’t work fast enough to prevent the antigen from causing disease, and the child ends up sick. However, the immune system “remembers” that antigen. If it ever enters the body again, even after many years, the immune system can produce antibodies fast enough to keep it from causing disease a second time. This protection is called immunity (Center for Disease Control and Prevention).

Vaccines contain the same antigens (or parts of antigens) that cause diseases. For example, measles vaccine contains the measles virus. But the antigens in vaccines are either killed or weakened to the point that they don’t cause the disease. However, they are strong enough to make the immune system produce antibodies that lead to immunity. In other words, a vaccine is a safer substitute for a child’s first exposure to a disease. The child gets protection without having to get sick. Through vaccination, children can develop immunity without suffering from the actual diseases that vaccines prevent.

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Abbreviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hepatitis B</td>
<td>Hep B</td>
</tr>
<tr>
<td>Rotavirus</td>
<td>RV</td>
</tr>
<tr>
<td>Diphtheria, tetanus, &amp; acellular pertussis</td>
<td>DTaP</td>
</tr>
<tr>
<td>Haemophilus influenza type b</td>
<td>Hib</td>
</tr>
<tr>
<td>Pneumococcal conjugate</td>
<td>PCV13</td>
</tr>
<tr>
<td>Measles, mumps, rubella</td>
<td>MMR</td>
</tr>
<tr>
<td>Varicella</td>
<td>Var</td>
</tr>
<tr>
<td>Hepatitis A</td>
<td>Hep A</td>
</tr>
<tr>
<td>Tetanus, diphtheria, &amp; acellular pertussis1</td>
<td>Tdap</td>
</tr>
<tr>
<td>Human papillomavirus</td>
<td>HPV</td>
</tr>
<tr>
<td>Polio</td>
<td>Polio</td>
</tr>
<tr>
<td>Pneumococcal</td>
<td>Prevnar</td>
</tr>
<tr>
<td>Meningococcal</td>
<td>MCV4</td>
</tr>
</tbody>
</table>
Vaccines and Diseases

Vaccine Rates in Olmsted County

Childhood Immunizations

In 2015, 66% of children aged 24 to 35 months, in Olmsted County received the recommended immunization series, a decrease from 2011 (71%). However, this may be underestimated due to data limitations: (1) health care provider participation in the state immunization registry is voluntary, (2) the registry population may include children who have moved and (3) cross border-state immunization data exchange is limited to Wisconsin. Refer to Appendix A for a full listing of the childhood recommended immunization series.

![Olmsted County Childhood Immunization Rates, 2012-2016](chart)

Data Source: Minnesota Immunization Information Connection

School Aged Immunizations

The next checkpoint for immunizations is when children enter kindergarten. For a complete list of required immunizations please Appendix A. Overall, between 2013 and 2016, Olmsted County saw higher rates of kindergartens immunized than Minnesota. Olmsted County also saw an overall increase from childhood immunization rates to kindergarten immunizations. It is important to note the data is self-reported versus the childhood data comes from Minnesota Immunization Information Connection (MIIC).
Adolescent Immunizations

Key immunizations for adolescents include Tdap, MCV4 and HPV. Olmsted County adolescent rates are exceeding the Minnesota average for all three vaccines. According to MIIC, 83% of Olmsted County 13 to 18-year-olds received a Tdap after the age of seven. When comparing to MCV4 and HPV, Tdap has higher immunization rates. Olmsted County is exceeding the Health People 2020 goal for the Tdap immunization rate of 80%.

MCV4 vaccine includes a first dose and booster. From MIIC data, 77% of Olmsted County adolescents received the first dose and only 27% received their booster. Olmsted County is very close to meeting the Healthy People 2020 goal for the first dosage of the MCV4 vaccine (80%).

The rates are even lower for HPV vaccination rates. Only 54% of adolescents received the first dose and 30% received all three doses. Overall, Olmsted County has a 58% HPV series completion rate. Olmsted County is not meeting the Healthy People 2020 goal of 80% of females aged 13 to 15 years receiving three doses of the HPV vaccine.

According to MIIC data, Olmsted County adolescents have a missed opportunity rate of 73%. A missed opportunity is a visit date in the last 12 months when a client in the group being assessed was vaccinated and Tdap, MCV4, and/or HPV vaccines could have been given, but were not. The true rate of missed opportunities is likely higher because MIIC has no record of visits when no vaccines were given at all.
Adult Immunizations

Adult vaccines include Tdap, Td/Tdap, PCV13, PPSV23, HPV and zoster (shingles). Each one of the vaccines has its specifics on when it should be administered but all are considered adult immunizations. Olmsted County adults are higher than state averages on all of these vaccines. When comparing immunization rates between each immunization you can see there are large discrepancies between them, most notably the lower rates of the first and third dose of the HPV vaccine.

