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# HPV Vaccination in Vermont: Identifying Educational Resources for Adolescents

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# **HPV Vaccination in Vermont: Identifying Educational Resources for Adolescents**

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# S2a: Problem Identification

- This project is borne out of a conversation I had with the mother of a patient at the Community Health Centers of Burlington's (CHCB) Keeler Bay site: she told me that she couldn't convince her teenage daughter to get an human papilloma virus (HPV) vaccine because the information material that was provided was too dry and medical
  - HPV vaccine is unique in that (1) it's not a required vaccine to enter school and (2) it's given at an age where patients have more agency over their medical care, so an adolescent who doesn't want to get the shot is often able to avoid it
  - Problem: in Vermont, there's a lack of educational material aimed at young adults about the benefits of the HPV vaccine
  - Hypothesis: education aimed directly at adolescents would boost immunization rates
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# S2b: Problem Identification

- Infection with HPV is the major risk factor for developing cervical cancer
  - HPV infection can be prevented by vaccination
  - In 2013, only 46% of Vermont teenage girls received all three recommended doses of the HPV vaccination<sup>1</sup>
  - Recent research suggests that patients with knowledge about the vaccine's benefits are more likely to have initiated the vaccine series.<sup>2</sup> Education that combines expert resources and peer resources has the greatest impact on increasing vaccination rates<sup>3,4</sup>
  - According to primary care providers I spoke with, there is effectively no access to peer educational resources aimed at adolescents at primary care practices in Vermont
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# S3: Public Health Cost

- Each year in Vermont, twenty women are diagnosed with cervical cancer and six women die of cervical cancer
  - This number has been steadily decreasing since the 1990's, likely thanks to increased screening with the Pap test and HPV vaccine
  - The cost of treatment for cervical cancer ranges from \$3,807 to \$45,028 depending on cancer stage in the first six months after diagnosis. Alternatively, gynecological exam with Pap test costs about \$200<sup>5</sup>. The retail price of the series of three HPV vaccinations is under \$400<sup>6</sup>
  - The HPV vaccine is not associated with serious side effects or health risks, especially compared to the morbidity and mortality associated with genital warts and cancers caused by HPV
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# S4a: Community Perspective

- Interview #1: *Name Withheld*, PA, who works with youth at risk for homelessness at CHCB's Pearl Street Clinic
    - the major challenge in getting adolescents to return for all three HPV vaccines is getting them to “buy in” to the importance of the vaccine
    - about 10% of her patients decline the vaccine (generally because they don't like to get shots), a larger percentage of patients get the shot because it is recommended but don't engage with why it is important, and another group understands that the vaccine prevents cancer and are happy to be vaccinated
      - the last of these groups is most likely to return for all three vaccinations
    - the most powerful tool in convincing adolescents to be vaccinated is developing a strong therapeutic relationship
    - the only educational resource currently used at the Pearl Street Clinic is the CDC HPV Vaccine Information Statement<sup>7</sup>
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# S4b: Community Perspective

- Interview #2: *Name Withheld*, Chittenden County Immunization Designee
    - increasing HPV vaccination rates is a unique problem in that the vaccine is given at an age when both parents and their children are involved with the child's health care
    - parents are reluctant to support the vaccine because of the association of HPV and sex – children often merely don't want to get any more shots than are required
    - strategies: de-emphasize the sexual nature of the disease for parents; discuss the forms of the disease that can affect males (oral and anal cancers), empower young adults with respect to their health; emphasize that this is a vaccine that *prevents cancer*
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# S5: Intervention and Methodology

- summary of findings based on primary research and community interviews to be implemented
    1. the vaccine is recommended at an age when adolescents have power over their health care
    2. adolescents are more likely to engage in educational materials if they are entertaining and directed to adolescents
    3. the education most effective at increasing rates of HPV vaccination combines expert resources (e.g. information sheets from the CDC) and peer resources (e.g. videos aimed at young adults)
    4. any intervention will be more effective if done via a strong provider-patient relationship
  - plan: construct a website that contains pre-existing expert and peer resources reviewed for strength of message and accuracy of information
    - website will be directed at adolescents and, as such, be written in a conversational tone and make an attempt to fully explain any terms or concepts that might not be clear
    - as advised by *Name Withheld*, I will attempt to use strategies from advertising to hold the attention of my audience: text blocks will be short and easily digested, pictures will be large and colorful, and most of the information will be contained in videos and links to other sites
  - my work on this part of the project required (1) learning how to build a webpage with using Wordpress, (2) collecting factually accurate and entertaining educational materials, and (3) writing short and friendly text to accompany the links
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# S6: Results/Response

