

Improving Adolescent Immunization Rates in Rural America:

Okanogan County- A Case in Point

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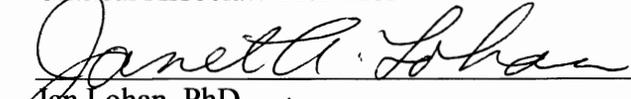
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To the Faculty of Washington State University:

The members of the Committee appointed to examine the non-thesis paper of
Lauri Jones find it satisfactory and recommend that it be accepted.



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Abstract

Immunizations are one of the greatest achievements in medicine. Before availability of vaccines, thousands of children and adults died each year in the United States from diseases. With the advent of modern vaccines in the 1950's millions have been spared the devastating and debilitating effects of once-common diseases such as polio. However, there is evidence that vaccine preventable diseases such as pertussis are on the rise, with over 2300 cases currently in Washington State and a large number of those cases occurring in adolescents. The author will assess adolescent immunization rates, review current literature addressing adolescent immunizations, and identify strategies for meeting Healthy People 2020 immunization goals in rural communities.

Improving Adolescent Immunization Rates in Rural America

Immunization demonstrates primary prevention at its best and is one of the most effective interventions that protect family's health. However, many vaccine-preventable diseases continue to be significant public health problems in the United States despite wide availability of safe and effective vaccines (Centers for Disease Control, 2011). Ever-changing immunization schedules and the introduction of new vaccines such as Human Papillomavirus Vaccine (HPV), make it difficult for parents and providers alike to keep up to date (Kimmel, 2009). This is particularly true in rural communities in Washington State where access to preventive care can be limited. For the purposes of this paper, the author investigated how adolescent immunization rates found in rural areas such as Okanogan County compare with Washington State and National rates for Meningococcal conjugate vaccine (MenACWY), Tetanus, diphtheria, and pertussis (Tdap), and HPV; and, what strategies facilitate rural community involvement to meet Healthy People 2020 benchmarks. In order to address these issues it is essential to understand rural geography, demographics, socioeconomic environment, resource availability, gaps in services, and current rates of adolescent immunization. A review of current literature can guide strategies to address improving adolescent immunization rates for MenACWY, Tdap, and HPV in rural communities like that found in Okanogan County, in north central Washington State.

Definition of Rural

There are many definitions for what constitutes a rural area. Three government agency definitions are widely used: the U.S. Census Bureau, the Office of Management and Budget (OMB), and the U.S. Department of Agriculture (USDA) (Rural, 2012). As the demographics of the U.S. are continually changing, organizations strive for more precise definitions to fit new

programs (2012). State and Federal agencies, researchers, and policy makers apply different definitions for various purposes. The U. S. Census Bureau (2010) defines rural as, “all territory, population, and housing units located outside of urbanized areas and urban clusters.” This simple definition does not adequately describe the diversity and challenges that come with living in a rural setting such as that of Okanogan County. The OMB definition of rural is similar to the U. S. Census Bureau, using a classification system of metropolitan and non-metropolitan to define rural and urban (USDA, 2012). The Economic Research Service of the USDA uses data sets containing nine representative indicators demonstrating the differences between rural and urban areas in an effort to define (2012). The National Healthcare Disparities Report (NHDR) describes disparities that rural residents face to include: limited access to health care, shortage of health care providers, shortage of mental health care, limited social services, geographic isolation, and poverty (NHDR, 2011). For the purposes of this project the U. S. Census Bureau definition will be used. Thus, Okanogan County is a good example of fitting all definitions of rural.

