



Human Papillomavirus Vaccination in Georgia: Evaluating the Georgia HPV Work Group

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Abstract

HPV-related cancers can be prevented through HPV vaccination, however uptake and completion of the vaccination in the state of Georgia remains suboptimal. The research team conducted two online focus groups with members of the Georgia Cancer Control Consortium HPV Work Group in efforts to better understand the role that the working group could have on increasing vaccination uptake and completion in the state of Georgia. Analysis of the focus groups was completed using a Grounded Theory approach. Various aspects of the Working Group were discussed throughout the focus groups with a number of key points for growth identified both by the participants during the discussion, and by the research team during analysis. Predominantly, a primary point for growth of the Working Group lies in building its capacity to collectively conduct HPV vaccination-related activities. An online webportal specifically designed for the Working Group was identified as a tool for improving Working Group communication, sharing best practices and resources, and to collectively develop activities, research projects, and HPV vaccine promotion events in a culturally competent and age appropriate manner in efforts to improve vaccine uptake and completion throughout the state of Georgia.

Keywords HPV · Human Papillomavirus · Vaccination · Work Group · Coalition strengthening

Background

Human Papillomavirus (HPV)-related cancers can be prevented through HPV vaccination. HPV vaccination has been recommended in the United States (US) since 2006 for females and 2011 for males, however HPV vaccine uptake remains suboptimal [1, 2]. In 2017, only 66% of 13–17-year-olds in the US had initiated HPV vaccination, with 49% up-to-date for the HPV vaccine series [3]. HPV vaccine uptake in Georgia (64% initiation, 46% up-to-date) is similar to, but slightly lower than, national estimates [3]. From 2008 to 2012, the combined incidence of HPV-associated cancers was 10.7/100,000 among males and 14.3/100,000 for females, with oropharyngeal (8.3/100,000 among males and 1.8 among females) and cervical (7.7/100,000 among females) cancers accounting for the majority of HPV related cancers in the US [3]. Given continued high rates of HPV-associated cancers in Georgia, persistent suboptimal vaccine uptake leaves large portions of the population vulnerable to these cancers.

Barriers to HPV vaccination are multi-factorial, necessitating coordinated efforts to address these barriers and increase vaccine uptake. One mechanism for this is key

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stakeholder coordination, leveraged through the development and implementation of strategic Cancer Control Plans (CCPs), with state-sponsored vaccine promotion coalitions [4]. Notably, the Georgia Cancer Plan for 2014–2019 identifies HPV vaccination as a priority area for cancer prevention [5], with targets of 50% vaccine series completion among all adolescents and a long term goal of reducing cervical cancer incidence from 8.2/100,000 to 7.4/1,000,000 population by 2019 [5].

Currently, 41 US states sponsor an HPV roundtable, coalition or work group [6]. Coalitions and roundtables present a unique opportunity to catalyze action between members of diverse sectors through idea exchange, dissemination of best practices, and creation of innovative and novel techniques for vaccine promotion [7]. The Georgia Cancer Control Consortium (GC3) HPV Work Group was created in December of 2013 to encourage HPV vaccination, and lessen the number of missed provider vaccination opportunities [8]. In the intervening years, the GC3 HPV Work Group has been active in raising awareness of HPV vaccination and recognizing “Vaccination Champion” healthcare providers. The Work Group convened state representatives in January 2018 in celebration of Cervical Cancer Awareness [9] and has promoted awareness of HPV vaccination and HPV-associated cancers through *Someone You Love* screenings [10, 11]. To date, there has been no evaluation of the Work Group’s organizational capacity or strategic plan for improving HPV vaccination conducted. To address this gap in knowledge, we assessed Work Group members’ perceptions of the structure, function, and effectiveness of the Work Group as part of a broader environmental scan of HPV vaccination in Georgia.

Methods

We conducted two online focus group discussions (FGDs) with members of the GC3 HPV Work Group to understand perceptions of members on issues related to the Work Group. The research team drafted a semi-structured focus group guide, which was reviewed for content and clarity by the Winship Cancer Institute’s Intervention Development, Dissemination Shared Resource. The study was reviewed and approved by the Emory University Institutional Review Board (IRB).

Recruitment

The research team explained the purpose of the research study to the Work Group during a monthly conference call and asked members interested in participating to email the research team. The research team sent IRB approved invitation letters to interested group members.

