

University of Portland

Pilot Scholars

Nursing Graduate Publications and
Presentations

School of Nursing

2020

A Standardized Process for Adolescent Immunization Reminder/ Recall in a School-Based Health Center

Anna-Lise Krippaehne

Follow this and additional works at: https://pilotscholars.up.edu/nrs_gradpubs



Part of the [Infectious Disease Commons](#), [Nursing Commons](#), and the [Preventive Medicine Commons](#)

Citation: Pilot Scholars Version (Modified MLA Style)

Krippaehne, Anna-Lise, "A Standardized Process for Adolescent Immunization Reminder/Recall in a School-Based Health Center" (2020). *Nursing Graduate Publications and Presentations*. 43.
https://pilotscholars.up.edu/nrs_gradpubs/43

This Doctoral Project is brought to you for free and open access by the School of Nursing at Pilot Scholars. It has been accepted for inclusion in Nursing Graduate Publications and Presentations by an authorized administrator of Pilot Scholars. For more information, please contact library@up.edu.

A Standardized Process for Adolescent Immunization Reminder/Recall in a School-Based Health

Center

Anna-Lise Krippaehne, BSN, RN

University of Portland

A Standardized Process for Adolescent Immunization Reminder/Recall in a School-Based Health Center

Vaccination rates remain persistently low throughout the United States at 44% for recommended adolescent vaccines and between 88% and 92% for childhood vaccines (Centers for Disease Control and Prevention [CDC], 2019). The vaccination rates at one public high school in Seattle, Washington are consistent with the suboptimal rates seen throughout the United States. Seventeen percent of the student population was out of compliance with childhood vaccination requirements, and up to 41% had incomplete adolescent vaccinations. School district policy dictates that student must be up to date with childhood vaccines, or provide valid proof of exemption in order to attend. This policy, however, is not strictly enforced, placing students at risk for contracting and spreading vaccine-preventable illness. School-based health centers (SBHCs) act as key safety nets for adolescent access to healthcare and completion of recommended vaccinations free of cost.

Clinical Problem

Current practice at this SBHC, was found to be inconsistent, involving a tedious search of the statewide registry as patients are seen for other health concerns. Clinic providers often lacked access to the centralized registry and were not incorporating immunization review as a standard part of their practice. While most electronic health record (EHR) systems automatically update the statewide database as immunizations are completed, not all systems are compatible, meaning that records available may not accurately reflect a child's true immunization status. The SBHC lacked a specific process in place to remind and notify patients of due vaccinations and request their return for overdue vaccination. Henceforth, this will be referred to as reminder/recall.

Generally, individual immunization status assessment and update is tedious, consuming the vital student interface time of practitioners in the SBHC.

Background & Significance

The Washington State Immunization Information System (WAIS) is a statewide registry that records verifiable immunization data, including pediatric immunizations and titers, as well as adverse reactions, contraindications and exemptions. Records missing one or more of these components are deemed out of compliance. Pediatric standards of care require clinicians to review immunizations records at each patient visit and administer due and overdue vaccinations unless the child is immunocompromised or otherwise exempted (CDC, 2019; American Academy of Pediatrics, 2019). The Advisory Committee on Immunization Practices (ACIP) recommends adolescents receive the tetanus, diphtheria, acellular pertussis vaccine (Tdap), meningococcal conjugate (MCV4), and human papillomavirus series (HPV) at 11-12 years of age (CDC, 2019). A booster MCV4 is recommended at age 16, along with completion of catch up vaccinations, including hepatitis B (Hep B), measles, mumps and rubella (MMR), and varicella (VAR) vaccines for adolescents who are not up to date on childhood vaccinations. Immunization is a key preventative care measure, which promotes an adequate immune response to communicable disease. Reminder/recall methods are recommended for use in various clinical settings, and are most effective when tailored to the clinic and population needs (Jacobson Vann et al., 2018; Szilagyi et al., 2013; Suh et al., 2012; Morris, Wang, Wang, Peddecord & Sawyer, 2015; Perman et al., 2017; Golden et al., 2014; Swallow & Roberts, 2016). Various factors contributed to the low rates of compliance and vaccination at the SBHC: system compatibility, unverified records, lack of clinician access to immunization records, cost and parental consent. Current practice for immunization review at this SBHC was tedious and inconsistent, requiring

significant effort on the part of the clinician, student and school nurse. The tedious nature of immunization review resulted in perpetuation of noncompliance and increased risk of spreading transmissible disease.