Geography and Demographics

Okanogan County is located in north central Washington. According to the U.S. Census Bureau (2010), Okanogan County has a population of just over 41,000. It is the largest county in Washington State covering 5,268 square miles, making it larger than the states of Delaware (2,489 sq. miles) and Rhode Island (1,545 sq. miles) combined. The total land area is 3.4 million acres. Only 30% of the land within the county is private owned; the remainder is either state or federal land. The population density is 7.5 people per square mile. Okanogan County shares borders with two sovereign nations; Canada (~ 92 miles to the north) and the Colville Confederated Tribes (700,000 acres) (Waterstrat, 2007). It is located directly north of Chelan

and Douglas Counties and extends to the Canadian border. The western border runs along the eastern crest of the Cascade Mountains. On the eastern border is Ferry County. The population of Okanogan County is 74% White, 14% Hispanic, and 11% Native American community members. On average, 503 births, 369 deaths, 258 marriages, and 108 divorces occur annually (Waterstrat, 2007). The number of adolescents, ages 13-17 is approximately 5,500 (U.S. Census Bureau, 2010). There are specific remote areas of Okanogan County where residents choose to isolate themselves and want to be “left alone”. They are fairly self-sufficient and clearly mark their property with “No Trespassing” signs. Thus, in many ways, Okanogan County reflects similar demographic characteristics as those found in many rural communities throughout the United States.

Socioeconomics

Okanogan County is one of the poorest rural counties in Washington State. Per capita income is just over \$19,000 compared to the state average of \$29,000 annually. Mean household income is \$38,000 as compared with the state average which is over \$56,000 annually. Over 18% of county residents live below the poverty level (2010). Over 60% of its residents live in unincorporated areas. Agriculture and forestry are the major revenue generators for the county and are the economic foundation for the region, which employs approximately 5,800 people. The unemployment rate jumped to 12.4% in January 2011, but as of April 2012 is 10.6% (WA State ESD, 2012).

Okanogan County ranks 5th among Washington state counties with respect to the percent of the population receiving assistance from the Department of Social and Health Services (DSHS, 2011). Over 60% of the births in Okanogan County are reimbursed by Medicaid; and

over 38% of the county's births are to mothers with less than a 12 year education (U.S. Census Bureau, 2000). Over 23% of the county's residents have no high school diploma (Waterstrat, 2007). As with demographic characteristics, Okanogan County reflects similar socioeconomic characteristics as those found in many rural communities throughout the United States. The challenges of rural disparities due to socioeconomic factors such as lack of education, geographic isolation, and limited access to preventive health care can be difficult obstacles to overcome.

Adolescent Immunization Rates

National Adolescent Immunization Rates

Since 2006, the Centers for Disease Control (CDC), has conducted the National Immunization Survey-Teen (NIS-Teen). Parents and caregivers of approximately 19,000 teen's ages 13-17 years are surveyed in random telephone calls. Telephone survey data is verified with health care providers. Survey data estimates the proportion of teens who have received three recommended adolescent vaccines: Tdap, which protects against tetanus, diphtheria, and pertussis; MenACWY, which protects against meningococcal meningitis; and HPV, which protects against human papillomavirus infections that can lead to cervical cancer (MMWR, 2011). According to the most recent data from the vaccination coverage estimates, CDC analyzed 2010 NIS-Teen data and compared results with 2009 NIS-Teen estimates. Results show that coverage increased for all three of the routinely administered adolescent vaccines: Tdap from 55.6% to 68.7%, MenACWY from 53.6% to 62.7%, (among females) ≥ 1 dose of HPV from 44.3% to 48.7%, and ≥ 3 doses of HPV from 26.7% to 32.0% (2011). National aggregate exemption rate data is difficult to obtain because of inconsistent reporting by schools in each state and differences from state to state on exemption allowances (2011).

Washington State Adolescent Immunization Rates

Current 2010 data from the NIS-Teen for Washington state showed coverage of >65% for ≥ 1 dose of all three vaccines (Tdap, MenACWY, and HPV) (2011). The 2010 immunization rates are much improved from the 2009 NIS-Teen for Washington State. Comparisons of coverage in 2009 to 2010 are as follows: Tdap from 60% to 70.6%, MenACWY from 55.8% to 67.6%, and HPV from 60% to 69.3% (2011).

Statewide school immunization exemption rates for the 2010-2011 school years were 5.8% for Washington (DOH, 2011). Washington has allowed three types of exemptions: medical, personal, and religious. Medical exemptions are determined by a health care provider. Personal exemptions are typically non-religious beliefs held by parents who do not want their child immunized. Religious exemptions are allowed when immunization conflicts with parents' religious beliefs. In Washington a new exemption bill took effect July 22, 2011 which requires a licensed health care provider signature on the Certificate of Exemption in order for parents to send their child to school or child care unimmunized (DOH, 2012).