Data Source: Minnesota Immunization Information Connection
Most Common Vaccine Preventable Disease in Olmsted County

Pertussis
Olmsted County saw a variation in vaccination (DTaP and Tdap) against pertussis by age in 2016. Children receiving a DTaP immunization increased to 77% in 2016 after seeing a decline in both 2014 and 2015. In 2016, 83% of Olmsted County adolescents received a Tdap after the age of seven. When expanding the age range to adults, 78% of Olmsted County adults were up-to-date in 2016.

Data Source: Minnesota Department of Health

Pertussis occurs and naturally peaks in three to five-year cycles. Olmsted County continues to see this seasonal trend. Since 2010, Olmsted County experienced an average of 36 pertussis cases annually (19 to 237 range; 36 median).

Data Source: Minnesota Department of Health
Pertussis reached epidemic levels in Minnesota in 2012, with 4,485 cases statewide and 237 cases in Olmsted County. Case numbers had not been this high since a vaccine for pertussis was developed in the 1940s. Prior to 2012, pertussis had been increasing since the 1980s. Furthermore, the number of cases in children age seven to ten years increased more than six-fold between 2007 and 2009; that trend has continued. These increases have occurred despite high pertussis immunization rates. In Minnesota in 2012, 786 (87%) of the 905 cases age seven to ten years were fully immunized in accordance with current immunization recommendations. Minnesota’s pertussis data reflect national trends, although Minnesota and other states with strong surveillance programs have reported the highest rates.

Data Source: Minnesota Department of Health

![Pertussis: Annual Incidence Rate, 2011 - 2015](image)

Data Source: Minnesota Department of Health

![Olmsted Pertussis Cases by Age, 2011-2015](image)

Data Source: Minnesota Department of Health
Influenza

Olmsted County has a six-year (2010-2015) average of 58% of residents receiving their annual influenza vaccine. During the 2014-2015 influenza season, Olmsted County saw higher immunization rates overall than Minnesota or the United States, but is not reaching the Healthy People 2020 goal of 70%. Olmsted County was slightly lower than Minnesota for 18 and younger receiving their influenza vaccine during the 2014-2015 season.

During the 2014-2015 influenza season, the highest percentage of Olmsted County residents receiving an influenza vaccine were individuals ages 65 years and older (82.0%), followed by six months through four years (72.3%). The age group with the lowest influenza vaccine rate was 19 to 24-year-olds at 36.6%.

Data Source: Olmsted County Community Health Needs Assessment
Unlike other reportable diseases, the Minnesota Department of Health (MDH) does not request that every case of influenza or every patient who goes to the doctor with influenza symptoms be reported to MDH, however, we are still able to receive some data from MDH regarding the number of cases. Due to this limitation, case counts could be higher than being reported.

Over the last six years, Olmsted County has seen the number of influenza cases have vary greatly from year-to-year with the 2015-2016 influenza season being the lowest at 17. The six-year average for Olmsted County (2010-2016) is 67 cases per year (range: 17-151 and median: 41.5). Olmsted County women (55%) are more likely to have influenza than males (45%) when comparing case counts from 2010-2016.

From 2011-2015 Olmsted County, did not have any influenza pediatric mortalities, novel cases, or long-term care outbreaks. In 2015, Olmsted County experienced its first school outbreak in five years.

Depending on the influenza season, the age group most affected also varies in Olmsted County. For the years that had a large spike of influenza cases, Olmsted County residents 65 years and older had more reported cases than the other age groups. In influenza seasons that saw lower counts, 18 to 64 year-olds accounted for the most cases.
Another way to look at how influenza affects a community is through hospitalizations caused by influenza. Just as the case counts, there were peaks in 2012 and 2014. Additionally, the fewest hospitalizations occurred in 2015. Olmsted County averages 66 influenza hospitalizations in an influenza season, based on counts from 2010-2015.

Other Vaccine Preventable Diseases in Olmsted County

Haemophilus Influenzae

From 2011 to 2015, Olmsted County had an average of three cases of Haemophilus Influenzae. Haemophilus Influenzae type b (Hib) vaccine is part of the childhood immunization series that protects against one strain of Haemophilus Influenzae. From 2012 to 2015, Olmsted County saw consistent Hib rates, averaging at 82%, one of the lowest rates in the childhood immunization series.

Measles, Mumps, and Rubella

From 2011 to 2015, there were no cases of measles, mumps or rubella reported in Olmsted County. In 2015, 86% of Olmsted County children aged 24-35 months were up-to-date on their MMR vaccine by two years of age. The Olmsted County rate is high in comparison to Minnesota, with 78.5% of children aged 24-35 months immunized, however, the Healthy People 2020 goal calls for a 90% coverage rate. By the time, Olmsted County children reached kindergarten, 96% were up-to-date (2013-2016).

