

HPV Vaccine Uptake in Cancer Centers

Abstracts

HPV Supplements to NCI-Designated Cancer Centers 2020–2021

January 22, 2021

Administrative Supplements for the NCI P30 Cancer Center Support Grants to Support HPV Vaccine Uptake

In September 2020, the National Cancer Institute (NCI) awarded a third round of supplements to 11 NCI-designated cancer centers to support investigation of vaccine hesitancy related to uptake of the HPV vaccine in regions with low adolescent HPV vaccination rates. The short-term goals for this one-year supplement are to:

- Understand characteristics of vaccine-hesitant communities within the cancer center catchment area
- Identify promising and innovative approaches to reducing hesitancy and other barriers to HPV vaccination
- Gather pilot data to support future interventions toward reducing vaccine hesitancy and increasing HPV vaccination.

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Title: *In-Depth Community-Level Investigation of HPV Vaccine Hesitancy in Rural New England*

Project Contact(s): Ardis Olson, Jenna Schiffelbein, Elizabeth Carpenter-Song, Inger Imset, and Brendan Nyhan

Institution: Norris Cotton Cancer Center at Dartmouth-Hitchcock

Vaccine hesitancy is a complex concept used to describe the beliefs held by a continuum of people who delay or refuse some or all vaccines. Vaccine hesitancy among parents has been recognized as an important aspect to explain why some young children do not get immunized. More recently, this issue has been associated with non-vaccination of adolescents, particularly with the human papillomavirus (HPV) vaccine. Vaccine hesitancy is an important issue in New Hampshire (NH) and Vermont (VT), where almost half of residents live in rural areas. NH and VT communities—particularly rural communities—have sub-optimal HPV vaccine series completion rates, despite substantial outreach efforts to primary care practices to reduce missed opportunities. Primary care providers in both NH and VT have participated in a variety of HPV quality improvement initiatives to implement evidence-based practice-level interventions, as well as trainings promoting strong clinician recommendations.

A comprehensive, community-wide assessment in rural NH and VT counties with low HPV vaccination rates is needed to understand the role of HPV vaccine hesitancy and its underlying factors that influence low HPV vaccination rates. A comprehensive community assessment in three rural communities in NH and VT will be conducted to identify, prioritize, and pre-test community-tailored interventions that address potentially modifiable factors underlying parents' HPV vaccine hesitancy. This proposed supplement extends previous work conducted, which focused on understanding provider recommendation for HPV vaccination by exploring non-clinician factors that contribute to low HPV vaccine uptake in VT and NH.

Title: *Vaccine Hesitancy Related to Uptake of the HPV Vaccine in Regions with Low Adolescent HPV Vaccination Rates*

Project Contact(s): Scott Coven, Greg Zimet, and Mary Ott

Institution: Indiana University Melvin and Bren Simon Comprehensive Cancer Center

Low HPV vaccine uptake has been documented in Indiana. Building on a previously funded environmental scan, Indiana University identified an Indiana statewide missed opportunity rate of 60% for HPV vaccination. The current proposal includes data on chart reviews of 177 adolescent and young adult survivors of childhood cancer followed in their hospital system, which also demonstrated inadequate HPV vaccination rates, with only 41% of males and 43% of females up to date with the HPV vaccine series.

The goal of this application is to ensure that survivors of childhood cancers are adequately protected through HPV vaccination, and to gain a better understanding of the knowledge, attitudinal, and logistical barriers to achieving this goal. This supplement will be conducted in two phases. Phase 1 includes in-depth interviews with two Indiana-based groups: parents of survivors of childhood cancer and young adults (and their parents) who are survivors of childhood cancer. Phase 2 will be informed by Phase 1 and will include interviews with subspecialty health care providers (HCPs) who provide clinical care of adolescent and young adult survivors of childhood cancer and surveys of parents of childhood cancer survivors.