Okanogan County Adolescent Immunization Rates

Okanogan County immunization data for 2009 is as follows: Tdap 57%, MenACWY 46%, HPV 32.7% (Child Profile, 2011). These rates demonstrate significantly lower rates than both national and state averages for all three adolescent immunizations. Refer to Table 1.1 for a comparison of national, Washington State, and Okanogan County adolescent immunization rates. Student immunization exemption rates for Okanogan County were 8.8% in 2010, 3% higher than Washington State rates (2011).

Resource Availability in Okanogan County

Because Okanogan County is a large geographic area, its resources are not concentrated in one area but rather spread out. Okanogan County has three critical access hospitals. Three Rivers District Hospital is located in Brewster, Washington at the south end of the county. Mid-Valley Hospital is in Omak, Washington, and as its name suggests is in the middle of the county. It is approximately 30 miles north of Brewster. North Valley Hospital is located in Tonasket, Washington, approximately 30 miles north of Omak.

There are 15 medical clinics. Two are Indian Health Service clinics on the Colville reservation. Two others are located in the Methow Valley in towns of Twisp and Winthrop. These two clinics are approximately 45 miles from either Okanogan-Douglas Hospital or Mid-Valley Hospital. All 15 clinics are participants in the Vaccine for Children (VFC) program through Washington State Department of Health (DOH, 2011).

For nearly 20 years, Washington State has maintained a universal childhood vaccine program, providing vaccines to all children less than 19 years regardless of income. This program is funded through state and federal dollars. No child in the state can be denied state-supplied vaccine, nor can they be charged for state-supplied vaccine (2011). However, providers are allowed to charge a fee for the administration of the vaccine.

Okanogan County has 8 school districts: Oroville, Tonasket, Omak, Nespelem, Methow, Okanogan, Brewster, and Pateros (OSPI, 2011). Each school district has one school nurse. The largest school district, Omak has over 1,500 students (OSD, 2011). Athletics are an important activity for middle and high school students in Okanogan County. One-half of the adolescents that attend county schools participate in after-school activities such as sports (OCPH, 2010).

There are five newspapers serving specific areas of the county and each is only printed weekly. These are: Methow Valley News, serving the Twisp/Winthrop area, Quad City Herald, serving Brewster, Bridgeport (Douglas County), and Pateros, Gazette-Tribune, serving Tonasket/Oroville area, the Omak Chronicle, serving Omak/Okanogan, and the Colville Tribal Tribune, serving the Colville Reservation. North Cascades Broadcasting Incorporated owns three licensed radio programs: KNCW, an FM station which plays country music; KOMW, an AM station; and B-104.3, an FM station which plays contemporary music. These newspapers and radio stations are important sources of local news, Spanish programming, and public service announcements in Okanogan County.

Gaps in Service

While it would appear that Okanogan County had a fairly distributed medical community, there are no school-based health clinics. With each school district having only one school nurse, it is not uncommon to see a nurse to student ratio of 1:1,500. Further, as in many counties that have experienced progressively declining budgets, there are no public health nurses who do immunizations at schools.

There is one Federally Qualified Health Clinic (FQHC) with two satellite clinics in Okanogan County which provides care to low-income, uninsured, and underserved populations. Outreach services to remote areas of the county are limited. The FQHC clinic and its two satellites have associated dental clinics that provide dental services to the majority of the county's Medicaid eligible population.

Healthy People 2020

“Healthy People” is a national health promotion and disease prevention initiative which provides a framework for public health prevention priorities and actions (HHS, 2011). It provides benchmarks for measuring improvements of the overall health of the U.S. population. One of the Healthy People 2020 indicators addresses “Immunization and Infectious Diseases”; -Goal IID-11 states, “Increase routine vaccination coverage levels for adolescents”. National benchmarks for the three routine adolescent immunizations are set at 80% (2011). Over the next ten years adolescent immunization rates in Okanogan County must increase drastically in order to achieve Healthy People 2020 benchmarks. Tdap rates must increase 23%, MenACWY rates must increase 34%, and HPV rates will need to increase 47%.