Disparities exist in MMR rates seen among Somali children. In Olmsted County, the non-Somali childhood MMR rate is about 90%; whereas the Somali childhood MMR rate is about 75%.
Varicella
Since 2013, Olmsted County had an average of nine varicella cases (6 to 12 range; 9 median). The varicella vaccine is included in the childhood immunization series. From 2012 to 2016, Olmsted County had an average of 85% of children 24-35 months who received the varicella vaccine. This increases to 96% when looking at the Olmsted County kindergarten varicella immunization rate between 2013 and 2016.

Viral (Aseptic) Meningitis
From 2011 to 2015, Olmsted County averaged 22 cases of viral meningitis. Two doses of the MCV4 vaccine are routinely recommended for adolescents 11 through 18 years old: the first dose at 11 or 12 years old, with a booster dose at age 16. From 2013 to 2016, 77% of adolescents in Olmsted County received their first dose, but only 27% received their booster of the MCV4 vaccine.

![Olmsted County Adolescent MCV4 Immunization Rates, 2013-2016](image)

Data Source: Minnesota Immunization Information Connection (MIIC)

Local Conditions: Access

Health Insurance
From the most recent Minnesota Health Access Survey data (2015), 94.3% of Olmsted County residents and 95% of Minnesota residents have health insurance coverage. At a national level, 88.3% of United States residents have health insurance.

Individuals with lower household incomes, those with high health care expenditures, and those unable or unwilling to apply for public health care assistance appear to have lower rates of insurance.

In 2014, at a national level, non-Hispanic whites had a higher rate of health insurance coverage at 92.4%. Hispanics had the lowest rate of health insurance coverage at 80.1%. Local data shows that those who have attended college are two times more likely to have insurance coverage than those who have not attended college.

According to local data, insurance coverage health disparities exist among certain subpopulations throughout Olmsted County. Those individuals with any college; individuals reporting good, very good or excellent health status; non-retired
individuals; and households with an annual income above $35,000 were more likely to have both dental and prescription insurance coverage.

**Youth Routine Physical Exam**

According to the 2016 Minnesota Student Survey, 66% of youth and adolescents saw a doctor or nurse for a check-up or physical exam in the last year. When looking at race/ethnicity, age and gender there are no differences between groups.

![Graph: Last Check-Up or Physical Exam, Olmsted County, 2016](image)

*Data Source: Minnesota Student Survey*

**School Located Immunization Program**

Since 2009, Olmsted County Public Health Services, Mayo Clinic, and Olmsted Medical Center have partnered with school districts in Olmsted County to offer influenza immunizations at schools. Each year has seen increased participation in the number of schools. In 2015, all Olmsted County public elementary and middle schools and all private and parochial elementary schools participated. In general, 2015 saw a drop due to adding smaller schools that have a lower participation rate, last season’s poor vaccine match, and nasal shortage.

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Schools</th>
<th>#doses given</th>
<th>% students vaccinated</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>2</td>
<td>286</td>
<td>33%</td>
</tr>
<tr>
<td>2010</td>
<td>6</td>
<td>786</td>
<td>28%</td>
</tr>
<tr>
<td>2011</td>
<td>7</td>
<td>251</td>
<td>29%</td>
</tr>
<tr>
<td>2012</td>
<td>30</td>
<td>3158</td>
<td>25%</td>
</tr>
<tr>
<td>2013</td>
<td>31</td>
<td>4305</td>
<td>34%</td>
</tr>
<tr>
<td>2014</td>
<td>36</td>
<td>6056</td>
<td>39%</td>
</tr>
<tr>
<td>2015</td>
<td>47</td>
<td>5340</td>
<td>33%</td>
</tr>
</tbody>
</table>

*Data Source: SLIP Coordinator Presentation to SEMIC*
In the fourth quarter of 2016, an environmental scan was completed of locations that offer the most common immunizations. This scan used CDC’s website: Vaccine Finder (https://www.vaccines.gov/getting/where/) and provider websites to confirm. In Olmsted County, there are a total of 39 immunization providers. The majority are pharmacies (24) versus the clinical setting (15). Additionally, most of the providers in Olmsted County are located in Rochester (34). The most common vaccine provided was influenza (39 locations) followed by Tdap (35 locations).