The team plans to recruit broadly from patient populations in Indiana and expects to recruit parents of vaccinated and unvaccinated children. Hesitancy/confidence will be assessed through in-depth semi-structured interviews, then assessed with close-ended items that will be included in a subsequent parent survey. Through HCP interviews, the team will also assess both attitudinal and logistical obstacles to HPV vaccination. Data collected will be used to develop multi-pronged interventions to address: (1) Parental and young adult knowledge deficits about HPV vaccination; (2) parental and young adult misperceptions and fears about HPV vaccination, particularly in relation to cancer survivorship and sickle cell disease; (3) provider attitudinal barriers and lack of awareness; and (4) logistical barriers to HPV vaccine delivery. Data will be collected from the proposed research to identify potentially modifiable multi-level factors (i.e., parents' vaccine hesitancy would change if the subspecialist clinic provided directed HPV education that contribute to HPV non-vaccination and to vaccine hesitancy, or subspecialist HCPs' lack of knowledge to properly educate patients or ability to dispense HPV vaccines in their clinic). Investigators will subsequently develop a set of interventions for increasing HPV vaccine uptake and improving confidence in the vaccine (reducing hesitancy) that will include materials directed toward parental concerns and misunderstandings, training modules directed toward subspecialty HCPs, and steps that can be implemented to reduce or eliminate logistical barriers to vaccination.

Title: *The TalkHPV Study: Using the Social Ecological Model to Assess Multi-Level Perspectives and Solutions to HPV Vaccine Hesitancy*

Project Contact(s): Anna Beavis and Anne Rositch

Institution: Sidney Kimmel Comprehensive Cancer Center at Johns Hopkins

At the country level, low vaccine uptake in the United States is associated with higher parental socioeconomic status (SES) and education level, white race, and residing in the Southern and Midwestern regions of the United States. However, vaccine hesitancy is not limited to these populations, and differs on more local-level factors, such as within regions of a state or at the community level. Delivering effective vaccine promotion interventions requires identifying these populations and obtaining a deep understanding of the unique reasons for vaccine hesitancy to inform tailored interventions that impact vaccine-hesitant parents' practices. Therefore, we propose to use mixed methods to identify local populations who exhibit HPV vaccine hesitancy within the large and diverse Sidney Kimmel Comprehensive Cancer Center (SKCCC) catchment area, use the Social Ecological Model to understand the factors influencing their hesitancy, and to obtain pilot data from local parents and providers to design evidence-based, context-adapted interventions to improve vaccination in this area.

Title: *Investigate Vaccine Hesitancy Related to Uptake of the HPV Vaccine in Regions with Low Adolescent HPV Vaccination Rates*

Project Contact(s): Abraham Aragonés

Institution: Memorial Sloan Kettering Cancer Center

The proposal does a nice job of explaining the importance of addressing HPV vaccine hesitancy in New York City. The proposed study focuses on understanding the reach and effects of social media antivaccination campaigns in increasing HPV vaccine hesitancy within the catchment area of Memorial Sloan Kettering Cancer Center. Results from the pilot will describe the extent to which social media HPV antivaccination campaigns have reached adolescents and parents of adolescents in low HPV vaccination populations in the catchment area and will assess its impact on their decision to vaccinate against HPV. Additionally, the pilot will assess the extent to which social media HPV antivaccination campaigns are barriers for health care providers to recommend the HPV vaccine to adolescents and identify potential tailored approaches to reducing HPV vaccine hesitancy prompted by social media misinformation.

Innovative intervention approaches center on the unique collection of pilot data from local social media related to HPV vaccine misinformation and subsequent tailored interventions. The pilot will use a mixed methods approach that includes a combination of parent and provider surveys and semi-structured interviews. Specifically, the team will recruit parents of adolescent children eligible for the HPV vaccine who have screened positive for exposure to antivaccine campaigns in social media, with documented parental hesitancy to vaccinate their child against HPV (regardless of actual vaccination status). Impact of misinformation will be measured at the parent and provider level.

Title: *Vaccine Hesitancy in Regions with Low Adolescent HPV Vaccination Rates: The Vaccine Acceptance in Immigrant Youth and Adolescents (VAIYA) Study*

Project Contact(s): Simona Kwon and Chau Trinh-Shevrin

Institution: Laura and Isaac Perlmutter Cancer Center at NYU Langone Health

HPV vaccination rates remain low in Brooklyn immigrant communities, including the Arab and Mexican American immigrant communities. The purpose of this study is to understand and address the individual, community, and health-system factors that influence HPV vaccination uptake and series completion in Arab and Mexican American communities in Southwest Brooklyn neighborhoods. The study consists of three phases and is grounded in community-based participatory research (CBPR), social marketing principles, and the Consolidated Framework for Implementation Research (CFIR). In Phase 1, we will conduct semi-structured interviews with key informants (i.e., health care providers, community and faith-based leaders, school-based clinic program leads) and parents, caregivers, youth, and adolescents from the Arab and Mexican American communities in Southwest Brooklyn to determine individual, community, and health system-level determinants of HPV vaccination initiation, series completion, and vaccine hesitancy. In Phase 2, we will use a modified Delphi process with community and health care stakeholders to identify culturally responsive multilevel strategies for increasing HPV vaccination rates in Arab and Mexican American communities. In Phase 3, we will pilot test the evidence-based HPV vaccination messages with members of the Arab American community to examine the relevance of messages, delivery channels, and their impact on HPV vaccine knowledge and behavioral intention toward vaccination.