Review of Literature

Systematic searches of the Cumulative Index to Nursing and Allied Health Literature (CINAHL), PubMed, the Cochrane Library, and Psych INFO databases were conducted identify peer reviewed, English language, research studies, and articles published from 2006 to 2012. Search terms such as “adolescent immunizations” and “parents OR medical providers OR health personnel OR barriers” were used to retrieve evidence based literature. The time frame chosen reflected published literature which included HPV, a vaccine first approved in the United States in 2006. Duplicate articles were removed yielding 112 publications. Research articles were excluded whose primary focus was all childhood immunizations from infancy through adolescence, those published prior to 2006, and research conducted outside of the United States. Article titles and abstracts were reviewed and those retained included key concepts in adolescent development, health promotion, and adolescent immunization including: communication, perceptions, barriers, vaccine beliefs, health care provider attitudes, benefits, challenges, and strategies. Ten articles meeting these criteria were identified and are included in this review.

The National Vaccine Advisory Committee (2008) suggested that while historically immunization interventions have been targeted to infants and children, the threat of disease to adolescent's challenges health care providers to provide and promote adolescent immunizations in a different way. The advisory group developed recommendations for adolescent immunization programs which included venues for vaccine administration and communication. They also noted that fewer adolescents access the medical system for preventive care compared to younger age groups (2008). Thus, the Committee recognized that when working to improve adolescent immunization rates, it is essential to modify traditional modalities to meet the needs of this population group in distinctly different ways.

Kaplan (2009) noted adolescents have additional issues such as rapidly changing cognitive and emotional development which can affect their receptivity to immunization. Less preventive services sought by this at risk population has resulted in fewer immunization opportunities. The author suggested that prior to 2005, adolescent immunization efforts focused on getting adolescents caught up on previously missed vaccines. With the addition of three new vaccines; Tdap, MenACWY, and HPV, came barriers to immunizing adolescents. Kaplan suggested that despite evidence based guidelines to promote adolescent health screenings many do not receive the preventive health care recommended due to inadequate or no health insurance. The author described young adolescents as concrete thinkers focused on the present. Trying to convince them they need a vaccine which will benefit them in the future such as HPV is unproductive. Kaplan noted that the middle and older adolescents are more abstract thinkers where adolescents display their independence from parents through power struggles (2009). These stages of adolescent development pose difficult challenges when working to improve adolescent immunization rates.

Several qualitative research teams have investigated attitudes towards adolescent immunizations including the perspectives of health care providers, parents, and adolescents themselves. Benin, Wu, Holmboe, Shapiro, and Anyan (2010) conducted a qualitative study of 22 mothers/grandmothers and 25 teens ages 10-14 years old. Interviews were conducted using open-ended standardized interview guides which explored concepts of vaccine risks, benefits, and what vaccines are. The authors examined degrees of understanding of younger and older adolescents. The findings suggested younger adolescents have a poor knowledge about vaccination with limited understanding of risk and benefits, whereas older adolescents are conflicted between adults making decisions for them, and adolescents taking responsibility for their own decisions. The authors concluded that enhanced communication about basic concepts, risks, and benefits of vaccinations is essential. Further, they noted that concrete and simplistic terms should be integrated into this dialogue with, both younger and older adolescents to overcome barriers to immunizations (2010).

Bartlett and Peterson (2011) examined research which measured uptake of HPV vaccine and evaluated barriers to receiving the vaccine. They identified three main barriers: provider recommendations; parents' knowledge, perceptions, and attitudes regarding HPV; and health care services such as location to obtain vaccines along with accurate vaccine information. The authors concluded that parents and guardians need more knowledge and understanding of HPV disease, health care providers must educate parents' and adolescents prior to receiving HPV vaccine, and community stakeholders must be educated as to the risk/benefit of HPV vaccine (2011).

Askelson, Campo, Lowe, Smith, Dennis, and Andsager (2010) examined the influences of mothers' intentions to vaccinate their adolescent daughters against HPV. Using Ajzen's

Theory of Planned Behavior, they measured attitudes, subjective norms, and perceived behavioral control of mothers; participants were chosen using random sampling from a rural geographic area. The authors determined that the attitudes of mothers were the strongest predictors of whether they would have their daughters vaccinated.