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Total # Locations Offering Immunization</th>
<th>Locations in Rochester</th>
<th>Locations in Greater Olmsted County</th>
<th>Clinic</th>
<th>Pharmacy/Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Influenza</td>
<td>39</td>
<td>34</td>
<td>5</td>
<td>16</td>
<td>23</td>
</tr>
<tr>
<td>Tdap</td>
<td>35</td>
<td>32</td>
<td>3</td>
<td>16</td>
<td>19</td>
</tr>
<tr>
<td>Shingles</td>
<td>29</td>
<td>26</td>
<td>3</td>
<td>10</td>
<td>19</td>
</tr>
<tr>
<td>Meningococcal</td>
<td>29</td>
<td>26</td>
<td>3</td>
<td>16</td>
<td>13</td>
</tr>
<tr>
<td>Pneumococcal</td>
<td>29</td>
<td>26</td>
<td>3</td>
<td>13</td>
<td>16</td>
</tr>
<tr>
<td>Hepatitis A</td>
<td>27</td>
<td>24</td>
<td>3</td>
<td>13</td>
<td>14</td>
</tr>
<tr>
<td>Hepatitis B</td>
<td>27</td>
<td>24</td>
<td>3</td>
<td>13</td>
<td>14</td>
</tr>
<tr>
<td>TD</td>
<td>25</td>
<td>22</td>
<td>3</td>
<td>12</td>
<td>13</td>
</tr>
<tr>
<td>HPV</td>
<td>23</td>
<td>20</td>
<td>3</td>
<td>13</td>
<td>10</td>
</tr>
<tr>
<td>MMR</td>
<td>22</td>
<td>19</td>
<td>3</td>
<td>10</td>
<td>12</td>
</tr>
<tr>
<td>Varicella</td>
<td>20</td>
<td>17</td>
<td>3</td>
<td>11</td>
<td>9</td>
</tr>
</tbody>
</table>

Data Source: Environmental Scan
Local Conditions: Vaccine Hesitation

Immunization Exemptions
In Olmsted County, immunization exemption rates remain very low overall. For the 2015-2016 school year, kindergarten exemption to all vaccines was 1% and seventh grade exemption from all vaccines was 0.3%. When comparing the 2013-2014 school year to the 2015-2016 school year for most vaccines there was a decrease in exemptions for every vaccine except for Hepatitis B in kindergarteners. Overall medical exemptions for Olmsted County are at 0% for both kindergarteners and seventh graders.

Conscientious Objector Rates in Olmsted County

<table>
<thead>
<tr>
<th></th>
<th>Kindergarten</th>
<th>7th Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>DTaP</td>
<td>1.65%</td>
<td>1.33%</td>
</tr>
<tr>
<td>Polio</td>
<td>1.60%</td>
<td>1.48%</td>
</tr>
<tr>
<td>MMR</td>
<td>1.79%</td>
<td>1.58%</td>
</tr>
<tr>
<td>Hep B</td>
<td>1.15%</td>
<td>1.58%</td>
</tr>
<tr>
<td>Varicella</td>
<td>1.74%</td>
<td>1.82%</td>
</tr>
<tr>
<td>Tdap</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Data Source: Minnesota Department of Health School Immunization Data
Vaccine Efficacy and Safety
The Community Dialogues provided an opportunity to concerns and questions from parents about the HPV vaccine. Many parents expressed concern over the relatively newness of the vaccine, lack of really knowing how effective the vaccine is and what it is truly preventing.

Concerns about the Vaccine

- Vaccine is still relatively new, especially for boys
- Don’t know if it is safe or how effective it is

“it is so new, we can’t see the impact on a generation who was vaccinated”

“I agree for standard immunizations, not sure with newer ones, where there is less information. I am always sure time will tell, I trust the old ones”

“Risk could only be one in a million but don’t want that to be my own daughter”

Lack of Knowledge about the Vaccine

- Majority of participants did not know what the vaccine prevents
- Didn’t know why boys need to get it
- Questioned why the vaccine needed to be administered at a certain age

“I know nothing about the effectiveness. I am not too worried about side effects, I don’t think my kids are going to get autism, let’s clear that up but I don’t know if it works”

“I haven’t heard a lot, which is why I came. I was surprised how they start these immunizations (I think 8 or 9, up till teens). Doctor didn’t explain and I didn’t ask”

Data Source: Community Dialogue

Providers Role in Promoting Vaccines

One of the common themes from the community dialogues was that if providers took the time to talk with parents about the vaccines and answered the questions instead of dismissing them, they would be more likely to vaccinate their children. Participants also noted that information coming directly from the provider versus a pharmaceutical handout is preferable and that they would be more likely to vaccinate their child.

“Don’t trust pharmaceutical pamphlets, maybe advertising, not facts”

“Doctor wasn’t helpful, made me feel dumb... of course she (daughter) should get it (vaccine)”

Local Conditions: Community Context

Community’s Perception

During the 2016 community health needs assessment prioritization process, community members were asked to rate the community’s perception of immunizations and the community’s ability to impact. Overall, the community perceived immunizations to be a significant threat/issue and they felt the community has an extreme ability to impact. Additionally, 16% of the prioritization participants felt immunizations is one of the top health issues impacting Olmsted County residents.
State Immunization Requirements for Schools

Below is a table for the requirements for Minnesota students to attend school.

