

# Vaccination against human papilloma virus in the light of quaternary prevention

Vacunación contra el virus del papiloma humano a la luz de la prevención cuaternaria

*Vacinação contra o vírus do papiloma humano à luz da prevenção quaternária*

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## Abstract

In spite of the demonstrated benefits, the question of HPV massive vaccination is still subject to intense discussions and controversies. The protection against cancer is still unproven and need more time to be accurate about the quantification of the decrease in cervical cancer. The analysis of HPV vaccine relevance is very complex due to several overlapped levels to be considered. The authors analyze many of the ethical, sociological, economic, political and finally scientific issues involved. The population trust in vaccines has been affected owing to dubious practices of many pharmaceutical companies. Faced with this manipulation of information on a worldwide scale, general practitioners have organized themselves to fight this uncertainty. Quaternary prevention, a concept supported by the World Organization of Family doctors, advocates the application of ethically acceptable procedures in health care. This opinion article addresses some of the multiple dimensions involved to encourage reflection on this issue.

**Keywords:** Papillomavirus Vaccines; Primary Prevention; Ethics, Clinical; Quaternary Prevention

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## Resumen

A pesar de los beneficios demostrados, la cuestión de la vacunación masiva contra el VPH todavía está sujeta a intensas discusiones y controversias. La protección contra el cáncer aún no está probada y necesita más tiempo para la precisión sobre la cuantificación de la disminución del cáncer cervical. El análisis de la relevancia de la vacuna contra el VPH es muy complejo debido a varios niveles superpuestos que se deben considerar. Los autores analizan muchas de las cuestiones éticas, sociológicas, económicas, políticas y finalmente científicas involucradas en este análisis. La confianza de la población en las vacunas se ha visto afectada debido a prácticas dudosas de muchas compañías farmacéuticas. Ante esta manipulación de información a escala mundial, los médicos generales, de familia y comunidad, se han organizado para luchar contra la incertidumbre. La prevención cuaternaria, un concepto apoyado por la Organización Mundial de Médicos de Familia, aboga por la aplicación de procedimientos éticamente aceptables en la atención médica. Este artículo de opinión aborda algunas de las múltiples dimensiones involucradas para favorecer la reflexión sobre este tema.

**Palabras clave:** Vacunas contra Papillomavirus; Prevención Primaria; Ética Clínica; Prevención Cuaternaria

## Resumo

Apesar dos benefícios demonstrados, a questão da vacinação massiva contra o HPV ainda está sujeita a intensas discussões e controvérsias. A proteção contra o câncer ainda não está comprovada e precisa de mais tempo para ser precisa sobre a quantificação da redução do câncer do colo do útero. A análise da relevância da vacina contra o HPV é muito complexa devido a vários níveis sobrepostos que devem ser considerados. Os autores analisam muitas das questões éticas, sociológicas, econômicas, políticas e, finalmente, científicas envolvidas nesta análise. A confiança da população nas vacinas foi afetada devido às práticas duvidosas de muitas empresas farmacêuticas. Diante dessa manipulação de informações em escala global, clínicos gerais, família e comunidade se organizaram para lutar contra a incerteza. A prevenção quaternária, conceito apoiado pela Organização Mundial de Médicos de Família, defende a aplicação de procedimentos eticamente aceitáveis nos cuidados médicos. Este artigo de opinião aborda algumas das múltiplas dimensões envolvidas para incentivar a reflexão sobre esta questão.

**Palavras-chave:** Vacinas contra Papillomavirus; Prevenção Primária; Ética Clínica; Prevenção Quaternária

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## Immunization and trust

The question of vaccination against the papilloma virus is for the moment the subject of intense discussions. One might think at first sight that this is a purely medical, and thus, a scientific question. However, it's not. We will see that the question or problem is first sociological, then economic, political and finally scientific. This question is so acute that is called the first vaccine war.<sup>1,2</sup> The aim is not to detail the recent history of the vaccine, but to recall some interesting facts.