Title: *Investigating Vaccine Hesitancy Related to Uptake of the HPV Vaccine in Regions with Low Adolescent HPV Vaccination Rates*

Project Contact(s): Racquel Kohler, Leslie Kantor, Kathryn Greene, and Rula Btoush

Institution: Rutgers Biomedical and Health Sciences

Previous work by this team using the New Jersey (NJ) Immunization Information System (NJIS) found suboptimal HPV vaccination and within-state geographic variation. In the greater Newark area, uptake among Blacks and Hispanics was low, and completion among non-English speakers was problematic. Latina mothers also had limited knowledge about HPV infection and HPV vaccination, and expressed concerns about potential side effects, vaccine safety, necessity for young adolescents, and lack of vaccine information in Spanish.

This mixed methods study will determine patterns of low HPV vaccine uptake, the role of vaccine hesitancy, vaccine hesitant parents' decision-making, and potential acceptability of communication interventions to reduce hesitancy. We will leverage the 2020 Cancer Institute of NJ (CINJ) catchment area survey to identify sociodemographic factors associated with hesitancy attitudes and behaviors among parents. We will conduct additional formative research with parents and providers from low-uptake communities to understand factors influencing hesitancy, trusted information sources, and preferred delivery channels. Formative research will focus on parents of younger adolescents (aged 9–13 years) in the Greater Newark Area, including communities in Essex and Hudson counties.

Title: *Understanding and Characterizing the Influence of Vaccine Hesitancy on Uptake of the HPV Vaccine*

Project Contact(s): Julie Dang and Jingwen Zhang

Institution: University of California, Davis Comprehensive Cancer Center

The work of this supplement is based on the previous environmental scan as well as a literature review on disparities in HPV vaccine. The work will occur in 10 counties of UC Davis's 19-county catchment area. Ten counties were chosen for this project because they each have HPV vaccination initiation rates (31%–49%) below those of California (73.5%) and the United States (68.1%). Previous work by this team also found vaccine hesitancy among the residents of these counties, and disparities exist in HPV vaccine uptake among specific population groups in this region.

Both qualitative (i.e., key informant interviews and focus groups) and quantitative (i.e., surveys and social media analysis) methods will be used to assess factors related to HPV vaccine hesitancy in the University of California, Davis Comprehensive Cancer Center catchment area. Questions will be tailored to reflect local context and identify population-specific intervention strategies. An analysis of HPV-related Facebook information (including misinformation) and commentary will be identified for each county to understand diverse perspectives related to vaccine hesitancy.

The team will also seek to obtain feedback from stakeholders on interventions tailored for the various vaccine hesitant communities. The team will develop and pilot test interventions informed by these findings. For non-Hispanic white and English-proficient communities, the team will explore social media-based interventions. For the Slavic, Latino, and rural communities, they will focus on an in-person, dialogue-based intervention. Data generated from these pilots will inform future research interventions that address vaccine hesitancy and HPV vaccine uptake.

Title: *Identifying HPV Vaccine Hesitancy in Cancer Catchment Area: A Feasibility Study Leveraging Social Media*

Project Contact(s): Linda Robertson, Todd Bear, and Kar Hai Chu

Institution: University of Pittsburgh Medical Center, Hillman Cancer Center

This application proposes to identify and classify different HPV vaccine-hesitant groups on social media throughout the 29-county Hillman catchment area that surrounds the University of Pittsburgh. The proposed study will ascertain information about users' attributes, including location of residence and knowledge, and attitudes and behaviors associated with HPV vaccination. The plan is to combine classification data with county-level HPV-related cancer incidence and mortality and available county-level HPV vaccine uptake to inform and focus on potential targeted interventions. Lastly, in collaboration with patient advocacy groups and catchment area residents, the plan is to develop Twitter messages that can have a positive impact on HPV vaccine-hesitant individuals, increasing HPV vaccine uptake rates in areas that are currently low.