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Grade</th>
<th>Doses</th>
<th>Details</th>
<th>Effective Date</th>
<th>Additional Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>DTaP-Diphtheria, Tetanus, acellular Pertussis</td>
<td>Childcare</td>
<td>5</td>
<td>Age appropriate dosing before age 15 months; dose 4 ages 15 months-4 years; dose 5 after age 4 years</td>
<td>PRIOR to 2008-09</td>
<td></td>
</tr>
<tr>
<td>DTaP-Diphtheria, Tetanus, acellular Pertussis</td>
<td>Kindergarten</td>
<td>4-5</td>
<td>Final dose after age 4 years</td>
<td>PRIOR to 2008-09</td>
<td></td>
</tr>
<tr>
<td>Flu-Influenza (seasonal)</td>
<td>Childcare</td>
<td>0</td>
<td>No state requirement</td>
<td></td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flu-Influenza (seasonal)</td>
<td>Kindergarten</td>
<td>0</td>
<td>No state requirement</td>
<td></td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flu-Influenza (seasonal)</td>
<td>Middle School</td>
<td>0</td>
<td>No state requirement</td>
<td></td>
<td>Not applicable</td>
</tr>
<tr>
<td>Hep A-Hepatitis A</td>
<td>Childcare</td>
<td>0</td>
<td>No state requirement</td>
<td></td>
<td>Not applicable</td>
</tr>
<tr>
<td>Hep A-Hepatitis A</td>
<td>Kindergarten</td>
<td>0</td>
<td>No state requirement</td>
<td></td>
<td>Not applicable</td>
</tr>
<tr>
<td>Hep B-Hepatitis B</td>
<td>Childcare</td>
<td>0</td>
<td>No state requirement</td>
<td></td>
<td>Not applicable</td>
</tr>
<tr>
<td>Hep B-Hepatitis B</td>
<td>Kindergarten</td>
<td>3</td>
<td>Age appropriate dosing</td>
<td>PRIOR to 2008-09</td>
<td></td>
</tr>
<tr>
<td>Hep B-Hepatitis B</td>
<td>Middle School</td>
<td>3</td>
<td>Grade 7</td>
<td>PRIOR to 2008-09</td>
<td></td>
</tr>
<tr>
<td>Hep B-Hepatitis B</td>
<td>University/College</td>
<td>0</td>
<td>No State mandates or requirements, check with individual institutions for specific requirements</td>
<td>Not applicable</td>
<td></td>
</tr>
<tr>
<td>Hib-Haemophilus Influenzae Type B</td>
<td>Childcare</td>
<td>1</td>
<td>History of 1 dose after age 1 year</td>
<td>PRIOR to 2008-09</td>
<td></td>
</tr>
<tr>
<td>HPV-Human Papillomavirus</td>
<td>Middle School</td>
<td>0</td>
<td>No state requirement</td>
<td></td>
<td>Not applicable</td>
</tr>
<tr>
<td>HPV-Human Papillomavirus</td>
<td>University/College</td>
<td>0</td>
<td>No State mandates or requirements, check with individual institutions for specific requirements</td>
<td>Not applicable</td>
<td></td>
</tr>
<tr>
<td>MCV4-Meningococcal Conjugate Vaccine</td>
<td>Middle School</td>
<td>0</td>
<td>No state requirement</td>
<td></td>
<td>Not applicable</td>
</tr>
<tr>
<td>MCV4-Meningococcal Conjugate Vaccine</td>
<td>University/College</td>
<td>0</td>
<td>No State mandates or requirements, check with individual institutions for specific requirements</td>
<td>Not applicable</td>
<td></td>
</tr>
<tr>
<td>MMR-Measles, Mumps, Rubella</td>
<td>Childcare</td>
<td>1</td>
<td>After age 1 year</td>
<td>PRIOR to 2008-09</td>
<td></td>
</tr>
<tr>
<td>MMR-Measles, Mumps, Rubella</td>
<td>Kindergarten</td>
<td>2</td>
<td>After age 1 year</td>
<td>PRIOR to 2008-09</td>
<td></td>
</tr>
<tr>
<td>MMR-Measles, Mumps, Rubella</td>
<td>Middle School</td>
<td>0</td>
<td>Grade 7-2 doses measles required</td>
<td>PRIOR to 2008-09</td>
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<tr>
<td>MMR-Measles, Mumps, Rubella</td>
<td>University/College</td>
<td>2</td>
<td>Not applicable</td>
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<td></td>
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<tr>
<td>PCV-Pneumococcal Conjugate Vaccine</td>
<td>Childcare</td>
<td>4</td>
<td>Age appropriate dosing ages 2-24 months</td>
<td>PRIOR to 2008-09</td>
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</tr>
<tr>
<td>Polio</td>
<td>Childcare</td>
<td>3-4</td>
<td>Age appropriate dosing under age 15 months; dose 3 ages 15 months-4 years; dose 4 after age 4 years</td>
<td>PRIOR to 2008-09</td>
<td></td>
</tr>
<tr>
<td>Polio</td>
<td>Kindergarten</td>
<td>3-4</td>
<td>Final dose after age 4 years</td>
<td>PRIOR to 2008-09</td>
<td></td>
</tr>
<tr>
<td>TDaP-Tetanus, diphtheria, acellular pertussis</td>
<td>Middle School</td>
<td>1</td>
<td>1 dose Ti acceptable</td>
<td>PRIOR to 2008-09</td>
<td></td>
</tr>
<tr>
<td>TDaP-Tetanus, diphtheria, acellular pertussis</td>
<td>University/College</td>
<td>1</td>
<td>1 dose Ti acceptable</td>
<td>PRIOR to 2008-09</td>
<td></td>
</tr>
<tr>
<td>VAR-Vaccinia</td>
<td>Childcare</td>
<td>1</td>
<td>At or after age 18 months or documented disease history</td>
<td>PRIOR to 2008-09</td>
<td></td>
</tr>
<tr>
<td>VAR-Vaccinia</td>
<td>Kindergarten</td>
<td>2</td>
<td>Documented disease history acceptable</td>
<td>2010-2011</td>
<td>2nd dose added 2010</td>
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<tr>
<td>VAR-Vaccinia</td>
<td>Middle School</td>
<td>2</td>
<td>Grade 7 only or documented disease history</td>
<td>2010-2011</td>
<td>2nd dose added 2010</td>
</tr>
<tr>
<td>VAR-Vaccinia</td>
<td>University/College</td>
<td>0</td>
<td>No State mandates or requirements, check with individual institutions for specific requirements</td>
<td>Not applicable</td>
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</table>

