

**STRATEGIC ACTION PLAN FOR CERVICAL CANCER
ELIMINATION AS A PUBLIC HEALTH PROBLEM IN THE
STATE OF ALABAMA**

2023-2033



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EXECUTIVE SUMMARY

Cervical cancer is entirely preventable through vaccination against cancer-causing strains of the human papillomavirus (HPV), periodic cervical screenings, and if necessary, treatment of cervical lesions before they can develop into cancer. Yet, Alabama ranks third in mortality and incidence of cervical cancer in the United States (U.S.) with great disparities across race and counties.

Recognizing the cervical cancer burden in Alabama and the availability of evidence-based tools, primary care providers and public health leaders across the state gathered at a Cervical Cancer Summit in the fall of 2022 in order to develop a participatory and strategic action plan to eliminate cervical cancer as a public health problem in Alabama by 2033. Identification of barriers, facilitators, and solutions focused on the three major components of cervical cancer prevention and control: HPV vaccination, cervical cancer screening, and follow-up/treatment. Based on the Summit discussions, research data from Alabama, review of literature on evidence-based cost-effective strategies, and available resources/infrastructure, strategic actions were identified to meet the goals toward the elimination of cervical cancer as a public health problem in Alabama.

Overall strategic actions addressing all three components include:

- Community-wide education and awareness campaigns/events, including cervical cancer survivor stories and consistent/unified messaging.
- Awareness of County Health Department services.
- Improved availability of appointments for cervical cancer screening/follow-up and HPV vaccination at County Health Departments, Federally Qualified Health Centers (FQHCs), and other local health care providers.
- Build partnerships with local churches and fire/police departments.

Four **HPV vaccination** targets were identified:

- a. increase HPV vaccination initiation (one dose) to 90 percent among Alabama children between the ages of 9 and 12 (priority group) and 80 percent among Alabama children between the ages of 13 and 17 (catch-up group) by 2033;
- b. increase HPV vaccination dose completion to 80 percent among Alabama children between the ages of 9 and 12 (priority group) and 80 percent among Alabama children between the ages of 13 and 17 (catch-up group) by 2033;
- c. increase HPV vaccination initiation (one dose) to 70 percent and dose completion to 60 percent among Alabama young adults between the ages of 18 and 26 by 2033; and
- d. increase the total number of providers across the state who are enrolled in Immunization Patient Registry with Integrated Technology (ImmPRINT). ImmPRINT is a statewide vaccination database for children and adults managed by the Alabama Department of Public Health (ADPH) Immunization Division. Strategic actions to meet these targets include:
 - School-based education and HPV vaccination.
 - Education and HPV vaccination at colleges across the state.
 - Education and support to health care providers (including dentists) to recommend vaccination HPV.
 - Examination of the possibility of legislative changes to allow the provision of Advisory Committee on Immunization Practices (ACIP) vaccination at pharmacies (including HPV vaccination) without standing orders.
 - Examination of the possibility of legislative changes to make HPV vaccination mandatory for school attendance.

The target for **cervical cancer screening** is to increase the percentage of Alabama women between 21 and 65 years of age who are adherent to cervical cancer guidelines with no disparities regarding race/ethnicity, educational attainment, and yearly household income to 90 percent by 2033. Strategic actions to meet this target include:

- Mobile teams from trusted clinics/providers in tandem with community education to provide screening and colposcopies in the community.
- Health care provider education on the importance of connecting women to health care services after they give birth as well as education on how to explain to their patients what cervical cancer screening consists of and the next steps in the event of abnormal results.
- Implementation science research to evaluate the most effective strategies to promote self-collection for HPV testing once this modality is approved by the U.S. Food and Drug Administration (FDA).

The target for **follow-up and treatment**, in the event of abnormal cervical cancer screening results, is to increase adherence to follow-up and treatment for cervical cancer abnormal results to 90 percent among Alabama women by 2033. Strategic actions to meet this target include:

- Increase the number of trained nurse practitioners and other clinicians who can perform colposcopies and trained providers able to provide the Loop Electrosurgical Excision Procedure (LEEP) in the community.
- Statewide registry for cervical cancer screening and abnormal results.
- Education of providers to encourage the use of multiple outreach/follow-up strategies for conveying abnormal results, including telemedicine.

RATIONALE

The “**Strategic Action Plan for Cervical Cancer Elimination as a Public Health Problem in the State of Alabama – 2023-2033**” is the result of a collaborative effort among organizations, primary care providers, and public health leaders across the state who gathered for the Cervical Cancer Summit held September 30 - October 1, 2022, in Birmingham, Alabama. Their suggestions and input have been integrated with a review of research findings in Alabama and evidence-based strategies. The Summit was organized by the University of Alabama at Birmingham (UAB) Marnix E. Heersink School of Medicine’s Department of Obstetrics and Gynecology in collaboration with ADPH, O’Neal Comprehensive Cancer Center, Rotary Club of Birmingham, TogetHER for Health, and the American Cancer Society. Funding for the event was provided by the ADPH Alabama Breast and Cervical Cancer Early Detection Program (ABCCEDP), American Cancer Society, Rotary Club of Birmingham, and TogetHER for Health.

Why is a Strategic Plan for Cervical Cancer Elimination as a Public Health Problem in the State of Alabama Needed?

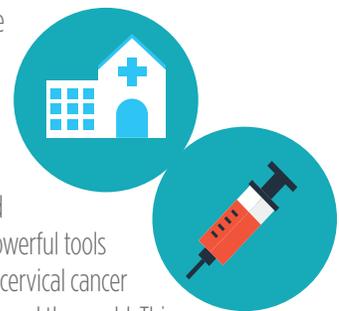
Cervical cancer is a devastating disease that affects women in the prime of their lives with great personal, family, and societal impact. It is the second most common female cancer and second most common cause of cancer death among women in the world. Alabama ranks third when it comes to mortality and incidence of cervical cancer in the U.S., with great disparities across race and counties.^{1,2} In fact, cervical cancer age-adjusted incidence and mortality in Alabama have not changed in the past 20 years (10.1/100,000 in 1999 compared to 10.1/100,000 in 2019). Unfortunately, age-adjusted cervical cancer mortality shows the same pattern (2.6/100,000 in 1999 compared to 2.5/100,000 in 2019).¹ Most importantly, cervical cancer is entirely preventable through vaccination against cancer-causing strains of HPV, periodic cervical screenings, and if necessary, treatment of cervical lesions before they can develop into cancer. If girls and women can access these interventions, we can end cervical cancer as a threat to women’s health (refer to Appendix A for detailed information on cervical cancer prevention and control).

Why is the Elimination Plan Achievable?

Today, we have the tools to prevent or detect cervical cancer early, as well as other HPV-related cancers (anal, oropharyngeal, penile, vulvar, and vaginal cancers). Across the U.S., most health insurance plans and/or federal programs, such as the Vaccines for Children Program and ABCCEDP, cover HPV vaccination, cervical cancer screening, and follow-up to abnormal results up to diagnosis. Nevertheless, having the tools and financial support for care is not enough to eliminate cervical cancer as a public health problem. We must also coordinate efforts among key stakeholders - health care providers, community-based organizations, business leaders, and others - to raise awareness among communities that these services are available and to improve access and availability of these services across the state.

There are lessons to be learned from the elimination of polio in the U.S. and the world. Both the SALK vaccine (available in 1955) and the SABIN vaccine (available in 1961) were available when the World Health Organization (WHO) mandated polio vaccination in 1974, but 14 years after that mandate (1988), there were still 350,000 polio cases worldwide. It was not until Rotary International joined forces with the WHO and other organizations as part of a grand challenge that polio has been almost eliminated worldwide.

Such a scenario shows that the elimination of cervical cancer should go beyond efforts from the medical and research communities. The discoveries have been made. We are now challenged with assuring that these powerful tools are made available to the communities in order to change Alabama from one of the states with the highest cervical cancer burden, to the first state to eliminate this devastating disease, which, in turn, can be a model for other states and the world. This effort will take the commitment of people from all walks of life and different segments of society coming together to develop and implement transformative strategies that can work in their respective communities.



Cervical cancer elimination as public health problem in Alabama can be achieved through collaborative and integrated efforts from organizations, business leaders, health care providers, school systems, civic and non-profit organizations, and committed individuals.

CERVICAL CANCER SUMMIT

STRUCTURE AND ORGANIZATION

The UAB Marnix E. Heersink School of Medicine’s Department of Obstetrics and Gynecology hosted a statewide Cervical Cancer Summit in collaboration with the UAB O’Neal Comprehensive Cancer Center, ADPH, TogetHER for Health, Rotary Club of Birmingham, and the American Cancer Society on September 30 – October 1, 2022, in Birmingham. This Summit was truly a “meeting of the minds” where 65 primary care providers and other public health leaders from across the state shared their insights and provided input toward the development, implementation, and evaluation of a collaborative and comprehensive plan to eliminate cervical cancer as a public health problem in Alabama (see map of counties that were represented at the summit – blue color).