Aim & Purpose

The aim of this practice improvement project was to improve immunization practices in the SBHC setting, specifically regarding adolescent immunization review and subsequent reminder/recall. By standardizing the immunization review process, we hoped to reprioritize the vital practice of immunization review, and thereby remind/recall students of scheduled and overdue vaccinations. Accordingly, this protocol was designed to increase compliance with district policy as well as increase receipt of immunizations given at the clinic. Through this practice improvement project, we hoped to embed effective strategies in the SBHC clinic which optimize adolescent immunizations.

Methods

A multimodal reminder/recall intervention based on immunization review was implemented over a 12-week period within the SBHC. A specific process for vaccination review and reminder/recall for clinic visits was introduced involving review of individual records from the WAIS by the clinician. Appropriate vaccination information statements (VIS) for due and overdue vaccines along with parental consent forms, and printed immunization records were given to students as a reminder/recall. Through partnership with the school nurse, a letter was sent to the parents of students who were out of compliance with the district immunization policy. The letter included the child's individual immunization status as well as information on immunization importance and instructions to bring their child into compliance. The SBHC was offered as a free and convenient resource for obtaining immunizations. The final aspect of this

intervention involved student awareness. Two social media posts aimed at student awareness of the clinic and immunizations were created and distributed through the social media platform Instagram. Primary process measures included documentation of immunization status at each individual clinic visit, whether a reminder/recall was given when applicable and whether vaccinations were administered at the visit. This data was collected from the WAIS by the patient care coordinator, who completed the initial review, prompted further clinician evaluation if needed and, finally, recorded the immunization status of student seen for a medical visit and whether the reminder/recall packet was given at the SBHC during the interventional period. As secondary measures, we compared pre and post implementation student vaccination compliance rates. Aggregate compliance rates were collected from the WAIS, accessed through the school nurse. Finally, we measured student awareness by tracking the number of 'likes' and comments from social media postings.

Results

Over 12 weeks of implementation, there were 394 medical visits at the SBHC. Over half (53%, n=209) of the student visits to the clinic did not have a complete vaccination record. During the clinic visits, over 90% (n=188) of patients received a reminder/recall to return to the clinic for immunization, and 16% (n=63) received one or more immunizations during the intervention period. From the total student body population of 2,024, vaccination compliance increased from 1680 to 1822 (from 83% to 90%), demonstrating an overall 7% increase in immunization compliance rate. Of the 344 students non-compliant with their vaccinations at the beginning of the intervention, 41% (n=142) became compliant by the end of the intervention period. No noteworthy changes were seen in adolescent specific vaccinations of MCV4 or the

HPV series. The social media posts were well-received, collecting 403 'likes' from 1161 followers.

Discussion

Overall, this low-tech, multimodal intervention was an effective strategy to access a population with continued need for immunizations. A standardized process for immunization review prioritized vaccination reminder/recall targeted at the population with the greatest need. Partnership with the school nurse provided an avenue for outreach to parents of non-compliant students, offering immunization resources to fulfill vaccination needs. Although it is unclear how many non-compliant students utilized clinic immunization services, many students received immunizations at the SBHC during the intervention period. The change in overall vaccination compliance (n=142) was greater than the number of patients given immunizations through the clinic (n=68), suggesting that clinician attention to vaccination, our social media campaign and parental outreach may have contributed to increased compliance during this time period. Our 7% increase in compliance rate is comparable to the literature, which supports a 5-20% increase in vaccination from all forms of immunization reminder/recall and increasing interventional intensity through various modes (Jacobsen Vann et al., 2018; Morris et al., 2015). Furthermore, it reinforces the value of collaboration with school nurses and SBHCs as facilitators of immunization completion as previously demonstrated by more comprehensive studies (Perman et al., 2017; Swallow & Roberts, 2016). Similar to Jones, Eathington, Baldwin and Sipsma's (2014) findings regarding social media and adolescent health knowledge, the social media posts generated student awareness regarding the importance of immunizations and may have increased interest in SBHC services. There were some limitations in this practice improvement project. Lack of system integration and automated electronic notification were technologic barriers

encountered in this project and could be utilized in future iterations. Moreover, a longer-term implementation period would likely yield better results, as UTD immunization status takes months to complete. Additionally, access to non-aggregate data would have allow paired data points to demonstrate statistical significance. Finally, the organizational climate significantly impacted project success. Although ancillary staff and the school nurse were eager to participate, a lack of leadership engagement created a barrier to fully integrating and sustaining the practice change.