Data Source: CDC
## Assets and Gaps in Our Community

<table>
<thead>
<tr>
<th>Contextual</th>
<th>Primary</th>
<th>Secondary</th>
<th>Tertiary</th>
</tr>
</thead>
<tbody>
<tr>
<td>- PSA’s</td>
<td>- School policies</td>
<td>- Healthcare community</td>
<td>- Individual</td>
</tr>
<tr>
<td>- Commercials</td>
<td>- Work policies</td>
<td>- Vaccine guidelines</td>
<td>- Interpersonal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Strong research base</td>
<td>- Organizational</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Somali Health Care Advisory Committee</td>
<td>- Community</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- SEMIC</td>
<td>- Public Policy</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- MIIC</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Rochester Epidemiology Project</td>
<td></td>
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<td></td>
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</tr>
</tbody>
</table>

There are three gap areas identified in our community: quality of data, accessing data and actual data entry. Quality of data gaps involve lack of standards for data entry, the accuracy of data being entered (given the complexities of the immunization schedules), multiple entities providing the data, multiple documentation systems for data entry, and client’s/patients desire to allow data to be shared. Accessing data gaps relates to barriers to accessing data, the location of data storage, and method for accessing the data. With actual data entry, the time frame between immunization administration and data entry varies.
Community Dialogue Summary

Olmsted County
Community Health Assessment and Planning Process
Community Dialogues
October 2017

**Purpose**
- Identify CHIP priorities:
  - Overweight/Obesity
  - Motor Vehicle Injury Prevention
  - Vaccine Preventable Diseases
  - Mental Health
  - Financial Stress

**Scope**
- Learn why community feels the priority is an issue/problem
- Allow discussion around key data points
- Identify action steps community would like to see

**Key Principles**
- Participants are experts in their own experience
- Non-bias → non-leading questions
- Be mindful of who we are talking to and who we aren’t
- Let the group steer the conversation
- Avoid assumptions

**2017 Timeline**
- April: Steering Committee Formed
- May: Dialogue populations identified, questions developed
- June: Questions finalized, participants identified, recruitment
- July: Community Dialogues held
- August: Community Dialogues held
- September: Community Dialogues report created
- October: Results shared, Community Dialogue information input into Data Needs

**CHIP Priority**
- Overweight/Obesity
  - Healthy eating in the Somali, Hispanic/Latino and African American communities
- Motor Vehicle Injury Prevention
  - Teen distracted driving
  - Senior drivers - threshold for saying “I shouldn’t drive anymore” - probing on different restrictions and stigma with not driving anymore
- Vaccine Preventable Diseases
  - MMR vaccination rates in the Somali community
  - HPV vaccination rates
- Mental Health
  - Neighborhood focus on stigma, resiliency and potential strategies
- Financial Stress
  - Gaining a better understanding of current strategies addressing affordable housing and childcare

**Next Steps**
- Provide summaries to participants
- Bring participants together to discuss results
- Share results with workgroup leads, data subgroup & core group
- Integrate data into data profiles
- Assist with strategy selection
- Post on OCPHS website

**Lessons Learned**
- Recruitment needs to be expanded
- More involvement of the CHIP workgroups
- Expand timeline (not during summer)

**Steering Committee**
Coordinated by Community Health Integration Specialist
Membership:
- United Way of Olmsted County
- Olmsted County Public Health Services
- Center for Population Health, Mayo Clinic
- Diversity Council
- Olmsted Medical Center
- CHIP Data Subgroup
Olmsted County
Community Health Assessment and Planning Process
Community Dialogues
Human Papillomavirus (HPV) Vaccination
2017

Themes

- Concerns about the Vaccine
- Lack of Knowledge About the Vaccine
- Sources of Information
- Health Providers’ Role

What is a Healthy Community?