In order to facilitate discussions and co-learning, the summit included discussions with the large group, as well as break-out sessions focusing on the three major components of cervical cancer prevention and control: HPV vaccination, cervical cancer screening, and follow-up/treatment. During the initial group discussion, participants were encouraged to identify barriers, facilitators, and potential solutions to increase HPV vaccination, cervical cancer screening uptake, and adherence to follow-up and treatment for screening abnormal results in Alabama. Identified solutions were then ranked by participants and the most frequently identified solutions were discussed in detail in break-out sessions and during the subsequent follow-up discussion with the entire group.

Participants were very engaged in identifying barriers, facilitators, and potential solutions. One-hundred percent of participants agreed/strongly agreed with the statements that they were:

- 1) encouraged to participate in this effort;
- 2) actively engaged in informed and purposeful discussions;
- 3) encouraged by the healthy debate and respectful of different viewpoints, and
- 4) part of the decision-making processes. Ninety-eight percent of participants indicated that they left the meeting with a clear understanding of what was expected of them (refer to Appendix C for detailed evaluation results/feedback from participants). The results of these discussions are in Tables 1-3.

FIGURE 1: Counties (blue) that were represented by health care providers and/or public health leaders at the Summit

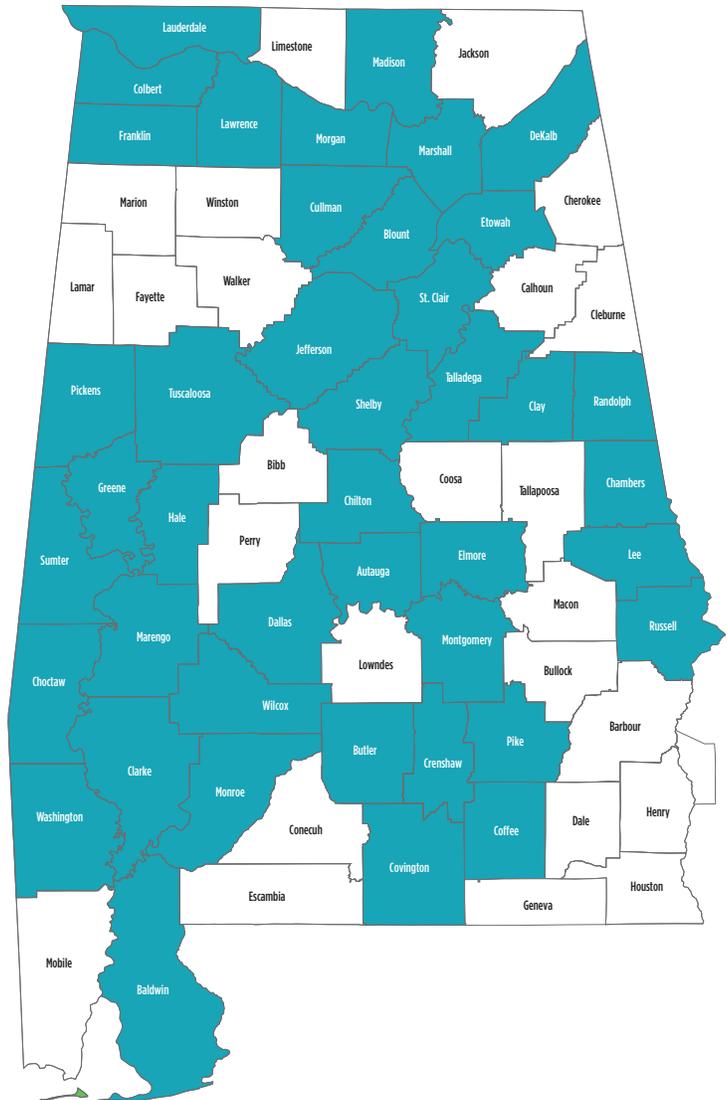


TABLE 1. HPV VACCINATION | Identified Barriers, Facilitators, and Potential Solutions

BARRIERS	FACILITATORS	SOLUTIONS *
<ul style="list-style-type: none"> • Lack of trust in vaccines – This has been particularly relevant in the context of the COVID-19 pandemic (“I do not want any vaccines”) • Lack of trust in the government – Reliance on opinions of family, friends, media, and social media • Lack of trust in health care professionals • Lack of recommendation by health care providers • Lack of information/misinformation – Innacurate information that is disseminated through social media and the internet, lack of information that boys should receive the HPV vaccine • Lack of urgency • Stigma – HPV being sexually transmitted, the fact that parents do not want to think their children will have sex, and cervical cancer survivors’ reluctance to share their stories • Limited availability – Not all clinics stock the vaccine and they are not available at pharmacies • Lack of awareness that the County Health Department provides HPV vaccination • Multiple shots due to competing priorities to return for a second or third visit • Fear of side effects • Perceived cost – Parents/guardians are not aware that most health insurance plans cover the vaccine and/or is covered by the Vaccines for Children Program among uninsured children • Limited enrollment of providers in ImmPRINT – This poses two major challenges: 1) It makes it difficult for providers to verify whether or not a child received the vaccine and the number of doses; and 2) Reliable tracking data cannot be obtained, which has implications for allocation of resources, targeted intervention efforts, and impact assessments of current efforts. 	<ul style="list-style-type: none"> • No-cost since HPV vaccine is covered by most health insurance plans or Vaccines for Children Program • School systems that are already implementing HPV vaccine along with other vaccines and/or willing to consider it • Churches that allow education to their members and engaged nurses in their congregations • Engaged dentists who are willing to educate their patients • Engaged fire/police departments who are willing to support education 	<ul style="list-style-type: none"> • School-based education and HPV vaccination (42) • Increase awareness of services provided by the County Health Departments, FQHCs, and other local clinics (37) • Make HPV vaccine available at pharmacies without standing orders (35) • Education and HPV vaccination at colleges (31) • Community-wide education and awareness campaigns/events, including survivor stories (22) • Partnership with dentists, churches, and fire/police departments (9) • Legislation to make HPV vaccination mandatory (9) • Education among providers toward HPV vaccination recommendation • Increase the number of providers enrolled in ImmPRINT

* The numbers in parenthesis are the number of votes for a particular identified solution. If the number in parenthesis is missing, it is because a particular solution did not receive any votes when presented to the larger group.

TABLE 2. CERVICAL CANCER SCREENING | **Identified Barriers, Facilitators, and Potential Solutions**

BARRIERS	FACILITATORS	SOLUTIONS *
<ul style="list-style-type: none"> • Lack of perceived risk – (e.g., monogamous, no sexual partner, belief that family history is a risk factor for cervical cancer) • Lack of knowledge that cervical cancer is preventable • Lack of understanding of what cervical cancer screening consists of – Patients do not know the difference between a pelvic exam and a Pap, and much less about HPV testing • Pap tests being “coupled” with STI screening – Either patients do not get screened because they do not have STI symptoms and/or perceive Pap and STI screening as the same • Primary care providers who do not perform cervical cancer screening – (particularly in rural areas) The reasons provided by primary care providers included lack of time, lack of a place to refer in the event of abnormal results, complex reimbursement process, and dealing with so many other health problems among their patients • Limited availability of gynecologists – Particularly in rural areas • Women do not go for regular check-ups after they stop having children or during inter-conception • Limited capacity at the County Health Departments – Some counties have a nurse practitioner who provides family planning and screening 2-3 days per month • Lack of communication between local primary care providers and the County Health Departments – Resulting in a lack of continuity in care and difficulties in tracking screening results • Confusing cervical cancer screening guidelines as well as frequent changes (including age) • Stigma – Survivors do not share their stories and women do not “know” anyone with cervical cancer • Lack of awareness among providers regarding ABCCEDP • Some women need approval from partners to get screened 	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • Promote partnerships between the County Health Departments, FQHCs, and other local/regional physicians, including sharing the capabilities of each and expanding mutual referrals (38) • Mobile teams from trusted clinics/providers (37) • Promote ABCCEDP and its participating clinics among health care providers (33) • Community-wide education and awareness campaigns/ events, including survivor stories (28) • Refer women after giving birth to FQHCs and other local clinics for screening (26) • Combine breast and cervical cancer screening when discussing screening with patients as well as community-wide education and awareness (18) • Provide women with the option of self-collection for HPV testing once approved by the FDA (11) • Education on what cervical cancer screenings consist of and what it means if the results are abnormal

* The numbers in parenthesis are the number of votes for a particular identified solution. If the number in parenthesis is missing, it is because a particular solution did not receive any votes when presented to the larger group.