Informed Consent

An informed consent form was created and emailed to potential participants. Participants were instructed to review and ask any clarifying questions. Consent was documented after participants returned signed consent forms via email or fax. After participants provided consent, they were provided a direct URL link to access the online focus group. As a ‘Thank You’ for participation, members were offered a \$30 gift card.

Focus Group Facilitation

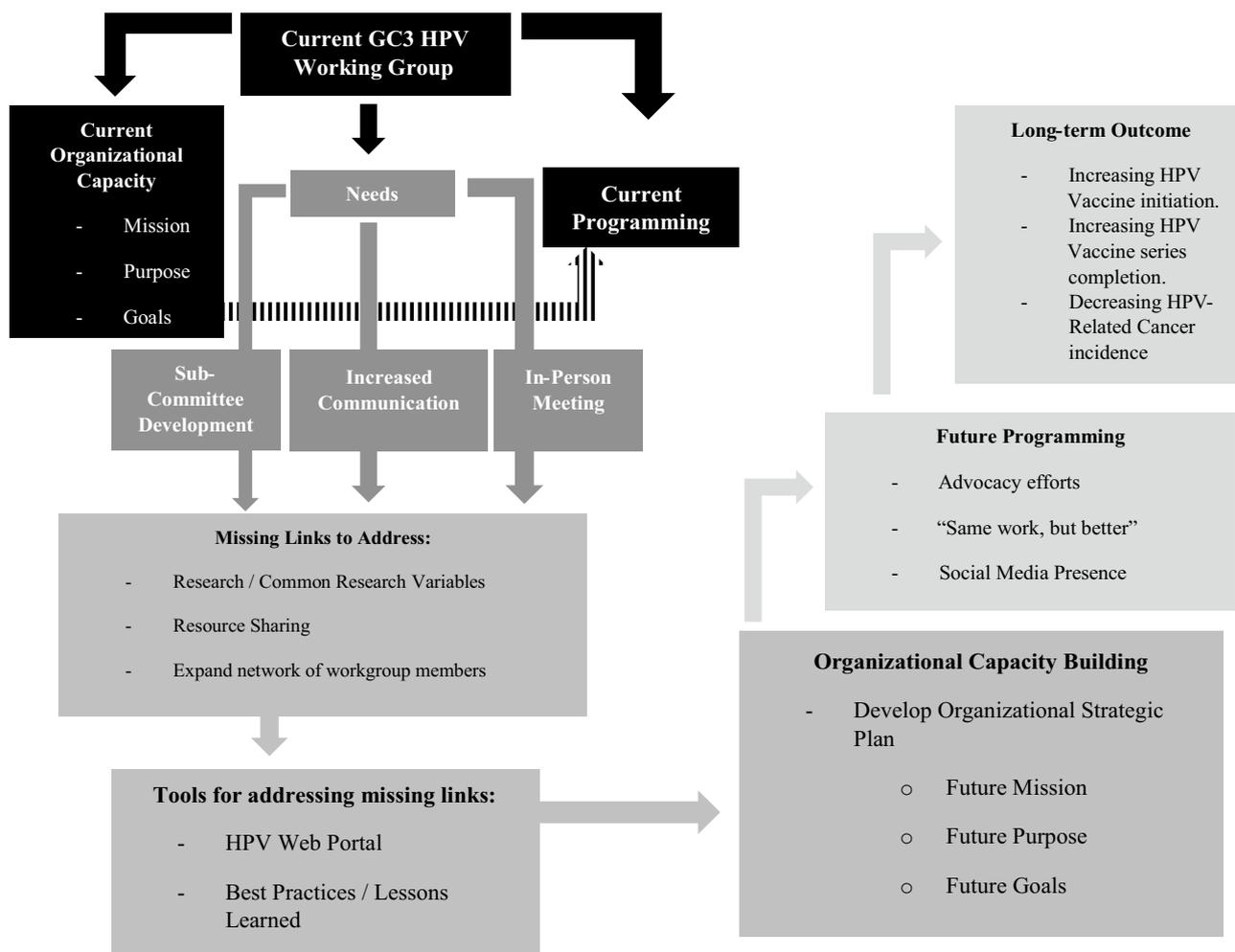
Focus groups were conducted online using *AdobeConnect 8* (Adobe Systems, San Jose, CA) software. An introduction to the focus group was provided and time for any clarifying questions was allotted. We sought to gather information on the status and future direction of the HPV Work Group using questions like “What actions does the Work Group take in order to meet collective goals or objectives?”. Upon completion of the focus group, participants were thanked for their time and informed that they could close out of the online discussion.

