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# HPV Vaccine in Adolescents: How to Increase Uptake

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## Abstract

- The human papillomavirus (HPV) is a sexually transmitted virus that affects both males and females of all ages. An HPV vaccine was created to help protect against harmful infections caused by the virus.
- This literature review focuses on the relationship between the HPV vaccine and its low uptake from untoward events, misinformation surrounding the vaccine, and different education methods. PubMed, Clinical Key, and Cochrane electronic databases are used for the literature review. A comprehensive literature review was conducted, and articles utilized were based on the age of the population being 11 to 29 years old, the HPV vaccine's involvement in the article, and the article being published less than 12 years ago.
- The results concerning untoward events related to the HPV vaccine are low and misinformation is common in the news and social media. The research showed the most effective techniques for educating a parent were direct provider-parent communication and informational videos.
- Keywords:** papillomavirus infections/prevention, papillomavirus vaccines/ adverse effects, mass media, vaccination/ statistics& numerical data, health education, Gardasil 9 immunizations, adolescents, HPV immunization/ methods.

## Introduction

- Human papillomavirus has become known as one of the most common sexually transmitted infections, according to the Centers for Disease Control and Prevention (CDC).
- It is linked with cervical and vaginal cancer in females and anal cancer in both sexes. The HPV vaccine was created for adolescents to help combat the harmful effects of HPV.
- The purpose of this study is to learn the most effective way to educate adolescents and guardians about the HPV vaccine and to understand the hesitancy that surrounds the vaccine that prevents adolescents from becoming vaccinated.

## Statement of the Problem

- Today, we are experiencing a stigma attached to vaccines that has created much skepticism.
- McGhee et al. (2017) point out that the HPV vaccine has an uptake rate of as little as 12% in some states. Is this based on vaccines as a whole, or is this directly linked to this specific vaccine?
- Resolving these fears starts with figuring out the most effective way to educate patients and understanding that it will vary from patient to patient. Providers need to have resources available that provide statistics on practical techniques for educating patients about vaccines.