TABLE 3. CERVICAL CANCER SCREENING FOLLOW-UP AND TREATMENT | **Identified Barriers, Facilitators, and Potential Solutions**

BARRIERS	FACILITATORS	SOLUTIONS *
<ul style="list-style-type: none"> • Lack of knowledge that ABCCEDP assists patients to sign up for Medicaid upon the cancer diagnosis • Concerns about costs or potential costs – as cost goes beyond treatment costs (e.g., loss of wages, loss of points at some factories) • Lack of understanding of the urgency/need for follow-up – as many times they do not have symptoms • Structural barriers – such as lack of childcare, lack of transportation, lack of gynecologists in many rural counties, limited number of providers who can perform colposcopies and LEEP • Intrapersonal barriers – such as fear of finding out they have cancer, embarrassment • Lack of trust in providers/health care system • Limited literacy • Language barrier and limited availability of in-person trained interpreters • Stigma 	<ul style="list-style-type: none"> • Use of frank and clear language • Knowing the provider and returning to the same place • Positive reinforcement and support when they come in for treatment 	<ul style="list-style-type: none"> • Increase the number of trained nurse practitioners and other clinicians who can perform colposcopies (37) • Statewide registry of abnormal results (27) • Increase awareness among patients and providers that ABCCEDP assists patients with signing up for Medicaid upon cancer diagnosis (21) • “Female health card” detailing tests, vaccines, etc. (20) • Vouchers for transportation (19) • Education through social media/app (17) • Mobile teams (16) • Use of telemedicine to discuss next steps/ education (10) • Use of multiple outreach/follow-up strategies for conveying abnormal results (10) • Hotline for questions (6) • Perform colposcopies at the County Health Department and FQHCs where women were screened (6) • Survivor/celebrity stories (6) • Partnership with churches for education/ awareness (5) • Capitalize on football games and other gatherings for education (5)

* The numbers in parenthesis are the number of votes for a particular identified solution.

PROPOSED STRATEGIC ACTIONS

Based on the Summit discussions, the recent ADPH report on cervical cancer² (Alabama Cancer Statistics – 2022: focus on cervical cancer), review of the literature on evidence-based cost-effective strategies, available resources/infrastructure, as well as additional engagement of partners and Summit participants, strategic actions were identified to meet the goals toward the elimination of cervical cancer as a public health problem in Alabama.

It's important to note that the goals of this plan are consistent with WHO's global plan for elimination and its "90-70-90 targets" by 2030: "90 percent of girls fully vaccinated with the HPV vaccine by the age of 15, 70 percent of women screened with a high-performance test between the ages of 35 and 45, and 90 percent of women identified with cervical cancer disease receive treatment."³ However, WHO's goals reflect a global consensus of key targets and the current plan reflects targets and strategies that are consistent with U.S. guidelines and resources. For instance, in the U.S., HPV vaccination is available for boys and girls in a wider age range and screening is recommended at more frequent intervals than proposed by WHO. The proposed goals and strategic actions are also aligned with the Alabama Cancer Plan 2022-2027.

Some of the identified solutions overlapped across the three components (e.g., mobile teams, community awareness/education) and some were specific to HPV vaccination, screening, or follow-up/treatment for abnormal screening results. For clarity, the overall strategic actions addressing all three components will be presented first followed by the specific goals and strategic actions regarding HPV vaccination, cervical cancer screening, and follow-up/treatment. However, it should be noted that these strategic actions must be implemented together to address the cervical cancer prevention and control continuum from primary to tertiary prevention and consequently, achieve the cervical cancer elimination goal.

Although many organizations have committed to the development, implementation, and evaluation of this plan, it is acknowledged that resources and infrastructure to implement all the identified strategic actions are limited. Thus, these strategies have been prioritized considering strategic actions that have already been initiated in some counties/organizations, partnerships that can be leveraged and/or expanded, available infrastructure/resources/manpower that can be strengthened, and potential high return on investment. These priority strategic actions are highlighted in teal.

OVERALL STRATEGIC ACTIONS ENCOMPASSING HPV VACCINATION, SCREENING, AND FOLLOW-UP/TREATMENT

Most of the strategic actions proposed below will rely on building and strengthening partnerships between multiple sectors, including government, health care systems, education systems, non-profit and civic organizations, businesses, faith-based organizations, and foundations from planning to implementation to long-term maintenance of these efforts. It was agreed by participants that **OPERATION WIPE OUT** will be the flagship in the implementation of the proposed plan since this effort is not a program led by one organization but rather a joint effort that is open to any organization that can contribute with resources, expertise, volunteers, financial support, etc.

OPERATION WIPE OUT is an initiative aimed at eliminating cervical cancer as a public health problem in Alabama. This is being accomplished by building education and awareness of HPV and cervical cancer, engaging communities, and facilitating access and navigation to HPV vaccination, cervical cancer screening, and follow-up/treatment for cervical cancer screening abnormal results. This collaborative effort brings together the UAB Marnix E. Heersink School of Medicine's Department of Obstetrics and Gynecology and O'Neal Comprehensive Cancer Center, TogetHER for Health, The Rotary Club of Birmingham, The Rotary Club of LaFayette, ADPH, Auburn University, Quality of Life Health Services Inc., Circle of Care Center for Families, Chambers County School District, and Russell Medical Center. The program was launched in Chambers County, Alabama, in 2022. Chambers County was chosen as a priority due to being



the county with the highest incidence of cervical cancer in the state. The first step consisted of engaging all partners to assure that capacity to handle the entire continuum of care (i.e., from HPV vaccination to cancer care) was addressed. This was followed by the development and implementation of evidence-based educational materials and community engagement.

Overall Strategic Actions Encompassing HPV Vaccination, Screening, & Follow-Up/Treatment

STRATEGIC ACTION	PRIMARY RESPONSIBILITY/PARTNERS
<p>Community-wide education and awareness campaigns/events, including cervical cancer survivor stories and consistent/unified messaging</p> <ul style="list-style-type: none"> • Expand OPERATION WIPE OUT statewide, including: <ul style="list-style-type: none"> > Evidence-based educational materials on cervical cancer and HPV. > QR Code for additional information and assistance with scheduling appointments for screening and HPV vaccination among un/under-insured, and navigation. > Education through the media and social media, including survivor stories. > Educational events linked to access to HPV vaccination and screening leveraging other community events (e.g., sports events, community event days, festivals, etc.). > Availability of speakers through a Volunteer Speakers’ Bureau that will provide information on cervical cancer and HPV to different audiences and facilitate access to HPV vaccination, screening, and follow-up care (e.g., toolkits). > Endorsement of the program with key community leaders, local businesses, and civil society to raise awareness and gain support. 	<p>Initial Partners</p> <ul style="list-style-type: none"> • UAB – Department of Obstetrics and Gynecology and O’Neal Comprehensive Cancer Center • TogetHER for Health • Rotary Club of Birmingham • Rotary Club of LaFayette • ADPH • Quality of Life Health Services, Inc. • Auburn University • Chambers County School District • Circle of Care Center for Families • Russell Medical Center <p>WIPE OUT is actively seeking additional partners across the state.</p>
<p>Awareness of County Health Department services</p> <ul style="list-style-type: none"> • Education through the media and social media about County Health Department services to the community-at-large. • Education materials to providers on the services, including the importance and benefits of enrollment with ImmPRINT and ABCCEDP, with testimonials of providers who are currently enrolled. • Enhancement of partnerships with local providers to facilitate referrals and follow-up, including the potential of providers’ access to the ADPH dashboard (similar to the process for opioid prescriptions), clear path of communication, and/or navigators. • Potential implementation of a “female health card” with tests, immunizations, etc. 	<ul style="list-style-type: none"> • ADPH • Local health care providers
<p>Increased availability of appointments at the County Health Departments, FQHCs, and other local health care providers</p> <ul style="list-style-type: none"> • Restructuring of how services are provided in different counties based on supply and demand (e.g., if a county holds an event to increase screening and HPV vaccination, the County Health Department increases the number of providers for a limited period of time). 	<ul style="list-style-type: none"> • ADPH • FQHCs • Local Health Care • Providers
<p>Partnership with churches and fire/police departments</p> <ul style="list-style-type: none"> • Capacity building of Auxiliary Support Members at rural Volunteer Fire Departments across the state to disseminate information and facilitate access to HPV vaccination, screening, and follow-up care. • Capacity building of “Congregational Health Leaders” in churches located in areas of low HPV vaccination and low cervical cancer screening to disseminate information and facilitate access to HPV vaccination, screening, and follow-up care. 	<ul style="list-style-type: none"> • UAB • TogetHER for Health • ADPH • Alabama Comprehensive Cancer Coalition • Other Organizations

HPV VACCINATION

GOAL



1. Increase HPV vaccination initiation (one dose) to **90 percent** among Alabama children between the ages of **9 and 12** (priority group) and **85 percent** among children between **13 and 17** years of age (catch-up group) by **2033**.
 - > 2022 baseline data: Children between the ages of 9 and 12 - **22.3%**
 - > 2022 baseline data: Children between the ages of 13 and 17 - **50.9%**
2. Increase HPV vaccination dose completion to **80 percent** among Alabama children between the ages of **9 and 12** (priority group) and **80 percent** among children between **13 and 17 years** of age (catch-up group) by **2033**.
 - > 2022 baseline data: Children between the ages of 9 and 12 - **7.7%**
 - > 2022 baseline data: Children between the ages of 13 and 17 - **35.1%**
3. Increase HPV vaccination initiation (one dose) to **70 percent** and dose completion **60 percent** among Alabama young adults between the ages of **18 and 26** by **2033**.
 - > 2022 baseline data: One dose completion among young adults between the ages of 18 and 26 - **38.5%**
 - > 2022 baseline data: Full recommended dose completion among young adults between the ages of 18 and 26 - **27.1%**
4. Increase the total number of providers across the state of Alabama who are enrolled in ImmPRINT by **30 percent** by **2033**. ImmPRINT is a statewide vaccination database for children and adults managed by ADPH Immunization Division.
 - > 2022 baseline data: **6,201** providers were enrolled in ImmPRINT