Analysis

The research team downloaded transcriptions from *AdobeConnect* for storage in a limited access, password protected, HIPAA compliant server. Transcripts were uploaded into *MAXQDA 2018* (VERBI GmbH, Berlin, Germany) for analysis. Data analysis focused on describing the state of the GC3 HPV Work Group and potential future directions of the group. The research also aimed to characterize the strengths and areas of improvement for the Work Group while developing an understanding of how the group works to achieve its goals. Using a deductive approach based in grounded theory [12] the research team developed a coding framework to define and illustrate themes and patterns. These patterns and their repeated appearance in the data formed the basis for thematic analysis. Using the apparent themes and patterns from the data, a codebook was developed and coding was used to highlight portions of text until code saturation was reached. The research team developed a contextual framework (Fig. 1) to aid in understanding how topics addressed in the data interrelate, affecting the format of the Work Group and developmental needs of the group.

Results

Two online focus groups were completed in April 2018, with nine ($n=9$) total participants. All participants were female and presented significant age range and geographic distribution. Participants represented Georgia regional



****Black is representative of what participants shared about the current state of the Work Group. Dark grey identifies needs labeled by the research team as targets for improvement and actionable items. Grey highlights the steps detailed for strengthening and capacity building of the Working Group to complete HPV-related work. Light grey represents the future long-term outputs and potential effects of improvement.**

Fig. 1 Conceptual framework—strengthening the GC3 HPV Work Group

cancer coalitions, governmental organizations, non-governmental organizations, research institutions, and non-profit organizations.

31 different codes arose throughout both transcripts with a series of themes and patterns also present. 87% of codes were deductive, resulting directly from FGD questions while the remaining codes were inductive and presented independently by discussion members. The conceptual framework (Fig. 1) depicts the themes and patterns that presented during focus groups and how each interrelates, affecting the needs and capacity of the Work Group.

Work Group Status

A commonality in both groups was that participants could not provide any set Mission, Purpose, or set of Goals for the Work Group. One participant said, “If we have one [Mission] it is very old and we haven’t referred to it any time lately” (FG5). Other participants shared that “I don’t think the group has a formal Mission Statement, given that it falls under the umbrella of GC3” (FG5) presenting an idea that the Work Group relies on the guidance of the GC3 Georgia Cancer Control Plan 2014–2019. While an “official”

purpose is not documented, participant's perceptions of the assumed purpose all aligned with a shared belief that "the purpose of the HPV workgroup is to work collaboratively (across the state) to increase the uptake of the HPV vaccination" (FG5). Some added to this purpose saying, "to collaborate with other professionals on how to best educate GA on HPV and lower HPV-related cancer incidence rates/improve HPV vaccination rates" (FG4). Similar to the purpose and the mission, participants shared that the goals of the Work Group aligned with the goals of the Cancer Control Plan 2014–2019 stating, "long term is to reduce cancer rates; short term is to increase [HPV] vaccination rates" (FG4).

Participants also discussed current Work Group programming. One participant shared "the *Someone You Love* screenings seem to be a good effort" (FG5) while another shared "we have had great success with our Mother/Daughter dinners" (FG5). [Note: Mother/daughter dinners were discussed as an event for sharing information related to female and reproductive health]. "Engaging pediatricians, finding ways to increase awareness through education, and reaching out to nurses" (FG4) were all ways that members have attempted to promote the HPV vaccine series. Another identified gap was a lack of specific measurable outcomes from which the Work Group sets goals and programming strategy. Members expressed a variety of topics on which the programming of their respective organizations focus and the variables they or their organizations examine. These include where patients get the vaccine, how they hear about it, trust in vaccinations, health-seeking behaviors, and vaccination rates for male and female adolescents (FG4, FG5). Participants noted that they examine community "access to immunization, [and] any barriers" (FG4), comparative review of "number of doses for Hep B, MMR, Varicella, Tdap, MCV4, and HPV" (FG5), and that there is particular focus on "when and why they have agreed to get [HPV] vaccine" (FG4). Participants also shared that much of the data that the group uses for determining research focus comes from state level resources, research, and immunization records databases (FG4, FG5) however each organization focuses on factors influencing uptake.

Many participants stated that their main efforts focused on education and vaccine promotion stating that the "sandwich method" (FG5) is a primary method they support for HPV vaccine promotion. [Note: The "Sandwich method" refers to a common practice of recommending HPV vaccination in between recommendations for Tdap and MCV4] [13]. Members also discussed their successes in explaining risks and potential side effects of the HPV vaccine series, comparing it to risks for other over the counter medications (FG5). Primarily, participants stated that they solely focused on the idea of creating awareness of the HPV vaccine series as "CANCER PREVENTION" (FG5) when discussing the vaccine series with the public.