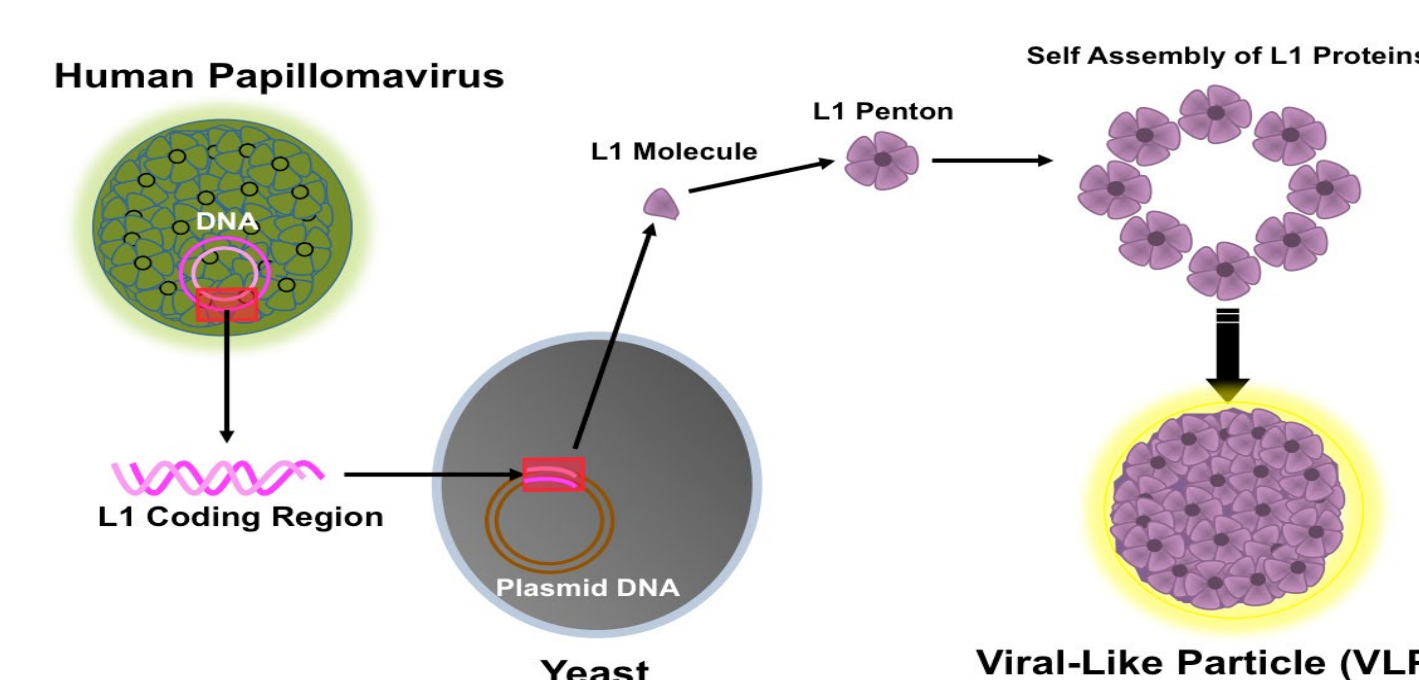


Illustration by David H. Spach, MD  
<https://www.std.uw.edu/go/pathogen-based/hpv/core-concept/all>

## Research Question

- Does direct recommendation from the provider compared to routine practice increase the number of patients vaccinated in the adolescent population?
- Does educational templates and social media advertisements compared to routine practice increase the number of patients vaccinated in the adolescent population?
- Does the usage of factual anecdotes compared to routine practice increase the number of patients vaccinated in the adolescent population?
- Does vaccination with the HPV vaccine compared to non-immunized adolescents increase the risk of untoward events in the adolescent population?

## Literature Review

### HPV Vaccination Purpose/Function

- Cuzick (2015) studied showed a 96.6% reduction in the added HPV types in Gardasil 9 compared to Gardasil.
- The reduction of infections linked to HPV types 6, 11, 16, and 18 were the same with both vaccines, 96% reduction.

### Untoward Events of the HPV Vaccine

- Guillain-Barre Syndrome (GBS) reported in five patients in the US out of 12 million injections (Douglas, 2009).
- Anaphylactic accounted for 0.2 cases per 100,000 doses (Douglas, 2009).

### Misinformation of the HPV Vaccine

- Scare tactics were used in magazines, such as: death or illness, dangerous to small children, human-made sources, and pharmaceutical gains, when writing about the HPV vaccine (Abdelmutti & Hoffman-Goetz, 2010).
- A study showed that as news coverages increased on the HPV vaccine, reported side effects increased (Faasse et al., 2017).
- Parents refused the vaccine because their child was not sexually active and that it encouraged sexual activity among adolescents (McGhee et al. 2017).
- Of the parents with fear of male infertility with the vaccine, 88% of participants lacked knowledge about HPV diseases, 72% did not feel like they had enough information about the HPV vaccine to vaccinate their child (Schuler, Hanley & Coyne-Beasley, 2014).

### Effective Techniques to Educate Patients About Vaccines

- Systematic review showed presumptive interaction had a greater outcome than participatory interaction (Connors, Slotwinski & Hodges, 2017).
- Provider-parent conversations centered around parents' concerns was met with 74% compliance in vaccinating (Connors et al., 2017).
- Increasing support for HPV vaccine by informing-educational videos had better results than educational handouts, 51.7% to 33.3% (Cory et al., 2019).
- Social media- Twitter in a year span resulted in negative information surfacing nearly as much as positive information, 9.1 vs 9.7, despite negative content account for 14% less original tweets (Ortiz, Smith & Coyne-Beasley, 2019).
- Harmful effects from HPV vaccine were 30% more likely to be found on social media as opposed to harmful diseases caused by HPV (Ortiz et al., 2019).
- 60% of HPV vaccine's discrepancy was due to social media and the other 40% due to lower socioeconomic status (Teoh, 2019).