Strategic Actions to Meet the HPV Vaccination Target

STRATEGIC ACTION	POTENTIAL RESPONSIBILITY/PARTNERS
<p>School-based education and HPV vaccination</p> <ul style="list-style-type: none"> Engagement and commitment from school superintendents, principals, and leadership. Identify School Champions within each school system. Capacity building of teachers, school nurses, staff, and Health Occupation Student Association (HOSA). School Nurses Speaker Bureau to increase awareness among parents and guardians throughout the school year in preparation for HPV vaccination. Engagement of children with fun educational activities/games. <p>Challenge: Parents/guardians must provide written permission to have their children vaccinated</p>	<ul style="list-style-type: none"> School Systems Health Hero School Immunization Program UAB ADPH TogetHER for Health
<p>Education and HPV vaccination at colleges across the state</p> <ul style="list-style-type: none"> Engagement and commitment from college leadership and student health. Identify College Champions. Engagement of students in educational campaigns. 	<ul style="list-style-type: none"> Colleges UAB ADPH TogetHER for Health
<p>Education and support to health care providers (including dentists) to recommend HPV vaccination</p>	<ul style="list-style-type: none"> American Cancer Society VAX 2 STOP CANCER Alabama Chapter of American Academy of Pediatrics Alabama Dental Association ADPH Oral Health Branch Alabama Comprehensive Cancer Control Coalition
<p>Examination of the possibility of legislation change to allow provision of ACIP vaccinations at pharmacies (including HPV vaccination) without standing orders</p>	<ul style="list-style-type: none"> Alabama Adolescent and Adult Task Force (A3VTF) Alabama Pharmacy Association American Cancer Society Cancer Action Network
<p>Examination of the possibility of legislation change to make HPV vaccination mandatory for school attendance</p>	<ul style="list-style-type: none"> Alabama Adolescent and Adult Task Force (A3VTF) American Cancer Society Cancer Action Network

CERVICAL CANCER SCREENING

GOAL



Increase the percentage of Alabama women between 21 and 65 years of age who are adherent to cervical cancer guidelines with no disparities regarding race/ethnicity, educational attainment, and yearly household income to **90 percent** by **2033**. It should be noted that while the baseline data is based on having had cervical cancer screening within the past 3 years, cervical cancer screening guidelines may change in the upcoming years.

Baseline Data⁽⁴⁾

	RACE/ETHNICITY		EDUCATION		HOUSEHOLD INCOME/YEAR	
Cervical cancer screening in the past 3 years (2020)	Whites	76.4%	Less than High School	66.7%	< \$15,000	70.2%
	African Americans	85.5%	High School or GED	73.8%	\$15,000 - \$24,999	78.9%
			Some Post High School	80.5%	\$25,000 - \$34,999	65.8%
			College	88.6%	\$35,000 - \$49,999	79.7%
					> \$50,000	87.8%

Strategic Actions to Meet the Cervical Cancer Screening Target

STRATEGIC ACTION	POTENTIAL RESPONSIBILITY/PARTNERS
<p>Mobile teams from trusted clinics/providers</p> <ul style="list-style-type: none"> Use of mobile teams in coordination with community education efforts to provide screening and colposcopies and potentially, HPV vaccination. 	<ul style="list-style-type: none"> FQHCs and Potentially Other Health Systems UAB TogetHER for Health ADPH
<p>Health care provider education</p> <ul style="list-style-type: none"> Education of health care providers on the importance of connecting women to health care services after they give birth to clinics/County Health Departments for screening [education materials and Continuing Medical Education (CME)]. Education of health care providers on how to explain to women what cervical cancer screening consists of and next steps in the event of abnormal results (education materials and CME). 	<ul style="list-style-type: none"> American Cancer Society UAB Alabama Comprehensive Cancer Control Coalition
<p>Self-collection for HPV testing</p> <ul style="list-style-type: none"> Regardless of the scientific evidence of this approach and its use in many countries with endorsement of WHO, currently the only option for self-collection for HPV testing in the U.S. is in the context of research because this modality has yet to be FDA approved. Academic/research organizations should consider implementation science research to evaluate the most effective strategies to promote self-collection for HPV testing once it is approved by the FDA. 	<ul style="list-style-type: none"> Academic/Research Organizations

FOLLOW-UP/TREATMENT

GOAL



Increase adherence to follow-up for cervical cancer abnormal results and treatment to **90 percent** among Alabama women by **2033**. *Baseline:* 40 percent based on the results of Boitano et al. study described under research findings and national data.

Strategic Actions to Meet the Follow-Up / Treatment Target

STRATEGIC ACTION	POTENTIAL RESPONSIBILITY/PARTNERS
<p>Increase the number of trained nurse practitioners and other clinicians who can perform colposcopies and trained providers able to provide LEEP in the community</p> <ul style="list-style-type: none"> Expand the number of County Health Departments and other clinics that provide colposcopies and LEEP across the state. 	<ul style="list-style-type: none"> ADPH FQHCs Local Health Care Providers
<p>Statewide registry for cervical cancer screening and abnormal results</p> <ul style="list-style-type: none"> Consider having a statewide registry of cervical cancer screening and abnormal results similar to the one implemented in New Mexico. 	<ul style="list-style-type: none"> ADPH
<p>Education of providers and patients that ABCCEDP assists patients in signing up for Medicaid upon cancer diagnosis</p>	<ul style="list-style-type: none"> ADPH
<p>Education of providers to encourage the use of multiple outreach/follow-up strategies for conveying abnormal results, including telemedicine</p>	<ul style="list-style-type: none"> ADPH FQHCs Health Systems Local Health Care Providers

ACKNOWLEDGEMENTS

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APPENDICES

APPENDIX A | CERVICAL CANCER PREVENTION AND CONTROL: OVERVIEW

Cervical cancer is a cancer of the cervix – the narrow lower part of the uterus. Cervical cancer happens when abnormal cells begin to grow in the cervix. Every person with a cervix is at risk of developing cervical cancer regardless of race/ethnicity, household income, educational attainment, place of birth, or residence. Most of the time, patients with cervical cancer do not have any symptoms.

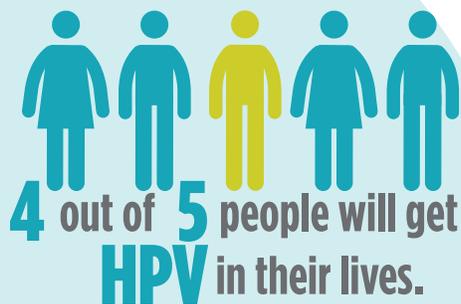
Most cervical cancer is caused by the Human Papillomavirus (HPV). This cause-effect association has had such an impact in the advancement of the understanding of the natural history of cervical cancer as well as screening and treatment options that Dr. Harald zur Hausen received the 2008 Nobel Prize in Physiology or Medicine for this discovery.¹ HPV is the most common sexually transmitted infection. HPV stands for human papillomavirus and it is not one virus. There are more than 100 HPV types and not all have serious health consequences. The word “papilloma” means “wart” because over half of the HPV types cause warts, including genital warts. However, some HPV types are referred to as “high-risk HPV” (hrHPV) and they can cause cancer. The most common hrHPV linked to cervical cancer are HPV 16 and HPV 18. HPV infection can also cause cancer of the vulva and vagina among women, penile cancer among men, and oropharyngeal and anal cancer among men and women.²

Anyone who is sexually active can get HPV even if the person has had sex with only one person. HPV is so common that nearly all sexually active men and women get it at some point in their lives. HPV is transmitted through intimate skin-to-skin contact. One can get HPV by having vaginal, anal, or oral sex with someone who has the virus.³

A person infected with hrHPV usually does not have symptoms, and he/she is transmitting the disease without knowing it. About ninety percent of women clear cervical HPV infection on their own. There are only a small percentage of women in which the virus will persist and lead to pre-cancer and cancer. If the HPV infection persists, it can progress into pre-cancer and cancer, which is why it is so important to be screened BEFORE it turns into pre-cancer or cancer.

The discovery that nearly all cases of cervical cancer are caused by hrHPV has led to the discovery and development of two efficacious preventive technologies: (1) HPV vaccination for primary prevention of HPV infection; and (2) Screening with high-risk HPV testing for secondary prevention.

While screening is a powerful tool to prevent cervical cancer, patients need to be provided with information on the importance of follow-up if the results are abnormal.



HPV VACCINATION

There is a vaccine that can prevent HPV infection, and consequently, cervical and other HPV-associated cancers. The HPV vaccine is very safe and covered by most health insurances or the Vaccines for Children (VFC) program for those who qualify. The current vaccine used in the U.S. is the 9-valent vaccine that prevents nine HPV types which are most associated with cervical, anal, and throat cancer as well as genital warts.⁴

What are the HPV vaccination recommendations?