Various needs of the Work Group were addressed by participants, and identified by the research team during analysis. One common need discussed was to expand the network of members further and reach out to providers, researchers, and other interested parties for their involvement. One participant stated "I think for us here in [town], inviting more team members to be a part of this workgroup would be wonderful... especially our G-Y-N nurse navigators and staff" (FG5). Meanwhile, other participants shared a need for "at least one strong pediatrician" (FG5) stating that "it's hard and has been attempted", expressing the difficulty in retaining healthcare providers as members of the Work Group. Other members identified "school nurses" (FG4) as individuals who could create community-level change. Participants also addressed a desire for an annual in-person meeting during which "goal setting" (FG5) and meeting one another "face-to-face" (FG5) would occur. Participants agreed that this would be useful and shared that "face to face meetings would help with [group member familiarity]" (FG4) and development of sub-groups. Along that line of thought, participants saw the sub-groups focusing on "activities that are reaching all of our audiences—teens, parents, pediatricians, and school nurses" (FG4).

While the research team identified apparent needs of the Work Group during analysis, some missing links were purposefully identified by participants that, when addressed, could benefit the group's coordination and programming. First, participants mentioned the lack of an open-access point for readily available shared resources stating, "there is not, in terms of a public facing site or shared drive" (FG5). Participants also noted that this would be helpful for new group members stating that "it would help me to better orient me to the group, understand the priorities, and get a better idea of how I fit in and could support the mission and goals" (FG5). Most prominently within the text was an identified missing link related to the need for increased communication between members. There was a significant disconnect between what members thought the Work Group is meant to be and do, compared to the verbalized purpose and goal of the Work Group. Additionally, missed opportunities in gaining opinions and views from all members in guiding the goals, programmatic focus, and direction of the Work Group were cited as addressable gaps. One participant shared "I don't recall ever receiving a survey to identify our top priorities for the HPV workgroup" (FG5). Another participant provided additional focus on the desire for a greater number of in-person meetings and member interaction stating, "I like the convenience of conference calls but I also believe we need face-to-face meetings... [I'm] not sure I know with whom I am partnering" (FG4).

Organizational Capacity Building to Address Missing Links

At population level, participants reiterated the importance of stressing “HPV vaccination is cancer prevention” (FG5) and that “prevention is better than finding a cure” (FG5). This aligns with the marketing shift for HPV vaccination from STD prevention to cancer prevention. Alongside this, members discussed how the Work Group can move forward in addressing missing links. Members shared their best practices learned through experience, which could be beneficial to other members in conjunction with methods for fluidly sharing information. One participant emphasized that the Work Group should merge connections between sectors of healthcare as the same practitioner does not follow an adolescent patient through adulthood, when an HPV-related cancer may present. They shared “for some pediatricians it is important to hear from [the] onc[ology] world since they are often removed from the aftermath of not giving a strong recommendation” (FG5). Adding to this, participants shared that “it’s not just about the provider, it’s about having the entire practice involved” (FG5), emphasizing the need to address HPV vaccine promotion for all healthcare professionals.

Addressing the need for a centralized resource sharing point, participants expressed interest in a web portal and the effect it may have. Participants stated that the portal would be “something that links all of this information together” and it would have the “capacity to do virtual meetings” or a way to “collaborate on projects” (FG5) which would be useful. Addressing this communication need, participants stated a contact list with “activities of individual group members to identify opportunities for collaboration” (FG4) would be useful. Participants noted the importance of incorporating interactive aspects like an online discussion forum, webinars, resource sharing platforms, space for meeting minutes/agendas, organizational strategy discussion and other organizational aspects. It was also shared that members would want a “place to put pictures and feedback of HPV-related events” (FG5), an additional method of knowledge sharing. Members noted that the portal should be “user-friendly” and easy to navigate (FG5). They also mentioned that the portal would be an ideal workspace for creating materials targeted for specific audiences (e.g. parents, adolescents, healthcare providers).

