

SOCIAL NETWORK SIMULATION AND MINING SOCIAL MEDIA TO ADVANCE  
EPIDEMIOLOGY

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Traditional Public Health decision-support can benefit from the Web and social media revolution. This dissertation presents approaches to mining social media benefiting public health epidemiology. Through discovery and analysis of trends in Influenza related blogs, a correlation to Centers for Disease Control and Prevention (CDC) influenza-like-illness patient reporting at sentinel health-care providers is verified. A second approach considers personal beliefs of vaccination in social media. A vaccine for human papillomavirus (HPV) was approved by the Food and Drug Administration in May 2006. The virus is present in nearly all cervical cancers and implicated in many throat and oral cancers. Results from automatic sentiment classification of HPV vaccination beliefs are presented which will enable more accurate prediction of the vaccine's population-level impact. Two epidemic models are introduced that embody the intimate social networks related to HPV transmission. Ultimately, aggregating these methodologies with epidemic and social network modeling facilitate effective development of strategies for targeted interventions.

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## CHAPTER 1

### INTRODUCTION

#### 1.1. Introduction

Epidemics of infectious diseases have plagued humankind since historical times. There are accounts of epidemics dating back to the times of Hippocrates (459377 B.C.) and the ancient Greeks (7). Fourteenth century Europe lost a quarter of its 100 million people to the Black Death. The fall of the Aztecs empire in 1521 was due to smallpox that eradicated half of its  $3 \frac{1}{2}$  million population. The pandemic influenza of 1918 caused over 20 million excess deaths in 12 months. The severe acute respiratory syndrome (SARS) outbreak of 2003 highlighted the rapid spread of an epidemic at the global level. The outbreak, emanating from a small Guangzhou province in China, spread around the world requiring a concerted response from public health administrations around the world and the World Health Organization (WHO) to curtail the epidemic (54). In April 2009 an outbreak of a novel strain of influenza A (H1N1), tentatively named “swine flu,” was identified in a child at an armed forces military based located in California, USA. It is believed the virus originated in Mexico and at the time of this publication is a global concern as the southern hemisphere and South America enter the winter season. The WHO and Centers for Disease Control and Prevention (CDC) (23) actively engage in worldwide surveillance of infectious diseases, and prioritize prevention and control measures at the root cause of epidemics. Research presented in this dissertation outlines models to monitor disease outbreaks, model disease transmission and measure intervention impact.

With limited funding and resources available to help prevent infectious disease, public health professionals need tools to facilitate decision making regarding where the most effective measures would be taken. Based on collected data and statistical analysis, it is

evident that certain demographic groups are at higher risk for contracting certain sexually transmitted diseases and infections. For example, previous research has indicated specific achieved levels of education have a positive correlation with higher incidence of HIV/AIDS infection (74). This type of understanding, when applied to a computational social model, would allow the individual within the public health to model an awareness or educational campaign to the population with the greatest risk factors and to predict the potential impact of future infection on this target group.

Sexually transmitted diseases and infections are a significant and increasing threat among both developed and developing countries around the world, causing varying degrees of mortality and morbidity in all populations (31). The rates of prevalence of curable sexually transmitted diseases and infections are highest among the most developed countries, with a quarter of these conditions occurring within the 13-19 age range (33). The responsibility of halting the progression of these conditions lies upon the shoulders of professionals within the public health. In order to properly and effectively use funding and resources, these individuals must have reliable tools to help predict the most appropriate means of intervention strategies. Recently, human papilloma virus (HPV) has been implicated to cause several oral and throat cancers (93) and it is established that more than 90% of cervical cancers contain HPV DNA (50). In the United States (US), 13,000 women are diagnosed with cervical dysplasia and 5,000 die annually and by the age 50, 80% of women will have acquired genital HPV infection. Currently, 20 million people are infected with HPV in the U.S. with 5.5 million new cases annually (78). Due to the health care and human costs associated with this virus, it is vital to have known impact of vaccination strategies.

The fusion of complex network analysis, health informatics and computational linguistics to unrelated disciplines such as sociology, economics and public health is broadening interdisciplinary participation of scientific collaborative research. New hybrid approaches composed of integral theories and practices from these areas creates a synergy. Thereby, enabling discovery and understanding on how communications, information, networks and

community structure effect population health. As a consequence of the web and social media revolution, a vast resource of human-generated content is publicly available. This dissertation leverages web and social media content to advance public health epidemiology through improving disease surveillance and increasing socio-behavioral knowledge inputs to epidemic models. Epidemic models are introduced and simulations are validated against existing models and data available on-line in social media. The broader impact of this dissertation is that it explicitly defines techniques and methodologies advancing the role of computing in public health decision support.

## 1.2. Outline

Public health professionals require computational support to study disease outbreak dynamics and to facilitate policy and decision-making. Modeling disease outbreaks in large realistic populations is a data-intensive task that requires tremendous computational resources. In Chapter 2 a framework is outlined created from multiple source and computational modules to evaluate what-if scenarios and quantify public health actions.

Methodology to monitor trends in population health via mining web and social media is presented in Chapter 3. Through discovery and verification of trends in influenza related blogs a correlation to CDC influenza-like-illness (ILI) patient reporting at sentinel health-care providers is verified. Additionally, categories, frequency and influenza-post persistence qualitatively assist ILI trend identification in blogs. Strongly connected communities are evaluated and influential bloggers identified that should be part of an web and social media (WSM) outbreak response. This chapter ends with approaches to expand ILI-trend identification and an approach to create an integrated public health and WSM community intervention campaign. Next, Section 3.4 takes a first step towards predicting the effect of personal beliefs on the spread of disease. Web and social media are mined to retrieve blog posts mentioning vaccination against HPV. Two months of these blog posts (August and September 2008) are manually labeled as objective, or subjective (and corresponding negative or positive polarity). A machine learning sentiment classifier is trained with the positive

and negative subjective posts. Each post from October 1 2008 to the end of February 2009 that mention HPV vaccination is labeled by the supervised ML classifier. The magnitude of vaccination beliefs is predicted and knowledge garnered from this analysis is made available as additional features to infectious disease modeling and simulation.