The HPV vaccine is most effective when children are vaccinated BEFORE they are exposed to the virus. All girls and boys who are 11 or 12 years old should receive the HPV vaccine when they get their other routine vaccinations, but children can get it as young as 9 years old.

For teens and young adults who did not get the HPV vaccine when they were younger, it is recommended through age 26 and they should receive the vaccine as soon as possible. HPV vaccination is approved by the FDA for adults up to age 45 based on health care provider recommendation. For children 14 years of age and younger, two doses are required with the second dose given 6-12 months after the first dose. For teens 15 years of age and older, three doses are recommended. The second dose is recommended 1-2 months after the first dose, and the third dose 6 months after the first dose.

How well does the HPV vaccine work?

The HPV vaccine works extremely well. Studies show that this vaccine provides almost 100 percent protection against the types of HPV targeted.

Is the HPV vaccine safe?

The HPV vaccine went through years of extensive safety testing before being licensed by the U.S. Food and Drug Administration (FDA). The FDA only licenses a vaccine if it is safe, effective, and the benefits significantly outweigh the risks. Since its approval, over fifteen years of monitoring and research have continued to show that the HPV vaccination is very safe.

How much does the HPV vaccine cost?

Most health insurance plans cover the HPV vaccine. The Vaccines for Children (VFC) program also provides vaccines for children ages 18 years and younger who are uninsured or whose health insurance does not pay for the vaccine, Medicaid-eligible children, and American Indian/Alaska Natives.

IMPORTANT FACTS ABOUT THE HPV VACCINE



FULL DOSE

The HPV vaccine offers the best protection to boys and girls who complete all the recommended HPV vaccination doses.



TIME

The vaccine needs time to develop an immune response.



RIGHT AGE

It produces a better immune response in preteens as opposed to adolescents or adults.



PROTECTION

Getting the vaccine does not mean a child is ready to have sex. In fact, it is important to protect them before they even think about this issue.

CERVICAL CANCER SCREENING

The purpose of screening is to detect changes **BEFORE** it turns into cancer, and thus, **PREVENTING** disease. If precancerous changes are detected early and treated, cervical cancer can be prevented. Screening can also detect cervical cancer in women before they show any symptoms, giving them a higher chance of survival.

Prophylactic HPV vaccination may be the ultimate cervical cancer prevention strategy.⁴ However, HPV vaccination is most effective among children who have not been exposed to the HPV virus. Thus, women who have already been exposed to the HPV virus may not totally benefit from HPV vaccination. Assuming that HPV vaccination could have 100 percent coverage today, its impact on cancer incidence would not be realized for 20 years.⁵ Therefore, there is a great need to be aggressive in promoting cervical cancer screening, particularly among women who did not benefit from HPV vaccination.

What is HPV testing?

HPV testing is a screening test for HPV. A tiny brush is introduced through the vagina to get a sample. This sample is then examined in the laboratory to assess the presence or absence of the HPV virus and type of virus. If a high-risk virus for cancer is detected, the health care provider will recommend further follow-up. Sometimes the health care provider only performs HPV testing, sometimes HPV testing and the Pap test, and sometimes only the Pap test. HPV testing should be done among women 30 years of age and older because it looks for the **persistence** of the virus, which can lead to pre-cancer and cancer.

What are the cervical cancer screening recommendations?

U.S. Preventive Services Task Force Recommendations (USPSTF)⁶

Women younger than 21 years, women older than 65 years with adequate prior screening, and women who have had a hysterectomy with a total removal of the cervix

- They should NOT be screened for cervical cancer.

Women aged 21 to 29 years

- Cervical Cytology/Pap test alone – every 3 years

Women aged 30 to 65 years

- Cervical Cytology/Pap test alone – every 3 years
- hrHPV testing alone or co-testing – every 5 years



What is the Alabama Breast and Cervical Cancer Early Detection Program (ABCCEDP)?

Most health insurance plans cover cervical cancer screening and it has no impact on the deductible in some plans. There is also a federal program that covers breast and cervical cancer screening among un/under-insured women who meet the eligibility criteria.

The CDC National Breast and Cervical Cancer Early Detection Program was established over 30 years ago, and the program has provided access to breast and cervical cancer screening services to underserved women in all 50 states, the District of Columbia, U.S. territories, and 11 tribes. In Alabama, the program is the Alabama Breast and Cervical Cancer Early Detection Program (ABCCEDP).

Through ABCCEDP, cervical cancer screening and if needed, diagnostic services, are provided to women ages 21-64 who have an income at or below 250 percent of the federal poverty level, and who do not have insurance or are under-insured. If cancer is found during screening, eligible women can receive treatment through the Alabama Medicaid Agency.

Current ABCCEDP eligibility guidelines are:

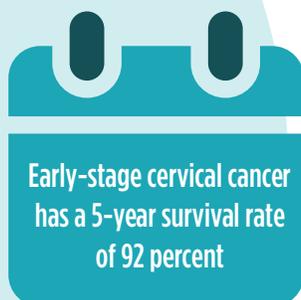
- **Women aged 40-64:** co-testing every 5 years or Pap test every 3 years.
- **Women aged 21-39** (those who have had tubal ligation or partial hysterectomy with cervix remaining).
 - > Ages 21-29: Pap test only every 3 years
 - > Ages 30-39: Co-testing every 5 years or Pap test every 3 years
- Women ANY AGE with a past personal history (biopsy) of cervical intraepithelial neoplasia 2 or 3 (CIN II or CIN III), or invasive cervical cancer.
- **Women aged 21-64** (those NOT eligible for Family Planning) with one of the following: Diethylstilbestrol (DES) exposure in utero, immuno-compromised due to health condition, organ transplant, or Human Immunodeficiency Virus (HIV).
 - > Ages 21-29: Annual Pap test
 - > Ages 30-64: Co-testing every 3 years, or Annual Pap test
- **Women aged 21-39** who need diagnostic follow-up services for abnormal cervical cancer screening results if uninsured or under-insured.
- **Women aged 65** or older with no insurance or Medicare Part A only must meet American Society of Colposcopy and Cervical Pathology (ASCCP) guidelines for continued screening.⁷



FOLLOW-UP AND TREATMENT

How to follow-up abnormal cervical cancer screening results?

Adhering to follow-up for abnormal cervical cancer screening allows for prevention or early diagnosis of cervical cancer. Follow-up after abnormal cervical cancer screening results may include colposcopy with or without cervical biopsy for tissue diagnosis or treatment via an excisional procedure. However, there is a low rate of follow-up for women after abnormal cervical cancer screening which ranges from 20-70 percent.⁸⁻¹¹ It has been shown that approximately 50 percent of patients screened for cervical cancer have at least one barrier causing them to be lost to follow-up and/or have delayed care (e.g., fear, competing demands, lack of transportation),⁸ and similar to initial screening, the lowest adherence rates occur in racial/ethnic minority women and women with a lower income and educational attainment.¹⁰



What is the treatment for cervical cancer?

Once a woman has a biopsy or excision procedure, the tissue is analyzed by a pathologist. If the results return without cancer, she will be followed closely with routine exams and biopsies as needed to ensure there is no further progression of the pre-cancer. However, if a woman is diagnosed with cervical cancer, she then undergoes a more extensive exam with imaging to evaluate the stage of the cervical cancer. Many women with early-stage disease can be cured with surgery alone, whereas women with more advanced cervical cancer require radiation usually combined with chemotherapy, but advanced-stage disease 5-year survival rates range from 17 to 58 percent depending on metastatic disease. Therefore, in order to decrease morbidity and mortality, it is imperative to prevent cervical cancer or diagnose women at an early stage.