Adorador, McNulty, Hart, and Fitzpatrick (2011) examined low income Latino mothers' perceived barriers to immunizations and identified common barriers which include: lack of insurance, income status, language differences, and access to health care. The research team utilized a 52 item survey instrument consisting of open ended and structured question which assessed sociodemographics, vaccination history, parental beliefs, attitudes, perceptions, knowledge of vaccinations, and reasons for delaying vaccinations. They noted that mothers' perceptions of their child being fully immunized were much higher than their actual immunization status and the greatest barriers included lack of insurance, lack of transportation, affordability, and language. The authors noted implications for advanced practice nurses including dedicating time assessing barriers at the local level and recognizing their influence in helping parents to make immunization decisions through educational opportunities (2011).

Dorell, Yankey, and Strasser, (2011) were first to identify and compare the reasons parents gave for not having their adolescent immunized for Tdap, MenACWY, and HPV using data from the 2009 NIS-Teen. The authors identified that among the adolescents not vaccinated; parents reported that they did not receive a recommendation from their health care provider to receive the immunizations. Among those parents who had received the recommendation to have their adolescent immunized, the most common parental response was lack of knowledge (2011).

Humiston et al. (2009) analyzed health care provider attitudes and practices. Three focus groups of 21 primary care practitioners from New York were convened. Data gathered in these groups was subsequently validated through key informant interviews with 24 primary care practitioners throughout the United States. Three main themes were identified: buy in by parents, buy in by teens, and delivery factors such as vaccine scheduling, cost, and documentation. These factors are similar to those discussed by Bartlett and Petersen (2011) in terms of health care service delivery. The authors assert that between 2005 and 2006, the Advisory Committee on Immunization Practice (ACIP) made seven new recommendations to immunization schedules resulting in provider vaccine fatigue. The findings suggested that health care provider buy in should be optimized by sufficient reimbursement for vaccination delivery and consensus on immunization office policies and procedures. Parental buy in should be achieved through supporting school requirements for adolescent immunizations, encouraging insurance companies to minimize out of pocket expense for administration fees, and providing information to the media about vaccine preventable diseases. The authors concluded that strategies are needed to optimize vaccination delivery and that adolescent vaccination success is dependent upon buy in from multiple intertwined systems. (2009).

Schaffer et al. (2008) examined seven settings other than the medical home for potential to effectively augment adolescent immunization efforts. They established a working group of experts in the field of adolescent prevention which analyzed non-traditional health care settings including: pharmacies, obstetrics-gynecology practices, STD clinics, hospital emergency departments, family planning clinics, teen clinics, and public health department immunization clinics. The authors utilized comparative assessments of each setting which met National Vaccine Advisory Committee (NVAC) quality standards. Their comprehensive findings were

summarized in a structural matrix which evaluated what is currently known and not known about capacity and the ability of non-traditional settings to provide adolescent immunizations, as well as barriers for the provision of adolescent services in those settings. Their findings suggested that several factors should be considered when strategizing how best to provide adolescent immunization in their communities: local patterns of health care utilization and demographics of the community; availability of non-traditional health care settings in the community; ability of immunization sites to meet NVAC practice standards; volume capacity of each non-traditional site; extent of participation in immunization information systems; and whether potential non-traditional immunization sites value core mission to improve adolescent immunizations. The research suggested that non-traditional health care settings for adolescent immunization should be explored by communities which could greatly benefit local adolescent immunization efforts (2008).

Neiger et al. (2012) noted that the use of social media is expanding at a rapid rate. The use of social media sites such as Facebook, have increased from 29% in 2008 to 65% in 2011. The authors stated that 80% of health care providers who conduct online consultations use social media outlets to create or share health content. They point out that there is little research conducted on appropriate use of social media in health promotion and even less has been written about evaluating social media effectiveness. The research suggested that social media should be used to gather health promotion data such as; posting a question and requesting a response. They proposed that social media can: promote positive social norms and positive alternate behaviors, has the capacity to reach large targeted audiences, is cost effective, can foster public awareness and engagement, and can be used to evaluate performance indicators. The authors concluded

that the use of social media in health promotion will become a more important way to disseminate health promotion messages in the future (2012).