- [www.hpvinfovt.wordpress.com](http://www.hpvinfovt.wordpress.com)
  - I collaborated with Leah Griffiths, RN, who is the primary nurse at CHCB's Pearl Street Clinic. She counseled me on common questions patients ask when given the option of getting the HPV vaccine so that I could answer them on my website. She indicated that she would direct patients to the website if they request more information about the vaccine
  - In my final few days at CHCB I was unable to find an appropriate patient to act as a test case for my materials
  - I have sent the address of my website to a number of providers at CHCB who work with adolescents and have received positive feedback about the potential utility of this project
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# S7a: Evaluation of Efficacy

- there are two endpoints I would like to evaluate to determine the efficacy of this project
    1. whether adolescents could be convinced to engage with the material in this website
      - patients between 12 and 26 could be directed to the website after they check in for their appointment and before their name was called. During the appointment these patients could be asked whether they went to the site and if they found it helpful
      - alternatively, the website could be offered only to patients who were reluctant to get the vaccine and requested more time or information. I believe that the level of engagement with the website would be greater than with the CDC vaccine immunization sheet handed out in the office
    2. whether engagement with the website increases the chance that the patient would be willing to receive the HPV vaccine
      - it would be interesting to do a controlled trial where a number of adolescent patients presenting for preventative visits were either directed to the website or not directed to the website, then determine if there is a difference in vaccine adherence between the two groups
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# S7b: Limitations

- the recommended age for this vaccination is 11 or 12 years old, so an intervention that truly aimed to vaccinate as many patients as possible would have to be aimed at parents and well as adolescents
  - with the exception of patients at CHCB's Pearl Street clinic, CHCB appears to have a small population of patients between the ages of 10 and 22
    - this intervention may be more effective if delivered at a pediatrician's office or a college health center
  - a more effective intervention would require serious marketing and web design expertise that I am lacking
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# S8: Future Interventions

- I was unable to find any educational materials aimed specifically at Vermonters. My sense is that materials that are directed to a small group that has a positive connotation (i.e. Vermonters rather than ‘women’ or ‘adolescents’) are more effective – it would be useful to develop materials focused around Vermont-specific activities (snowboarding or hunting, for example)
  - I’d be interested in developing materials that are neither text nor video based – something like an on-line game that contains educational messages. I feel that the major barrier to educating this population is engagement. Successful public health messages should be entertaining as well as informative
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# S9: References

1. Vermont Department of Health. “Vermont Immunization Program 2013 Annual Report.” <http://healthvermont.gov/hc/imm/>
  2. Bendik, M. et al. “Knowledge, Perceptions, and Motivations Related to HPV Vaccination among College Women.” *Journal of Cancer Education* (2011) 26:459-464
  3. Hopper, S. “Effects of a Narrative HPV Vaccination Intervention Aimed at Reaching College Women: A Randomized Controlled Trial.” *Prev Sci* (2012) 13:173-182
  4. Manhart, L. et al. “HPV Vaccination among a Community Sample of Young Adult Women.” *Vaccine* 29 (2011) 5238-5244
  5. Vermont Department of Health. “Cervical Cancer in Vermont.” September 2011. [http://healthvermont.gov/prevent/cancer/cancer\\_programs.aspx](http://healthvermont.gov/prevent/cancer/cancer_programs.aspx)
  6. Centers of Disease Control and Prevention. “HPV Vaccine Information for Young Women – Fact Sheet.” <http://www.cdc.gov/std/hpv/stdfact-hpv-vaccine-young-women.htm>
  7. <http://www.cdc.gov/vaccines/hcp/vis/vis-statements/hpv-gardasil.html>
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