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FIGURE 1: Counties (blue) that were represented by health care providers and/or public health leaders at the Summit

APPENDIX B | CERVICAL CANCER PREVENTION AND CONTROL IN ALABAMA Research Findings Published Within the Past Five Years

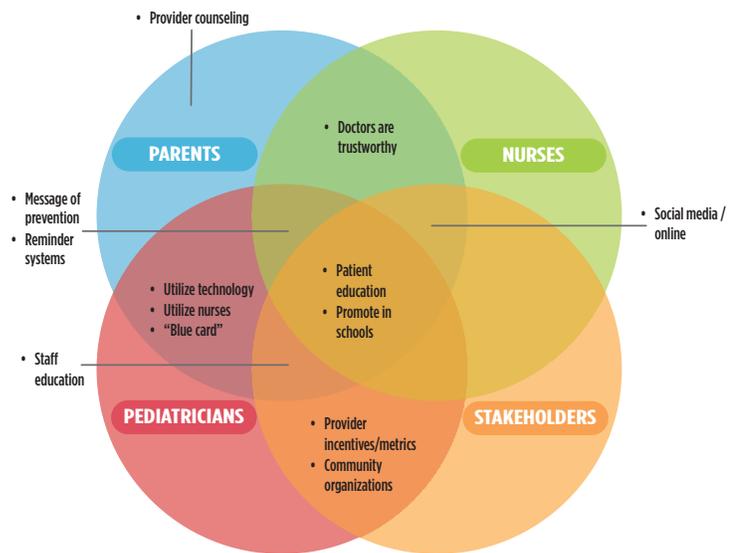
HPV VACCINATION

Barriers and Facilitators among Children/Adolescents

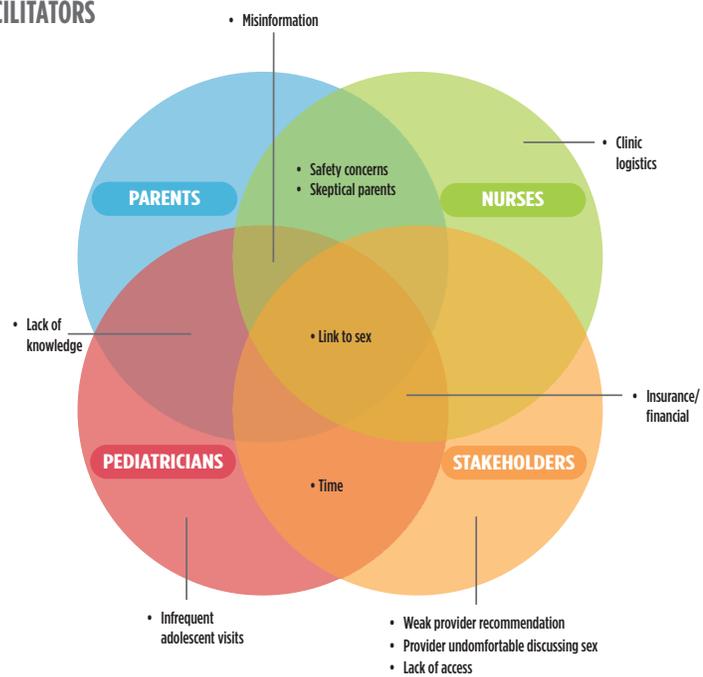
Dilley and colleagues (2018) conducted a mixed methods study to determine barriers and facilitators to HPV vaccination in Alabama. This included a survey of pediatric health care providers and qualitative interviews with pediatricians, parents, nurses, and other stakeholders. As shown in the figures, the link to sex was the main barrier identified by all stakeholders while patient education and school-based education/vaccination were the most frequent facilitators.¹

In a cross-sectional population-based study among parents/guardians of children between the ages of 9 and 18 in a rural county in Alabama (Escambia County), Boitano and colleagues found that only 40 percent of respondents indicated receiving a recommendation from a provider to vaccinate their child against HPV. The type of provider recommendation was not significantly associated with HPV vaccination uptake. The impression from the recommendation of HPV vaccination being “important” was significantly associated with the child being vaccinated on the same day or scheduling HPV vaccination. However, parents/guardians who got the impression that “there was no hurry” were less likely to vaccinate their child that day. These findings suggest that HOW recommendation for HPV vaccination is perceived by the parent/guardian plays a more important role in HPV vaccination uptake than the type of recommendation given by the health care provider.²

BARRIERS



FACILITATORS



Boyd and colleagues conducted qualitative interviews among primary caregivers of children between ages 11-18 in three rural counties in Alabama. They found that lack of information, concerns about side effects, and lack of health care provider recommendations were the most cited barriers among caregivers who did not vaccinate their children against HPV. Facilitators included discussions with the health care provider about the HPV vaccine and testimonials from peers.³

In another cross-sectional survey among African American mothers in Alabama focusing on factors that were most influential in their decision to comply with a physician's recommendations to get their daughters vaccinated against HPV, Cunningham-Erves and colleagues found that future-time orientation, perceived barriers and benefits to HPV vaccination, and perceived susceptibility to HPV infection were the most frequently endorsed factors influencing adherence to physician's recommendation.⁴ The authors followed up with nine respondents to get more in-depth information through semi-structured interviews. They found that mothers with low intention to vaccinate their daughters did not perceive their daughters to be at risk for HPV infection because they did not perceive them to be currently sexually active or being sexually active in the near future. While they indicated that pediatricians were the most influential person in their decision to vaccinate their daughters, many mothers reported that they did not receive such recommendations from their daughters' pediatricians. Other barriers included lack of knowledge, daughter's age, and lack of trust in pharmaceutical companies and physicians. Overall, mothers supported a potential HPV vaccination mandate.⁵

In a study among 317 Latina immigrant mothers of unvaccinated daughters between the ages of 9 and 12 in Alabama, 35.3 percent of mothers reported hesitancy to vaccinate their daughters if a physician recommended it. Factors associated with such hesitancy included daughter's health insurance status, lack of knowledge, lack of perceived susceptibility to HPV infection among the daughters, lack of perceived susceptibility to cervical cancer for themselves, and lack of self-efficacy. These findings suggest that a recommendation by a health care provider may not be sufficient to motivate Latina immigrants to vaccinate their daughters against HPV, which may confirm Boitano et al.'s findings that how the provider's message is received by the parents may play an important role in the decision to vaccinate their children.⁶ The same authors further examined the association of mothers' self-efficacy and HPV vaccination intention. Mothers who perceived their daughters at risk for HPV infection were more likely to vaccinate their daughters than hesitant mothers. HPV vaccine hesitancy was associated with lower educational attainment, lack of knowledge, and low self-efficacy. HPV awareness was the only variable associated with self-efficacy, suggesting that education to heighten awareness may lead to enhancement in self-efficacy and consequently, intention to vaccinate their daughters against HPV among Latina immigrant mothers in Alabama.⁷ The results described above were part of a baseline survey of a community-based, theory-driven, culturally relevant group randomized trial to promote HPV vaccination among unvaccinated daughters of Latina immigrants in Alabama between the ages of 9 and 12. Mothers in the intervention arm had a six times greater odds of vaccinating their daughters with one dose, eight times greater odds to give them two doses, and sixteen times greater odds for series completion than mothers in the control arm. It should be noted that at the time of trial three doses of the HPV vaccine were recommended for this age group.⁸



College Students

In a study conducted in 2016 among 1,725 college students at the University of South Alabama, McLendon and colleagues found 47 percent reported having received at least one dose of the HPV vaccine, 17.4 percent reported dose series completion, and 25.1 percent indicated that they did not know their HPV vaccination status. They found that provider and parental recommendations as well as social influences were facilitators to HPV vaccine uptake in this population.⁹

Geographic Patterns Within Alabama

Vickers and colleagues (2019) conducted a secondary data analysis with the purpose of identifying areas in Alabama with high/low incidence of HPV-associated cancers and HPV vaccination. They found that counties with highest HPV vaccination uptake were in the Black Belt region, had a majority African American residents, low adult educational attainment, and high poverty and publicly insured children. Interestingly, some of the counties with highest incidence of HPV-associated cancers were among the counties with highest HPV vaccination uptake. The authors speculated a potential association between perceived susceptibility to HPV-associated cancers and motivation to get vaccinated against HPV.¹⁰

In another study examining geographic patterns of HPV vaccination in Alabama using data from the 2015 National Immunization Survey, Albright and colleagues found that older age (15-19) was significantly associated with HPV vaccination initiation compared to lower age (10-14). The same was found for Hispanics as compared to whites, African Americans, and “other” race. The Appalachian northern region of the state had the lowest HPV vaccination initiation in the state.¹¹

Pharmacies As a Potential Provider for HPV Vaccination

Daniel and colleagues (2021) conducted a pilot study to examine the feasibility of enrolling a community pharmacy in a rural county (Clarke County) as a Vaccines For Children (VFC) provider where they provided vaccines (including the HPV vaccine) at no cost to eligible adolescents for a period of 8 months. This program also included an educational campaign in the community to heighten awareness on the importance of HPV vaccination. A total of 166 vaccines were administered to 89 children/adolescents between the ages of 10 and 18. Out of these, 55 doses were of the HPV vaccine. It was reported that in a one-year period there was a 158.8 percent increase in vaccinations at this pharmacy from the previous year. The pharmacy also experienced growth in additional services, prescription revenue, Medicaid prescriptions filled, and overall revenue. The intervention was well received by the community and local health care providers.¹²

	RACE/ETHNICITY		EDUCATION		HOUSEHOLD INCOME/YEAR	
Cervical cancer screening in the past three years (2020)	Whites	76.4 percent	High School (HS)	66.7 percent	\$15,000	70.2 percent
	African Americans	85.5 percent	HS or GED	73.8 percent	\$15,000 – \$24,999	78.9 percent
			Some Post HS	80.5 percent	\$25,000 – \$34,999	65.8 percent
			College	88.6 percent	\$35,000 – \$49,999	79.7 percent
					> \$50,000	87.8 percent

CERVICAL CANCER SCREENING

There were no published studies on cervical cancer screening among women in Alabama in the past five years based on a PubMed review. Based on the data from the Behavioral Risk Factor Surveillance System (BRFSS), while 79.5 percent of Alabamian women between the ages of 21 and 65 reported having been screened for cervical cancer in 2020, cervical cancer screening uptake in Alabama varies across race/ethnicity, yearly household income, and educational attainment.¹³