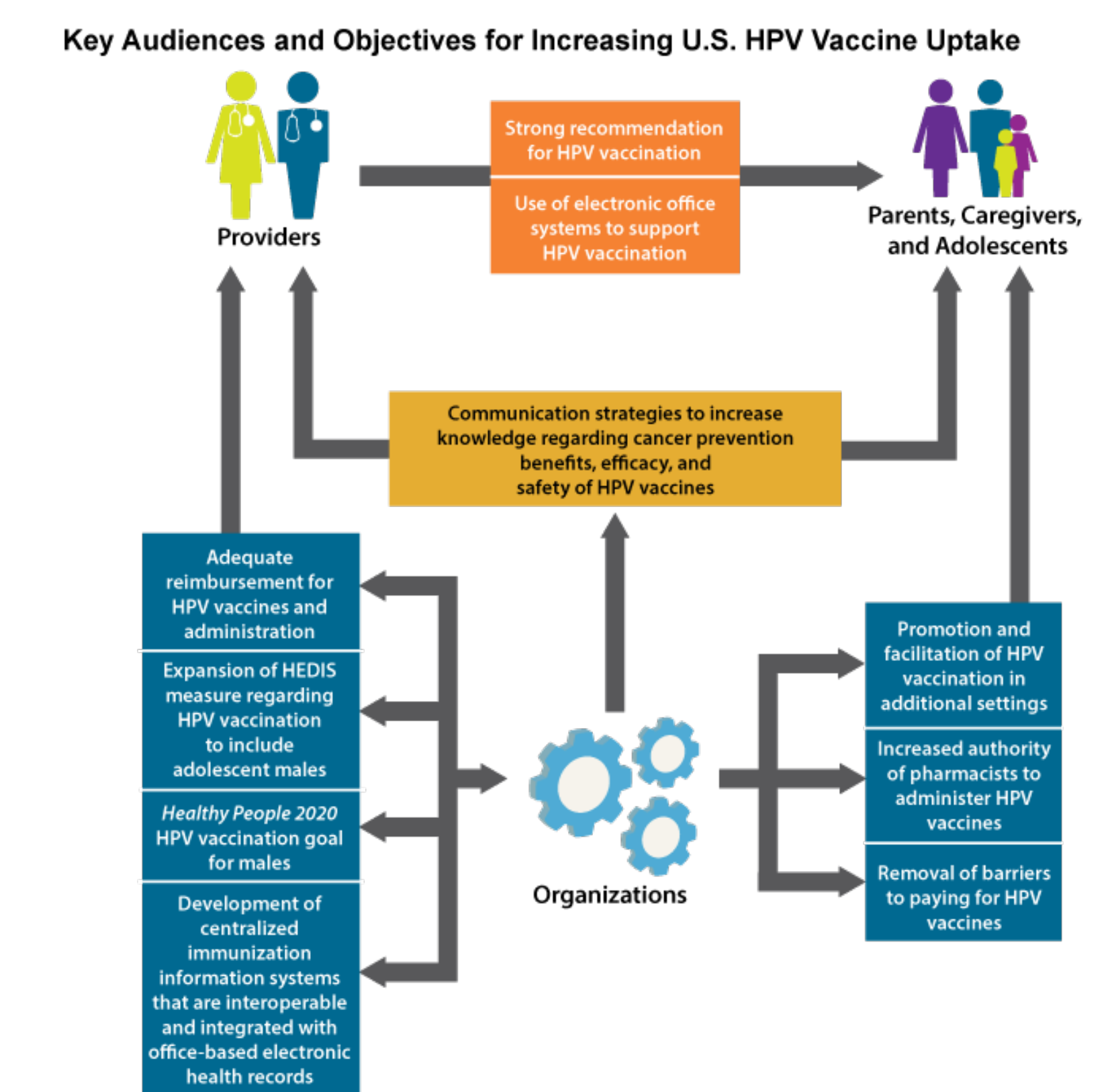
## Discussion

- Epidemiological evaluation determined the likelihood of developing GBS following HPV vaccine was equivalent to it occurring with any other vaccination (Douglas, 2009).
- When comparing magazine articles on the HPV vaccine and cervical cancer, more negativity was used, such as death, illness, and pharmaceutical gain, when discussing the HPV vaccine than cancer (Abdelmutti & Hoffman-Goetz, 2010).
- The leading cause of low uptake in males was parents lacking knowledge about the vaccine and infections linked with HPV (Schuler et al., 2014)
- Providers using layman's terms resulted in parents being more receptive to vaccine information (Connors et al., 2017).
- A confrontational standpoint from providers resulted in rejection of the vaccine (Connors et al., 2017).
- Currently more harmful effects of the HPV vaccine are likely to be found online than the harmful effects of the diseases caused by HPV (Ortiz et al., 2019).
- Social media account for the largest amount of inconsistency information spread on the HPV vaccine (Teoh, 2019).