Recommendations

All clinicians working with pediatric populations should be trained in immunization review and the process of reminder/recall, which requires access to centralized immunization databases and prioritization of immunization review as standard of practice. Whenever possible, a statewide centralized registry should be used, as the most reliable, wide-ranging database. In the future, this review process could be completed by ancillary staff trained in immunization review. Low-tech reminder/recall methods, such as letters, can be effective tools for promoting vaccination completion. SBHCs should foster a partnership with school nurses to increase outreach to parents and awareness of this free health service. Finally, social media platforms, such as Instagram, may facilitate messaging to increase student awareness of immunization standards.

Conclusion

SBHCs represent a critical access point for adolescent healthcare and, as demonstrated by this practice improvement project, access to immunization services. Targeted efforts with respect to the clinical setting and available resources are necessary to improve immunization rates among adolescents. By collaborating with the school nurse, engaging students and reaching out

to parents, SBHCs can strengthen immunization reminder/recall strategies to improve the health of adolescents.

References

- Centers for Disease Control and Prevention. (2019). Vaccine recommendations and guidelines of the ACIP: Contraindications and precautions. Retrieved from <https://www.cdc.gov/vaccines/hcp/acip-recs/general-recs/contraindications.html>.
- American Academy of Pediatrics. (2019). Office strategies for improving immunization rates. Retrieved from <https://www.aap.org/en-us/advocacy-and-policy/aap-health-initiatives/immunizations/Practice-Management/Pages/office-strategies.aspx>.
- Golden, S. D., Moracco, K. E., Feld., A. L., Turner, K. L., DeFrank, J. T., & Brewer, N. T. (2014). Process evaluation of an intervention to increase provision of adolescent vaccines at school health centers. *Health Education & Behavior, 41*(6), 625-632.
- Jacobson Vann, J. C., Jacobson, R. M., Coyne-Beasley, T., Asafu-Adjei, J. K., & Szilagyi, P. G. (2018). Patientreminder and recall interventions to improve immunization rates. *Cochrane Database of Systematic Reviews, 1*(CD003941), 1-225. doi 10.1002/14651858.CD003941.pub3
- Jones, K., Eathington, P., Baldwin, K., Sipsma, H. (2014). The impact of health education transmitted via social media or text messaging on adolescent and young adult risky sexual behavior: A systematic review of the evidence. *Sexually Transmitted Disease, 41*(7), 413-419. doi: 10.1097/OLQ.000000000000146.
- Morris, J., Wang, W., Wang, L., Peddecord, K. M., & Sawyer, M. H. (2015). Comparison of reminder methods in selected adolescents with records in an immunization registry. *Journal of Adolescent Health, 56*, 527-532.

- Perman, S., Turner, S., Ramsay, A. I., Baim-Lance, A., Utley, M., & Fulop, N. (2017). School based vaccination programmes: a systematic review of the evidence on organisation and delivery in high income countries. *BMC Public Health*, *17*(252), 1-11.
- Suh, C. A., Saville, A., Daley, M. F., Glazner, J. E., Barrow, J., Stokley, S., Dong, F., Beaty, B., Dickinson, M., & Kempe, A. (2012). Effectiveness and net cost of reminder/recall for adolescent immunizations. *Pediatrics*, *129*(6), e1437-e1445.
- Swallow, W., & Roberts, J. C. (2016). An evidence-based project demonstrating increased school immunization compliance following a school nurse-initiated vaccine compliance strategy. *The Journal of School Nursing*, *32*(6), 385-389.
- Szilagyi, P. G., Albertin, C., Humiston, S. G., Rand, C. M., Schaffer, S., Brill, H., ... Stokley, S. (2013). A randomized trial of the effect of centralized reminder/recall on immunizations and preventative care visits for adolescents. *Academic Pediatrics*, *13*(3), 204-213.