Future Programming

In reference to future programming, participants felt that the Work Group would be doing “the same work, but better” (FG4, FG5) identifying that technology advances and change in knowledge, comprehension, and trust in the vaccine series will affect how the group works. Some members

mentioned, “I would like to think that we would have gotten improvements in coverage levels to at least 70% completion for HPV” (FG5) identifying that goals for coverage level will change. Another member said “I think the group will be focusing on sustaining some of the progress and filling in some of the gaps into areas that are not seeing higher vaccination rates” (FG5) and identifying causes of variable vaccine uptake. In regard to longer term progress and goals, one participant stated “1 year continuing to improve vaccination rates and building our programs and partnerships, 5 year sustaining these programs because they will be so effective” (FG4) identifying the need to continue building a strategic network of providers and professionals. When asked specifically what the mission of the group should be most participants agreed that increasing vaccine uptake and completion was most important stating, “I think our mission should be to increase HPV vaccination until no child is left behind” (FG4).

Participants discussed the aspiration to have HPV vaccination added to the required vaccinations for adolescents in Georgia. When probed further one participant stated, “I was thinking similar to the vaccinations required for school... maybe required before entering middle or high school?” (FG4) as is done in states like Rhode Island [14–16], District of Columbia [17, 18] and Virginia [19]. Another participant aspired to add cancer prevention and HPV education into adolescent health curriculum (FG4). Participants also shared a desire to expand targeted outreach and the workgroup networking through social media efforts stating that “perhaps some social media campaigning would be helpful; targeted at providers and then a separate campaign for kids and parents” (FG5). Another participant added that “the most powerful method is TV ads. The ones out now really grab your heart!” (FG5) adding a potential focus for future messaging efforts citing previously successful campaigns.

Finally, participants shared potential strategies to increase adolescent HPV vaccine uptake and completion. Participants urged that adolescents need comprehensive health education and to be included in discussions on their health stating “they are certainly becoming more sophisticated and can advocate for themselves” (FG4). Informing adolescents of important health topics allows adolescents the agency to become involved in discussions important to them and their health. Participants also shared that “strong provider recommendations [are] the most important” (FG4) and added that the recommendation must be to both the adolescent and the parent in order to be most effective. To this effect, participants stressed that the recommendation must maintain the stance of “cancer prevention” (FG5) and avoid topics related to sexual activity. A third strategy was for the inclusion and strengthening of vaccine reminder systems in critical health systems. Participants added that because adolescents can now finish the vaccine series in two shots if finished before

15 years of age, that it is critical that an effective reminder system is in place (FG5). Last, participants noted the importance providing information from reputable resources when making vaccine recommendations and answering questions.

Discussion

Effective groups and organizations share a variety of characteristics impacting organizational structure and development which evolve alongside organizational growth [20, 21]. Strengthening the Georgia GC3 HPV Work Group requires multiple efforts working in tandem to create an environment which encourages adolescent HPV vaccination in the state of Georgia. As detailed in the results, the Work Group requires increased positive communication among members in efforts to ensure agreement and consensus on the strategic plan and Work Group programming [22]. Next, the Work Group should consider implementing a process for continual evaluation of the Group's strategic development plan (e.g. Mission, Purpose, and Goals). Lastly, the development and implementation of efficient mechanisms for resource and knowledge sharing presents significant opportunity for organizational capacity building within the Work Group and individual Work Group member organizations. Strategically addressing each of these would assist the Work Group in creating targeted messaging, programming, and strengthened organizational capacity for improving vaccine uptake among Georgia's incredibly diverse population [23]. While participants of the study represent only a portion of the professionals working to improve HPV vaccine series uptake and completion in Georgia, the results of the study offer great potential to influence the Work Group's future direction and growth. Improved communication, strategic programming, targeted messaging, and a strengthened network of GC3 Georgia HPV Work Group members could create an environment more open to implementing HPV vaccine policy and regulation, thus improving HPV vaccination initiation and completion across the state of Georgia—in turn decreasing the burden of HPV-associated cancers in Georgia.

Increased Communication

A topic discussed both directly and indirectly in focus groups was a lack of efficient communication between Work Group members, creating knowledge gaps within the Work Group. As noted, gaps in communication, or distinct miscommunications, cause issue within the Work Group resulting in members proposing “new methods” already undertaken, or with some members feeling that they haven't had equal input. Members expressed that they believed they had not received invitations to Work Group events where direction

and focus of the Group had been discussed. Beyond these communication matters, structural issues in on boarding new members also exist. One participant stated that as a new member they were not aware of the purpose of the Work Group or what other Group members were doing. This presents a point for further development of the Group and a primary area of concern which the Group should focus on. Developing stronger lines of communication within the Work Group will aid in progressing the Work Group towards the results it seeks [24].