This supplement application builds on prior work related to HPV that includes a qualitative and quantitative survey focused on identifying barriers to increasing HPV vaccination rates in the Hillman Cancer Center's catchment area. Numerous

community partners and stakeholders, including the Pennsylvania Immunization Coalition, University of Pittsburgh Medical Center Children's Hospital, local immunization coalitions, pediatric practices, advocacy groups, and schools, provided feedback on the intervention and associated research study, which was viewed as a strength of the proposal. The use of social networking/Twitter to identify targets for anti-vaccine intervention and to develop the intervention are innovative.

Title: *Investigating Vaccine Hesitancy Related to Uptake of the HPV Vaccine in Regions with Low Adolescent HPV Vaccination Rates*

Project Contact(s): Jennifer Tsui, Lourdes Baezconde-Garbanati, and Martin Kast

Institution: University of Southern California, Norris Comprehensive Cancer Center

HPV vaccine uptake is particularly low in the Southern California region identified as the catchment area of the Norris Cotton Cancer Center (NCCC). Local-level data from the 2018 Los Angeles County Health Survey indicate that vaccination rates are considerably lower within the NCCC catchment area, with marked disparities in HPV vaccine initiation by gender, race/ethnicity, and parent nativity. The groups with the lowest uptake include Latino and Asian adolescent boys and Latina adolescent girls with immigrant parents. And within these groups, uptake varies considerably across geographic areas, suggesting that influences on vaccine hesitancy may affect uptake more than issues of access. This project will investigate HPV vaccine hesitancy in these diverse populations in the NCCC catchment area.

Investigators propose to conduct a mixed methods assessment of factors that influence HPV vaccine hesitancy, including differences in adolescent gender, parent nativity, and race/ethnicity. Data collected through this mixed methods pilot work will inform development of an intervention focused on the needs of all local stakeholders. The aims of the study are to identify sources of vaccine hesitancy as well as other barriers and facilitators to HPV vaccine information receipt and immunization; identify perspectives of different stakeholders on the feasibility, adaptability, and sustainability of strategies to address hesitancy in these communities; and develop a multilevel intervention using these strategies. Aims will be achieved through surveys of parents in English, Spanish, and Chinese, as appropriate; in-depth interviews with diverse stakeholders; and additional input from public sources reflecting availability of media resources and view of local public health/policy leaders.

Title: *Investigate Vaccine Hesitancy Related to Uptake of the HPV Vaccine in Regions with Low Adolescent HPV Vaccination Rates*

Project Contact(s): Shillpa Naavaal, Bernard Fuemmeler, David Wheeler, Askar Chukmaitov, and Tegwyn Brickhouse

Institution: Virginia Commonwealth University Massey Cancer Center

The proposed research will use a multilevel and mixed methods approach to understand vaccine hesitancy in the Brunswick, Dinwiddie, and Greensville counties in Virginia. Vaccine hesitancy at the community level will be examined by gathering data from parents/primary guardians, providers, and key community stakeholders. The pilot data collected from this project will be invaluable, as it will be the first project based on geospatial analysis to precisely identify the lowest HPV vaccination uptake counties in Virginia. Results from this project will be used to identify specific determinants of vaccine hesitancy and inform targeted interventions to improve HPV vaccination rates.

Title: *Investigate Vaccine Hesitancy Related to Uptake of the HPV Vaccine in Regions with Low Adolescent HPV Vaccination Rates*

Project Contact(s): Michelle Silver, Christine Marx, Lisa Klesges, Vetta Thompson, and Heather Brandt

Institution: Alvin J. Siteman Cancer Center at Barnes-Jewish Hospital and Washington University School of Medicine

The proposed project will build upon an existing school-based intervention to better understand barriers and facilitators for hesitant and accepting parents in Cape Girardeau, a rural community in Missouri. The theoretical approach is appropriate to guide the multilevel intervention. The project region is well described to justify study of human papilloma virus (HPV) vaccine hesitancy. Missouri is in the lowest quartile of U.S. states in terms of coverage with the HPV vaccine, ranking at 45th nationally. The investigative team has complementary expertise in disparities, rural health, cervical cancer screening, and HPV vaccine uptake. Collectively, they are engaged in ongoing studies related to HPV vaccine uptake and have numerous publications on vaccine uptake from previous studies.