Adverse event (out of 3.7 million injections)	Number of reported (n=1013)	Percent of total adverse events
Injection site reaction (soreness/redness)	203	20
Headache	202	20
Dizziness	156	15
Nausea	164	16
Rash	91	9
Vomiting	70	7

## Applicability to Clinical Practice

- A provider will be able to utilize this evidence-based medicine in practice to offer their patients the best treatment.
- The research I conducted supports investing the office visit time with direct provider to parent education which emphasizes understanding and empathy of parental concerns but provides solid clinical evidence.
- Educational videos have shown promising results regarding improving the uptake of the HPV vaccine as well.
- Further research and media attention should be conducted to address the negative fabrications related to the vaccine.



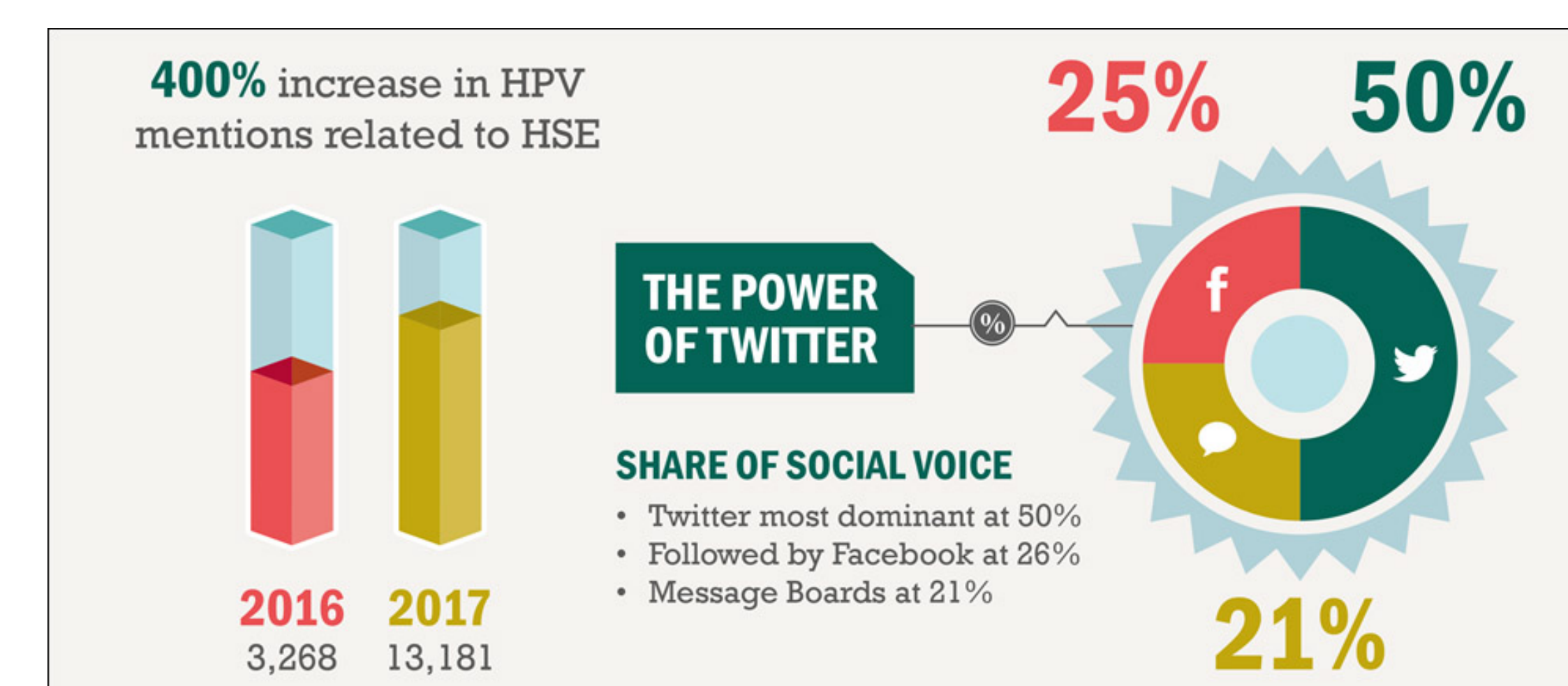
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<https://www.hse.ie/eng/about/who/communications/digital/blog/how-we-used-social-media-to-increase-hpv-vaccination-rates.html>