Services that are accessible to all
Enough resources to meet the needs of the community
Definitely a part, mental health care access - don’t believe everyone has equal access to health care

“On the basic level, if we have a high level of immunizations, we have less risk of disease coming back that we thought are over with”

Concerns about the Vaccine

- Vaccine is still relatively new, especially for boys
- Don’t know if it is safe or how effective it is

“It is so new, we can’t see the impact on a generation who was vaccinated”

“I agree for standard immunizations, not sure with newer ones, where there is less information. I am always sure time will tell, I trust the old ones”

“Risk could only be one in a million but don’t want that to be my own daughter”
Lack of Knowledge about the Vaccine

- Majority of participants did not know what the vaccine prevents
- Didn’t know why boys need to get it
- Questioned why the vaccine needed to be administered at a certain age

“I know nothing about the effectiveness. I am not too worried about side effects, I don’t think my kids are going to get autism, let’s clear that up but I don’t know if it works”

“I haven’t heard a lot, which is why I came. I was surprised how they start these immunizations (I think 8 or 9, up till teens). Doctor didn’t explain and I didn’t ask”

Sources of Information

- Scare tactics don’t work
- Questioned resources that come from pharmaceutical companies
- Majority trust their doctor’s opinion and felt it is the best source of information

“Doesn’t respond to scare tactics, like TV ads shaming or given lots of info in paper, wouldn’t work for my family”

“Don’t trust pharmaceutical pamphlets, maybe advertising, not facts”

“Want information and facts so I can decide”

“Non-biased and non-monetary motivated”

Health Providers’ Role

- Would like to have more conversations with health care provider
- Health care providers need to be more receptive to questions and concerns
- Having a trusted health care provider or trusting relationship is crucial
- Instead of talking about vaccine they get paper handouts/ don’t read

“Doctor wasn’t helpful, made me feel dumb... of course she (daughter) should get it (vaccine)”

“I know I can call my health care provider but not everyone has that”

Strategies Identified

Education

“Women haven’t been educated on HPV, we don’t understand the risk, we don’t even know what a pap smear is for”

Dedicated time with health care provider to discuss vaccines
### Appendix A: Vaccination Schedules

#### 2017 Recommended Immunizations for Children from Birth Through 6 Years Old

<table>
<thead>
<tr>
<th>Age Range</th>
<th>Vaccines</th>
</tr>
</thead>
<tbody>
<tr>
<td>Birth</td>
<td>HepB</td>
</tr>
<tr>
<td>1 month</td>
<td>RV</td>
</tr>
<tr>
<td>2 months</td>
<td>RV</td>
</tr>
<tr>
<td>4 months</td>
<td>RV</td>
</tr>
<tr>
<td>6 months</td>
<td>RV</td>
</tr>
<tr>
<td>12 months</td>
<td>DTaP</td>
</tr>
<tr>
<td>15 months</td>
<td>DTaP</td>
</tr>
<tr>
<td>18 months</td>
<td>Hib</td>
</tr>
<tr>
<td>19–23 months</td>
<td>PCV</td>
</tr>
<tr>
<td>2–3 years</td>
<td>PCV</td>
</tr>
<tr>
<td>4–6 years</td>
<td>IPV</td>
</tr>
<tr>
<td></td>
<td>MMR</td>
</tr>
<tr>
<td></td>
<td>Varicella</td>
</tr>
<tr>
<td></td>
<td>HepA</td>
</tr>
</tbody>
</table>

*NOTE:*
If your child misses a shot, you don’t need to start over, just go back to your child’s doctor for the next shot.

*FOOTNOTES:*
1. Two doses given at least four weeks apart are recommended for children aged 6 months through 8 years of age who are getting an influenza (flu) vaccine for the first time and for some other children in this age group.
2. Two doses of HepA vaccine are needed for lasting protection. The first dose of HepA vaccine should be given between 12 months and 23 months of age. The second dose should be given 6 to 18 months later. HepA vaccination may be given to any child 12 months and older to protect against HepA. Children and adolescents who did not receive the HepA vaccine and are at high-risk, should be vaccinated against HepA.
3. Influenza (Yearly)*
4. MMR
5. Varicella
6. HepA

For more information, call toll free 1-800-CDC-INFO (1-800-232-4636) or visit www.cdc.gov/vaccines/parents

[Back page for more information on vaccine-preventable diseases and the vaccines that prevent them]
### 2017 Recommended Immunizations for Children 7-18 Years Old

Talk to your child’s doctor or nurse about the vaccines recommended for their age.