The individual and population protection has always been one of the concerns of medicine. As doctors grapple mainly with fighting time, arriving before an event is the object of prevention, even though patients are not yet sick or are not yet affected by potential harm. We are talking about primary prevention. Vaccinations and the discovery of water hygiene have been among the most important historical discoveries against events that have disrupted the life expectancy of humans. However, it is the medical nature of vaccinations, their protective and preventive aspects what have affected the population the most. In turn, this kind of mass population requires significant coverage rates. The question was to protect a group of people, not necessarily individuals. Therefore, we were focusing on protection from a public health perspective. The disappearance of smallpox, the control of poliomyelitis or whooping cough was remarkable events, and the term vaccination was passed in culture under the symbolic equivalent of protection.

Vaccination does not concern disease treatment but instead aims to protect against the risk of disease before fruition. Controlled risk protection is a secular human symbolic activity<sup>3</sup> and for people, beliefs are often more important than facts. Risk and trust are relatives in the symbolic field, and it is not surprising to find that confidence in immunization varies related to the educational background of populations.<sup>4</sup> Thus, at

the beginning of the twentieth century began to consolidate confidence in vaccines sustained by the practice of mass vaccination against communicable diseases with immediate and visible effects on population health. Based on these historical experiments, the population's potential confidence in vaccines is supported.

### **What is at stake for humans in HPV issues?**

In a meta-analysis realized in 2010<sup>5</sup> shows that the HPV prevalence was higher in less developed countries (42.2%) than in more developed regions (22.6%) with HPV 16 (9.5%) and 18 (6.2%) to be the prevalent type, regardless of the region of study. In Argentina, nearly one in three women (27%) are infected. Human papillomavirus (HPV) infection is now recognized as the leading cause, but not the only cause, for the development of cervical cancer. However, not all infected women are affected. Most HPV infections in young people are of short-lived, less than 9 months.<sup>6</sup> We are addressing here the problem of *Papillomavirus Vaccines* of which the Medical subject heading scope in Medline note: *Vaccines or candidate vaccines used to prevent papillomavirus infections. These vaccines, which aim to reduce the incidence of uterine cervical neoplasms, are therefore often considered cancer vaccines, not infection vaccines.* This semantic shift towards *cancer vaccine* is unexpected, as nobody has been able to verify the suggested capacity of the HPV vaccine to protect against cervical cancer so far. A cohort study with 14 years of follow-up in the Netherlands shows safety and efficiency in applying screenings programs with new techniques for cervical cancer and HPV detection, with intervals even greater than 5 years, when risk stratification strategies are implemented.<sup>7</sup> In this way all cervical or other cancers, related to infections by HPV: i) is linked to HPV infections that often show spontaneous resolution ii) screening techniques every five years, along with HPV detection are very efficient if high-risk populations are selected.

### **New strategies in health care market**

In the fifties, the clinical trial appeared. Clinical trials have been important for the drug industry because for the first-time drugs could be paired with risk factors.<sup>8</sup> The rise of the pharmaceutical industry cannot be understood without taking into account the profound transformation it has achieved; turning risk into disease meant opening the symbolic world of protection. At the same time, we have seen the throbbing question of lipid "diseases", of hypertension "disease", of osteoporosis "disease", as well as the transformation of a public health problem into an individual health problem. Vaccination was no longer a matter of population but of the individual to be protected. In the case of HPV, the symbolic cocktail is particularly powerful. As the claim is that HPV vaccine protects against cancer - fact still unproven -, the protection against a ubiquitous virus almost saprophyte of the man but potentially dangerous, is now becoming a mix between protection, sex, risk and death- themes of the greatest dramas of humanity.