The literature reviewed identified several barriers to adolescent immunizations including perception and socioeconomic factors. It also suggested that if we are to increase adolescent immunization rates we will need to raise adolescent immunization awareness, increase community knowledge, and develop innovative strategies that promote the importance of adolescent immunizations.

Theoretical Framework

Pender's Health Promotion Model (HPM) was designed as a compliment to models of health protection; the intent of which is to increase a client's level of well-being (Polit & Beck, 2012). The HPM is a theoretical construct which can be used as a predictor of health promoting behavior in adolescents. HPM is comprised of three groups of influencing factors: individual experiences and characteristics, behavior specific cognitions described as perceived benefit or barriers to action, interpersonal influences, and situational influences, and a commitment to a plan of action (Strof & Velsor-Friedrich, 2006). Within HPM are ties to Bandura's Social Cognitive Theory which suggested people learn by observing what others do and will not do; in this theory, the environment, behavior, and cognition are factors influencing adolescent development. These influences have a mutual relationship between behavior, cognitive, and external factors; with self-efficacy as a central theme in the development of desired outcomes (2006).

HPM can be a useful theoretical framework when considering development of strategies to improve adolescent immunization rates in rural America such as in Okanogan County

Strategies

Individual Experiences and Characteristics

Adolescent characteristics and experiences include factors such as age, gender, and genetics that are not modifiable; and experience factors including self-esteem and perceived health, which are modifiable. Strategies at this level should focus on immunization as the norm and an important part of health promoting activity. Education regarding the importance of immunization and allowing adolescents' choice and control over health promoting activities such as immunization can be a positive component of healthy adolescent development. Most adolescents rely on parents for transportation, insurance coverage, and immunization authorization. Parents are the gatekeepers for access to adolescent immunization, and therefore are a key target stakeholder for interventions.

Perceived Benefit-Barriers to Action

The literature suggested that barriers to adolescent immunization include parents' perception and lack of knowledge regarding adolescent immunizations. Education must come from health care providers, school nurses, and community awareness campaigns that are culturally sensitive. If parents have adequate and accurate immunization information they would most likely make informed decisions. Policy change must occur at the school district level. This will require educational opportunities provided to school boards, superintendents, and key stakeholders in the community. Each district and school should have an understanding of the importance of immunization and potential costs of an outbreak such as the current pertussis epidemic in Washington State (DOH, 2012). Coaches can influence policy by being educated on the benefits of players and participants achieving full immunization status to protect overall team

health. Requiring immunizations in order to play may be a viable policy and reflect the importance of being fully immunized. Adolescents might perceive being immunized and ability to play sports as a benefit rather than a barrier.

In an assessment of the community by Okanogan County Public Health (OCPH, 2010), half of the adolescents in middle and high school participate in after school sports; therefore, they are required to have a sports physical. Promoting immunizations at sports physicals and offering incentives to both providers and adolescents could be effective in increasing immunization rates and promoting self-efficacy. Non-traditional settings such as pharmacies could be utilized to promote and administer adolescent immunizations (Schaffer, 2008). Social media outlets such as Facebook, Twitter, and YouTube, as discussed by Neiger et al. (2012) could be included in non-traditional settings as a creative option to reach adolescents and promote immunizations in rural areas such as Okanogan County.

Commitment to a Plan of Action

The formation of a community immunization coalition to brainstorm ideas and develop an action plan aligning with Healthy People 2020 adolescent immunization benchmarks could be an important driver of strategies and policy. Adolescent representation is vital when determining ways to encourage immunization receptivity. Involving local policy makers, elected officials, and local business owners, who could educate and facilitate support for adolescent immunization, is essential.