<table>
<thead>
<tr>
<th>Age Range</th>
<th>Flu (Influenza)</th>
<th>Tdap (Tetanus, diphtheria, pertussis)</th>
<th>HPV (Human papillomavirus)</th>
<th>Meningococcal (MenACWY, MenB)</th>
<th>Pneumococcal</th>
<th>Hepatitis B</th>
<th>Hepatitis A</th>
<th>Inactivated Polio</th>
<th>MMR (Measles, mumps, rubella)</th>
<th>Chickenpox (Varicella)</th>
</tr>
</thead>
<tbody>
<tr>
<td>7-8 Years</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>9-10 Years</td>
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<td>11-12 Years</td>
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<td>16-18 Years</td>
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</tbody>
</table>

### More Information:
- Preteens and teens should get a flu vaccine every year.
- Preteens and teens should get one shot of Tdap at age 11 or 12 years.
- All 11-12 year olds should get a 2-shot series of HPV vaccine at least 6 months apart. A 3-shot series is needed for those with weakened immune systems and those age 15 or older.
- All 11-12 year olds should get a single shot of a quadrivalent meningococcal conjugate vaccine (MenACWY). A booster shot is recommended at age 16.
- Teens, 16-18 years old, may be vaccinated with a MenB vaccine.

### Notes:
- Green shaded boxes indicate when the vaccine is recommended for all children unless your doctor tells you that your child cannot safely receive the vaccine.
- Orange shaded boxes indicate the vaccine should be given if a child is catching-up on missed vaccines.
- Purple shaded boxes indicate the vaccine is recommended for children with certain health or lifestyle conditions that put them at an increased risk for serious diseases. See vaccine-specific recommendations at www.cdc.gov/vaccines/pubs/ACIP-list.htm.
- Blue shaded box indicates the vaccine is recommended for children not at increased risk but who wish to get the vaccine after speaking to a provider.

### Sources:
- U.S. Department of Health and Human Services
- Centers for Disease Control and Prevention
- American Academy of Pediatrics
- American Academy of Family Physicians
### 2017 Recommended Immunizations for Adults: By Age

**If you are this age, talk to your healthcare professional about these vaccines**

<table>
<thead>
<tr>
<th>Age</th>
<th>Flu, Influenza</th>
<th>Td/Tdap, Tetanus, diphtheria, pertussis</th>
<th>Shingles, Zoster</th>
<th>Pneumococcal</th>
<th>Meningococcal</th>
<th>MMR, Measles, mumps, rubella</th>
<th>HPV, Human papillomavirus</th>
<th>Chickenpox, Varicella</th>
<th>Hepatitis A</th>
<th>Hepatitis B</th>
<th>Hib, Haemophilus influenzae type b</th>
</tr>
</thead>
<tbody>
<tr>
<td>19 - 21 years</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>22 - 26 years</td>
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<tr>
<td>27 - 59 years</td>
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</tr>
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<td>60 - 64 years</td>
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</tr>
<tr>
<td>65+ years</td>
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<td></td>
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</tr>
</tbody>
</table>

**More Information:**
- You should get flu vaccine every year.
- You should get a TD booster every 10 years. You also need 1 dose of Tdap. Women should get a Tdap vaccine during every pregnancy to help protect the baby.
- You should get shingles vaccine even if you have had shingles before.
- You should get 1 dose of PCV13 and at least 1 dose of PPSV23 depending on your age and health condition.
- You should get this vaccine if you did not get it when you were a child.

**Recommended For You:** This vaccine is recommended for you unless your healthcare professional tells you that you do not need it or should not get it.

**May Be Recommended For You:** This vaccine is recommended for you if you have certain risk factors due to your health condition or other. Talk to your healthcare professional to see if you need this vaccine.

**If you are traveling outside the United States, you may need additional vaccines.**
- Ask your healthcare professional about which vaccines you may need at least 6 weeks before you travel.

For more information, call 1-800-CDC-INFO (1-800-232-4636) or visit www.cdc.gov/vaccines

U.S. Department of Health and Human Services
Centers for Disease Control and Prevention
Appendix B: Data Sources

- Centers for Disease Control and Prevention (CDC):
  - Behavioral Risk Factors Surveillance System (BRFSS)
  - Find It App
  - National Vital Statistics System
- Healthy People 2020 (HP 2020)
- Minnesota Immunization Information Connection (MIIC)
- Minnesota Department of Education
- Minnesota Department of Health:
  - Center for Health Statistics
  - Minnesota Public Health Data Access
  - Minnesota Student Survey
- Olmsted County Community Dialogues
- Olmsted County Community Health Needs Assessment (CHNA) 2013 and 2015 Surveys
- Olmsted County Prioritization Sessions
- Olmsted County School Based Immunization Program
- Rochester Epidemiology Project
- Rochester/Olmsted Planning Department
- SE Minnesota Immunization Connection
- United States Census Bureau:
  - American Community Survey