Scarinci and colleagues conducted a group randomized trial among un/under-screened African Americans in a neighboring state (Mississippi Delta) where women were given a choice between scheduling a cervical cancer screening at the local health department and self-collection for HPV testing. In addition to a much higher proportion of women assigned to the choice arm choosing self-collection for HPV testing (76 percent) over getting screened at the health department, women assigned to the choice arm were 5.62 times more likely to adhere to cervical cancer screening than women assigned to the control arm (screening at the local health department).¹⁴ The results also demonstrated that offering a choice to un/under-screened is more effective and efficient than scheduling cervical cancer screening appointments at the local health department.¹⁵

FOLLOW-UP/TREATMENT

Adherence to Colposcopy

Boitano and colleagues examined factors associated with adherence to follow-up for colposcopy after abnormal cervical cancer screening results among a random sample of 284 women referred to colposcopy at UAB between 1/2019 and 12/2019. “Adherent” was defined as coming to their first scheduled appointment. “Delayed” was defined as coming more than three months from the original appointment. “Non-Adherent” was defined as not coming to their scheduled appointments despite multiple efforts to reach these women. Results showed that 30.1 percent of women were adherent, 18.6 percent were delayed, and 42.3 percent were not adherent. African American women were significantly more likely to be not adherent than whites, and Latinas and African American women were significantly more likely to be delayed than whites. Patients with private insurance were significantly more likely to be adherent than un/under-insured patients.¹⁶

Adherence to follow-up for colposcopy



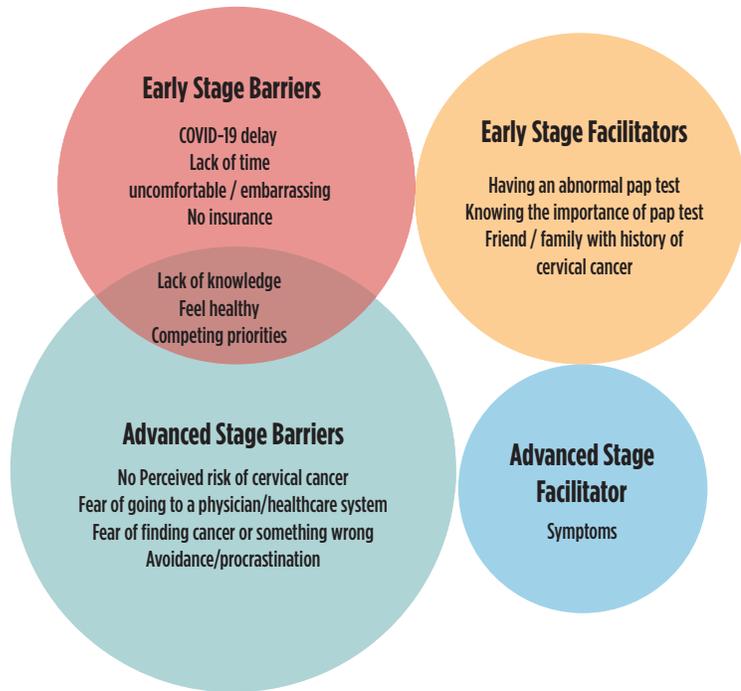
Advanced Stage, Survival, and Mortality

Abdalla and colleagues examined 5-year relative cervical cancer survival rates by stage at diagnosis and race among women in Alabama between 2004 and 2013 identified through the SEER (Surveillance, Epidemiology, and End Results) database. Overall, white women diagnosed with localized stage had a higher 5-year relative survival rate than African American women, except for African American women in rural counties outside the Black Belt where the 5-year survival rate was comparable (83.8 percent among African American women and 83.7 percent among white women).¹⁷ They also examined cervical cancer mortality trends over time among African American and white women in Alabama between 2002 and 2012 using the SEER database. Cervical cancer mortality among African American women 65 years of age and older was significantly higher than African American women between the ages of 20 and 64, white women between the ages of 20 and 64, and whites over 65 years of age. Although cervical cancer overall mortality declined between 2002 and 2012, cervical cancer mortality among African American women from 20 to over 65 years of age was consistently higher than among white women despite having higher screening rates than white women. Interestingly, cervical cancer mortality among white women between the ages of 20 and 64 has increased between 2002 and 2012 but it declined among white women 65 years of age and older.¹⁷

In a study among 464 cervical cancer patients receiving care at the University of South Alabama between 2011 and 2016, 16.6 percent had invasive disease and 56 percent reported seeing a gynecologist within five years of diagnosis. As a follow-up, 23 patients participated in qualitative interviews to assess HPV vaccination history, barriers, and perceptions. Approximately 90 percent reported that they were not vaccinated while 78.3 percent reported that they would receive the HPV vaccine if recommended.¹⁸

Powell and colleagues examined geographic risk factors for developing advanced stage cervical cancer (stages II to IV) among 934 women treated at UAB between 2005 and 2015. African American race, public health insurance and being over 65 years of age were associated with increased risk of advanced stage cervical cancer in Alabama. African American women had higher risk of advanced stage than white women independent of age, health insurance coverage, and place of residence. Living far from a women's health provider or being residents in rural counties were not associated with higher risk of presenting to care with advanced stage cervical cancer.¹⁹

In order to understand barriers and facilitators associated with patient presentation at cervical cancer early stage (IA1-IB3) versus advanced stage (IIA-IVB), Boitano and colleagues conducted qualitative interviews with 25 cervical cancer patients treated at UAB. As shown in the figure, the most frequently endorsed barriers associated with presentation at late stage were intrapersonal – lack of perceived susceptibility, fear of going to physician/health care facility, fear of finding cancer or something wrong, and avoidance/procrastination.²⁰



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APPENDIX C | CERVICAL CANCER SUMMIT – EVALUATION RESULTS

EVALUATION ACTIVITIES WERE CONDUCTED BY JULIANN WANG

I. Purpose of the Evaluation (why)

The purpose of this evaluation is to provide information to program staff and other stakeholders about the **implementation and outcomes** associated with the Alabama Cervical Cancer Summit that took place in Birmingham September 30th and October 1st, 2022. Findings will **support data-driven decision-making, and development, implementation, and evaluation** of a comprehensive and participatory plan toward the elimination of cervical cancer as a public health problem in Alabama.

II. Program Description (what)

a. Need or Issue Addressed

According to CDC data from 2015-2019, Alabama is ranked 3rd in cervical cancer incidence and mortality. The larger OPERATION WIPE OUT program was designed to address this **high cervical cancer incidence and mortality in Alabama** specifically through the four cervical cancer elimination strategies put forth by the World Health Organization (HPV vaccination, screening, timely follow-up after abnormal cervical cancer screening results, and timely treatment and care if abnormalities and/or cancer is found). Further, the program recognizes and seeks to address disparities in cervical cancer screening and HPV vaccination across counties, race/ethnicity, and income levels.

b. Program Goals and Objectives

Cervical Cancer Summit Aim: Engage primary healthcare providers and public health leaders across the state to identify barriers, facilitators, and solutions to increase the uptake of HPV vaccination, cervical cancer screening, and adherence to follow-up to abnormal cervical cancer screening results that will inform a collaborative plan toward the elimination of cervical cancer as a public health problem in Alabama.

c. Program summary

In collaboration with the UAB O'Neal Comprehensive Cancer Center and the Alabama Department of Public Health, The University of Alabama at Birmingham Heersink School of Medicine Department of Obstetrics and Gynecology hosted the Cervical Cancer Summit: A Call to Action to End Cervical Cancer in Alabama. Other partners included the Rotary Club of Birmingham, American Cancer Society and TogetHER for Health.

The event included 65 participants. Out of these, 55 completed the evaluation. The meeting was organized to encourage dialogue among academicians, frontline health care providers, and public health leaders in the state to identify evidence-based strategies to eliminate cervical cancer as a public health problem in Alabama. The goal was to discover and develop strategies to improve HPV vaccination, screening, and follow-up. Following the summit, the strategies discussed would be used as a guide and outline to create a comprehensive and collaborative plan that will be disseminated to diverse stakeholders in Alabama. The ultimate goal is to make Alabama the first state in the nation to eliminate cervical cancer as a public health problem.



The summit was a two-day event held on September 30 and October 1, 2022 at the Marriott Birmingham Grandview Hotel. Participants were provided with lodging and CME credit for attendance.

Speakers included the following:

- > Mrs. Kimberly Williams - American Cancer Society
- > Mr. Dan Stephens - Rotary Club of Birmingham
- > Dr. Heather White - TogetHER for Health
- > Dr. Isabel Scarinci - Department of Obstetrics and Gynecology, University of Alabama at Birmingham
- > Dr. Warner Huh - Department of Obstetrics and Gynecology, University of Alabama at Birmingham
- > Dr. Butch Busby - Rotary Club of LaFayette

There were three break-out sessions on **Day 1**, and attendees chose two break-out sessions to participate in. The sessions were HPV vaccination, screening, and follow-up to abnormal results/treatment. Each session had a moderator and note-taker to organize the discussion. Notes were taken regarding three different topics- facilitators, barriers, and solutions. On **Day 2**, participants were given “dots” (stickers) to select and rank the solutions that were generated during the discussions on Day 1. The top 3 strategies for each topic (HPV vaccination, screening, and follow-up to abnormal results/treatment) were then further developed through discussions in break-out sessions. After further development and elaboration on the strategies, the entire group gathered to provide input and partake in a collaborative discussion as a whole.