Building Organizational Capacity

Effective teams have a “well-defined and forward-looking purpose” that is relevant to the goals and mission of the group [21]. No two members of the focus groups shared the same version of the Group's purpose, mission, or goals though some members provided similar variations of the three. As a mission, purpose, and set of defined goals are all vital in ensuring that an organization's capacity meets the needs of the population it serves, this lack of organizational alignment creates issues for planning Work Group activities and developing future goals. This has also resulted in miscommunication, confusion, and poor resource allocation within the Group. Noting this, an acute but addressable, need is to coordinate among the membership and develop an agreed upon purpose, mission, and goals that are shared transparently with members of the Work Group. Aligning goals, purpose and mission of the Work Group through dissemination of shared ideals and vision of members will create increased organizational capacity and cohesion within the Work Group while also impacting the effectiveness of Group activities and vaccine-related messaging [25]. Population needs, member values, and continued research and development of the HPV vaccine must also be considered when developing the Group's focus and direction in order to use its resources most strategically. This organizational development and structuring must continually occur in order to retain the Group's success [26]. In doing so, the Work Group could impart effective community change and drive demand for the HPV vaccine series. These changes in uptake and completion of the HPV vaccine series can result in decline of the burden of HPV-related cancers in Georgia.

Web Portal Development

A workgroup-specific web portal presents a new method for knowledge sharing and networking not yet attempted by the Georgia GC3 HPV Work Group Members. As Work Group communication presented a point for development within the Group, all web portal should have significant attention paid to increase communication between members. Increased communication, facilitated by the portal,

would aid in developing the overall organizational capacity of the Work Group as members will be able to use a discussion forum to discuss Work Group concerns. The portal will also support direct messaging between Work Group members. Increased communication and promotion of the Work Group's strategic plan on the web portal will ensure that all members understand the Group's strategies for reaching goals and programming methods for increasing HPV vaccine uptake and completion in Georgia. As most members provided similar ideas of a mission, purpose, and goals list for the Work Group, the web portal would provide a platform on which members could discuss and further specify each aspect. As direction of the Work Group changes with time and HPV-related innovation, the Purpose, Vision and Goals will follow and each of these could be discussed in depth through the online web portal with initial discussion occurring at annual in-person meetings. The portal will also present opportunity for growth of the Work Group as interactive aspects will be worked into the format of the portal to encourage involvement of professionals throughout the state.

This web portal would create space and opportunity for Work Group members to collaborate on programming related to vaccine promotion, research, advocacy, and education. Alongside this, the portal would allow professionals to discuss best practices and lessons learned, aspects shown to strengthen organizations [27], while seeking advice for strategies to promote the HPV vaccine. Furthering this, the portal would present ample opportunity to concentrate organizational resources to create a best practices and resource toolkit for HPV vaccine promotion. In more specific situations, the portal would allow for development of strategically crafted population specific messaging and programming. Mentioned in the data, advocacy for progressive policy related to HPV vaccination for adolescents could be an effective method to realize increased HPV vaccination coverage and completion rates in Georgia [28, 29]. The portal would create space to discuss and craft policy recommendations and to develop advocacy opportunities to encourage legislators to understand the importance of HPV vaccination for adolescents and improving community level health [30, 31]. Coordination through the web portal would allow professionals to optimize access to resources to affect population-level change while addressing the evident barriers to vaccination [32].

Conclusions

Impacting HPV vaccination uptake and completion in Georgia requires coordinated efforts from all involved parties. Strengthening the Georgia HPV Work Group presents a multifaceted opportunity for increasing capacity to address suboptimal adolescent uptake and completion of the HPV

vaccination series in Georgia. An online web-portal presents a needed mechanism for addressing the needs and structural weaknesses of the Work Group through an accessible point which encourages communication, resource and knowledge sharing, and development of strategic messaging and programming to promote HPV vaccine uptake and completion. Ultimately, these coordinated efforts for Work Group strengthening and organizational development could influence community-level perceptions and acceptance of HPV vaccine and lessen the burden of HPV-related cancers in Georgia.

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Compliance with Ethical Standards

Conflict of interest The authors have no conflicts of interest to declare.

Ethical Approval The project supporting this research was reviewed and approved by the Emory University Institutional Review Board.

Human Rights and Informed Consent This research report presents information collected during IRB approved focus groups conducted with participants in the State of Georgia. All participants were provided informed consent forms to review before consenting for participation. All participants signed informed consent forms providing their consent to be involved in the research.

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