It has been suggested from the literature review that health care providers must be on board with the importance of adolescent immunizations. Washington State Child Profile Immunization Registry (Child Profile) is a computer system most clinics use which helps health

care providers keep track of immunizations given, and those needed. One of the benefits demonstrated by Child Profile is the recall system, which is the ability of the system to send immunization reminders when adolescent immunizations are due to be administered. Local public health nurses currently work with all clinics to encourage the use of this statewide system; more emphasis must be placed on the recall benefits of Child Profile. Local public health nurses also conduct Vaccine for Child (VFC) site visits to county clinics each year as part of a statewide quality improvement requirement for clinics that receive state funded children's vaccines. Personnel conducting these visits should identify missed opportunities for immunizing adolescents and encourage recall for those needing immunization. Table 1.2 provides an outline of a community strategy that may be used to improve adolescent immunization rates in rural America and areas such as Okanogan County.

Conclusion

Immunizations are a clear example of primary prevention at its best, saving countless lives every year. An assessment of Okanogan County 2012 statistics revealed that adolescent immunization rates are well below state and national levels; strategies are required to address this issue. While rural living can pose many challenges, the literature supports addressing the barriers to adolescent immunizations through adolescent, parent, health care provider, and community involvement. Achieving and maintaining high adolescent immunization rates is critical in the fight to promote healthy living, prevent disease, and to reach Healthy People 2020 goals.

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Table 1

Adolescent Immunization Rates 2009-2011

	Tdap	MenACWY	HPV
National	68.7	62.7	48.7
WA State	70.6	67.6	69.3
Okanogan County	57	46	32.7

Table 2

Strategy to Improve Adolescent Immunization Rates through a Community Event

Stakeholders	Activities	Participation	Outcomes
School			
School Coaches	Meet with coaches and provide sample immunization policies to school coaches	Attend community event Promote current immunization with teams	Coaches will adopt “immunizations to play” policy
School Nurses	Community education and awareness campaign presenting local data to media, local boards, and post on social media sites	Partner in vaccine administration at community event Provide materials/information	Develop and strengthen relationships with community partners, students, staff
Adolescents – school and team leaders	Planning/coordination of event Direct event based on adolescent needs	Record public service ads for radio and social media distribution Visible positive presence at community event	Provide positive role model for other students/team members
School Front Office staff	Educate on exemption law and participate in event planning	Provide information to parents/staff	Supportive front line conduit between school and parents
School District Superintendents and Principals	Include immunization materials in school/parent newsletters; Provide sample immunization policies to school leaders	Agreement for use of school for community event Support of school policy/exemption law Visible presence at community event	Policy change at school and district level
School Board members	Educate/include in planning for community event/school immunization policy change	Provide support and visible presence at community event Support policy change	Approve policy change
Community			
Newspapers and radio stations	Public service announcements/articles	Promote community event in local media	Community awareness of immunization importance

Table 2 continued

Faith based youth leaders	Educate/gain support and participation in event (HPV)	Promote event with adolescents/parents Positive role-model for teens	Faith-based support for adolescent immunization, including HPV
Civic leaders	Recruitment of key stakeholders for community meeting to plan/organize adolescent preventive health fair	Provide incentives Community involvement	Strengthen community through service
Utility companies	Include immunization materials in Public Utility District bills, city bills,	Increase education to community	Positive community service and involvement
Other community leaders/partners	Include in community event planning	Hair stylists for consultation Community Action	Positive community service and involvement
Health Care Providers			
Physicians, Nurse Practitioners and Physician Assistants	Priority in planning Provide local data	Provide “in-kind” sports physicals for community event	Community service and support for health promotion/prevention activities
Pharmacists	Include in planning/possible alternate venue for vaccine administration	Provide “in-kind” vaccine administration at event	Strengthen community relationships Provide community service
Local public health dept.	Plan initial meeting and invite stakeholders Disseminate data/materials Identify alternate venues such as pharmacies for immunization administration/develop relationships/agreements	Provide vaccine from DOH Administer vaccines at event, obtain consents, enter data in Child Profile	Increase immunization compliance through education, vaccine administration Strengthen community
State Dept. of Health – VFC and Child Profile	Vaccine agreements Database	Provide vaccine and access to Child Profile	Increased immunization rates
Other			
Social media sites	Plan/develop positive health promotion messaging, YouTube contest and incentives	Web sites/links for materials, positive adolescent health messaging YouTube contest	Reach large adolescent audience Promote personal responsibility