Ultimately, the program’s goal was to engage primary health care providers and public health leaders of the state to take action in combating the health disparities and outcomes of cervical cancer in Alabama. The Summit was intended to be a discussion and collaboration, not a lecture or conference where presenters spoke to an audience.

Volunteers (including some of summit attendees) will use the developed strategies to create a plan for the state. It is the hope that this summit created tangible action items to direct a coherent and implementable plan.

III. Evaluation Design (how)

Evaluation Design

The overall evaluation used a mixed-methods approach to assess program processes and outcomes. Participants were asked to complete an evaluation at the conclusion of the summit to assess the effectiveness of the program in collaborating to create a statewide initiative to address cervical cancer elimination as a public health problem in the state of Alabama.

CERVICAL CANCER SUMMIT 2022 ACTIVITY EVALUATION

Total Attendees that completed evaluation: 55

A. What is your highest degree? (n=55)	% (n)	
	MSN	38% (21)
	MD	20% (11)
	Masters	18% (10)
	DNP	11% (6)
	DO	3% (2)
	MD/PhD	2% (1)
	PhD	2% (1)
	CNM	2% (1)
DMD	2% (1)	
Bachelor Degree	2% (1)	
B. How long have you been in this health profession?	% (n)	
	0-5 years	38% (4)
	6-10 years	20% (11)
	11-15 years	18% (2)
	16-20 years	11% (12)
	More than 20 years	3% (24)
Retired	2% (2)	
C. Please indicate your assessment of the following components of the Summit by marking your response using the scale provided.		
Pre-event and Logistics:		
Communication prior to Summit (invitations, confirmations, etc.) (n=55)	% (n)	
	Poor	
	Below Average	
	Average	4% (2)
	Good	29% (16)
Outstanding	67% (37)	
Location (Grandview Marriott) (n=55)	% (n)	
	Poor	
	Below Average	
	Average	
	Good	27% (15)
Outstanding	73% (40)	
Meeting Rooms (n=55)	% (n)	
	Poor	
	Below Average	
	Average	
	Good	29% (16)
Outstanding	71% (39)	
Food (n=55)	% (n)	
	Poor	
	Below Average	
	Average	
	Good	31% (17)
Outstanding	69% (38)	

Event:		
Overall Rating of the Summit (n=55)	% (n)	
	Poor	
	Below Average	
	Average	
	Good	16% (8)
Outstanding	85% (47)	
Overall Remarks on Day 1 (n=55)	% (n)	
	Poor	
	Below Average	
	Average	
	Good	25% (14)
Outstanding	75% (41)	
Dr. Warner Huh-Cervical Cancer Elimination as a Public Health Problem: A Goal Within our Reach (n=55)	% (n)	
	Poor	
	Below Average	
	Average	
	Good	9% (5)
Outstanding	91% (50)	
Break-Out Sessions Day 1 (n=52)	% (n)	
	Poor	
	Below Average	
	Average	
	Good	15% (8)
Outstanding	85% (44)	
Reception (n=52)	% (n)	
	Poor	
	Below Average	
	Average	
	Good	19% (10)
Outstanding	81% (42)	
Voting on solutions breakfast event (n=55)	% (n)	
	Poor	
	Below Average	
	Average	
	Good	24% (13)
Outstanding	76% (42)	
Dr. Butch Busby-Operation Wipe Out: An Example from Chambers County (n=54).	% (n)	
	Poor	
	Below Average	
	Average	2% (1)
	Good	26% (14)
Outstanding	72% (39)	

Break-Out Sessions Day 2 (n=52)	% (n)	
	Poor	
	Below Average	
	Average	
	Good	21% (11)
	Outstanding	79% (41)
Collaborative Plan Discussion (n=53)	% (n)	
	Poor	
	Below Average	
	Average	
	Good	17% (9)
	Outstanding	83% (44)
D. Disclosure Compliance- Please rate your level of agreement with the following statements.		
Faculty disclosures and acknowledgements of commercial support were made. (n=54)	% (n)	
	Agree	100% (54)
There was no evidence of commercial bias in this activity (n=54)	% (n)	
	Agree	100% (54)
E. Objectivity and Relevance. Please rate your level of agreement with the following statements.		
The content was objective and balanced. (n=55)	% (n)	
	Strongly Disagree	
	Disagree	
	Unsure	
	Agree	16% (9)
	Strongly Agree	84% (46)
The content was evidence-based. (n=55)	% (n)	
	Strongly Disagree	
	Disagree	
	Unsure	
	Agree	18% (10)
	Strongly Agree	82% (45)
Sources of evidence were identified. (n=55)	% (n)	
	Strongly Disagree	
	Disagree	
	Unsure	
	Agree	25% (14)
	Strongly Agree	75% (41)
The activity was relevant to my practice (n=55).	% (n)	
	Strongly Disagree	
	Disagree	
	Unsure	2% (1)
	Agree	14% (8)
	Strongly Agree	84% (46)

I will apply what I learned in this activity (n=54).	% (n)	
	Strongly Disagree	
	Disagree	
	Unsure	2% (1)
	Agree	13% (7)
	Strongly Agree	85% (46)
F. Please indicate how much you agree with the following statements by marking your response using the scale provided.		
All attendees were encouraged to participate (n=55)	% (n)	
	Strongly Disagree	
	Disagree	
	Unsure	
	Agree	9% (5)
	Strongly Agree	91% (50)
All Summit attendees were actively involved (n=55)	% (n)	
	Strongly Disagree	
	Disagree	
	Unsure	
	Agree	22% (12)
	Strongly Agree	78% (43)
We engaged in informed, purposeful discussions (n=55)	% (n)	
	Strongly Disagree	
	Disagree	
	Unsure	
	Agree	11% (6)
	Strongly Agree	89% (49)
We encouraged health debate and were respectful of different viewpoints (n=55)	% (n)	
	Strongly Disagree	
	Disagree	
	Unsure	
	Agree	13% (7)
	Strongly Agree	87% (48)
We shared in decision-making processes during the summit (n=55)	% (n)	
	Strongly Disagree	
	Disagree	
	Unsure	
	Agree	9% (5)
	Strongly Agree	91% (50)

We used our meeting times effectively (n=55)	% (n)	
	Strongly Disagree	
	Disagree	
	Unsure	
	Agree	11% (6)
	Strongly Agree	89% (49)
I am leaving this meeting with a clear understanding of what's expected of me (n=55)	% (n)	
	Strongly Disagree	
	Disagree	
	Unsure	4% (2)
	Agree	16% (9)
	Strongly Agree	80% (44)

The evaluation results demonstrate that the large majority of attendees had a positive experience at the summit and feel that the event was effective in achieving its purpose.

At the end of the evaluation, participants were given space to share feedback on things they would do differently as a result of participating in the activity. Below are some of the common themes that participants identified:

Communication: Rethinking messaging and wording of health promotion, consistency in communication, and overall better promotion/encouragement to get vaccines

Screening: Promotion of testing/screening availability within community and increase in discussions regarding criticality of screening with physicians and patients

ADPH & Health Department: Increasing referrals to ADPH for health care needs, increase in awareness of ADPH resources

Vaccine and HPV Education: Increasing education on HPV vaccines at clinic visits, schools, and the community overall

Patient Interactions: Improving patient advice, education, and promotion of HPV screening and vaccination

Community Involvement: Better involvement in community outreach and promotion

Training: Improving colposcopy training

Participants expressed that future activities should include topics about breast health, treatment options and resources based on cervical biopsy results, STI prevention, colorectal cancer, hypertension, and heart disease.

IV. Conclusion

Overall, based on the evaluation results, discussions, and identified solutions, this event was successful in executing the intended aim. As evidenced by the evaluation averages, primary healthcare providers and public health leaders felt they engaged in informed, purposeful discussions that were relevant to their practice. They felt that attendees were actively involved. Finally, they felt encouraged to engage in discussions to identify barriers, facilitators, and solutions to increase the uptake of HPV vaccination, cervical cancer screening, and adherence to follow-up for abnormal results and treatment. Notably, participants indicated they left the meeting with a clear understanding of expectations—to increase HPV vaccination uptake, cervical cancer screening, and adherence to follow-up in the event of abnormal results associated with cervical cancer screening. This event was the first of its kind and provided the roadmap for a statewide action plan.

A teal circular logo containing the text 'WIPE OUT cervical cancer ALABAMA'. The words 'WIPE' and 'OUT' are in a large, bold, white, dotted font. To the right of 'OUT', the words 'cervical cancer' are in a smaller, white, italicized sans-serif font, and 'ALABAMA' is in a smaller, white, all-caps sans-serif font below it.

**WIPE
OUT** *cervical
cancer*
ALABAMA