An important fact is that the two vaccines are extremely expensive and their use implies severe cuts in other health budgets for low economic profile countries. Glaxo Smith Kline (GSK) produces Cervarix. Merck Sharp & Dohme (MSD), known as Merck & Co. in the United States, produces Gardasil. It is worth noting that those two firms are in good ranking in the list of the largest pharmaceutical settlements- including both civil settlement and criminal fines in the US.<sup>9</sup> In this case, criminal means Off-label promotion or failure to disclose safety data.<sup>10</sup>

## Losing trust

There is so much information over the dubious practices of pharmaceutical firms, there is so many authors who have published on this subject that one cannot believe that these companies meet a verifiable work ethic.<sup>11-16</sup> Many authors have denounced the ethical bankruptcy of most pharmaceutical companies. The means implemented are now well known; information retention, ghostwriting, paid publications, fake publications, data manipulation, no reporting of serious adverse effects, pressure on physicians and prescribers, manipulation of patient associations, etc. The implications on confidence, as value, are so severe that the very concept of vaccination has been seriously distorted in the general population.

Based on the truncated analysis anti-vaccination movements have emerged. Since the population does not differentiate between conventional vaccines and new marketing products, outbreaks of highly transmissible disease epidemics such as polio or diphtheria can be expected. Moreover, it seems obvious that the pressures and political lobbying are considerable as some countries have even made HPV vaccination mandatory. Finally, many adverse effects have been suspected and are suspected in the post-marketing data available.<sup>17</sup> This has led Japan to impose a moratorium on the use of these products.<sup>18-20</sup>

## A new network of knowledge dissemination

Faced with this large-scale manipulation of information, family and community (MFC) general practitioners (GPs), sometimes referred to as referring physicians, have organized to fight this. Quaternary prevention, a concept endorsed by the World Organization of Family Physicians (<http://www.globalfamilydoctor.com/>), advocates the application of ethically acceptable procedures in health care.<sup>21</sup>

The quaternary prevention movement has organized to gather the information material to share in its network of dedicated professionals. Members of the WONCA quaternary prevention special interest group are often digital natives, and use electronic media for quick exchanges, emails, mailing lists, and WhatsApp. When intense discussions arise on sensitive topics that give rise to relevant questions, this information is collected, organized, classified, published and updated on the websites such as *NotasL@cas/M@dNotes*, which is edited by one of the authors (MP).<sup>22</sup> In this way, GPs, often on the forefront of advising patients, can easily obtain the precise information that allows them to make a decision guided by knowledge rather than decisions manipulated by biased information.

We will not rewrite the numerous, easily readable files available online over this HPV issue on <https://tinyurl.com/notaslocas-HPV>.<sup>23</sup>

From our point of view, the question of vaccination against the papillomavirus is, for the time being, subject of intense discussions and controversies.

You can think in a simple way, that it is a purely medical and therefore scientific issue. However, it's not. In this discussion, a number of levels and possible points of analysis are overlapped: sociological, economic, political and finally scientific. Our recommendations on vaccination against HPV are in line with those of the Cochrane Nordic Center (2016).<sup>24</sup> Whether at the individual or population level, the usefulness of the vaccine against the papillomavirus is questionable, its relative effectiveness, its minimum efficiency and, above all, the trust of people and many professionals, has been betrayed by non-transparent practices linked to the commercialization of drugs. Investing funds to address health inequalities is a potentially

preferable, ethically advisable and socially respectful way of proceeding. Scientific societies and family and community physicians<sup>25</sup> must inform in a responsible manner so that users are in a better position to make decisions according to their knowledge and understanding and within the framework of their scale of values and that of the society to which they belong.

## Authors' Contributions

Marc Jamouille (MJ) and Miguel Pizzanelli (MP) are leading Quaternary Prevention perspective and approach in Iberoamerica and globally. The original idea of this opinion article was designed by Marc Jamouille proposing a critical view on HPV vaccination and dubious practices affecting trust in vaccines. Preliminary manuscript MJ. Bibliographic review MP. Final revision and conclusions MJ and MP.

## Conflict of interest

None declared.

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