Sexually transmitted diseases and infections are, by definition, transferred among intimate social settings. Although the circumstances under which these social settings are established and maintained may vary, the common prerequisite remains an intimate level of social atmosphere. For this reason, the development of sexually transmitted disease mathematical and computational models must utilize dynamic and evolving social network simulation. Recently, HPV has been implicated to cause several throat and oral cancers and HPV is established to cause most cervical cancers. A HPV vaccine has been proven successful to reduce infection incidence in FDA clinical trials and it is currently available in the United States. Current intervention policy targets adolescent females for vaccination; however, the expansion of suggested guidelines may extend to other age groups and males as well. With this in mind, Chapter 4 outlines two models to simulate infectious disease transmission, evaluate intervention strategies and analyze the impact of personal beliefs on the prevalence of disease. The first model is a discrete-time model to facilitate predicting impact on the reduction of HPV prevalence due to arbitrary age and gender targeted vaccination schemes. The second model is a simulation framework : Dynamic Social Network of Intimate Contacts (DynSNIC), a computational simulator created to embody the intimate dynamic and evolving social networks related to the transmission of sexually transmitted diseases and infections. DynSNICs utilization by health professionals will facilitate evaluation of targeted intervention strategies and public health policies.

Public health professionals often have limited budgets and resources must be specifically tailored to achieve maximum results. The utilization of computational social networking tools would allow for those within the public health to anticipate the impact of community specific predictions, and tailor awareness, educational, intervention, and prophylactic

programs for the greatest impact within their population. Consider a network of social interactions and communication links whose nodes are the family unit, local health departments, clinics, Web and social media (WSM) and main stream media (MSM); modeling what-if scenarios using simulation frameworks, WSM and public health data analysis will increase public health response times and decrease negative impacts of a serious infectious disease outbreak.

## CHAPTER 2

### COMPUTATIONAL FRAMEWORK TO STUDY PUBLIC HEALTH EPIDEMIOLOGY

Emerging and re-emerging diseases and the necessity to prepare for disaster in the wake of bioterrorism raise complex issues for Public health in general and epidemiologists in particular. Public health professionals require computational support to study the dynamics of disease outbreaks and to facilitate policy and decision-making under uncertainty to allocate limited public health resources.

This chapter addresses these requirements through research and development of an integrative computational framework for modeling and simulating infectious disease outbreaks in a geographic region that result from person-to-person contacts. This modeling paradigm is comprised of stochastic simulation, utilizing information on regional demographics, geography, disease specific parameters, and social behavioral factors. The dynamics of an epidemic are a function of various factors including demographics, disease characteristics, and specific interventions. This framework facilitates the study of emerging and re-emerging diseases under presumed changing regional demographics or modified disease parameters. The size of the population together with the complex interactions resulting from a multivariate parameter space, necessitates the design of new modeling approaches that can deal efficiently with the intrinsic data size and complexity.

#### 2.1. Disease Modeling Paradigms

With the ever-present risk of infectious disease outbreaks, it has become imperative to develop new methodologies that facilitate the preparedness and training of public health professionals. Recent examples of epidemics, possibly pandemic in nature, include SARS and Avian Influenza. Further, the threat of bio-emergencies and bio-terrorism forces epidemiologists to develop disaster preparedness plans that outline explicit responses to possible



disease outbreaks. Newly emerging or re-emerging infectious diseases continue to occur (54), some diseases have changed their appearance, some have become resistant to drug treatment, while others are so new that no previous outbreaks have ever been studied.

Medical research has enhanced understanding of disease characteristics in an individual. For example, the epidemiologic stages of influenza as described by latent period, infectious period, and recovery period are well known (13; 25). So are the symptomatic stages of influenza (i.e., incubation, the period until symptoms occur) as shown in Fig. 2.1. The manifestation and spread of many infectious diseases in the population remain elusive and are dependent on socio-behavioral interaction patterns and population dynamics.

Most mathematical models are based on the interaction principles between groups of susceptible(S), exposed(E)/infective(I), and recovered/removed(R) individuals, i.e., the SIR/SEIR model. Susceptibles are members of a population who can be infected by the disease under study. Infectives are individuals who have been infected and are infectious. Removals include individuals that are incapable of transmitting the infection, and are either recovering, fully recovered or have expired from the disease. In complex models, the removals who recover may revert to susceptibles, as in the susceptibles-infectives-susceptibles (SIS) model, if the exposure to the disease does not result in lifelong immunity. The Kermack-McKendrick threshold theorem (7) is the basis for the SIR model. A continuous influx of susceptibles is a requisite for sustained infection in a population. The model is based on the presumption of a closed homogeneous population, assuming that the epidemic spreads rapidly enough that the changes brought in by births, deaths, migration and demographic are negligible (5). For example, the spatial and temporal correlation of influenza epidemics in the United States, France, and Australia from 1972 to 1997 has been analyzed using the SIR model (87). The results indicate a high correlation between United States and France, but irregularity in the patterns between Australia and the other two countries. Geography, demography, cultural diversity and the resulting varied socio-behavioral interactions are highlighted as the reasons for discrepancies and call for computational modeling for further investigation.

The SIR model provides a simple framework to represent the spread of a disease. However, it does not provide sufficiently accurate insight in the composition of an epidemic to be used as a policy and planning tool for public health resource allocation. The SIR model does not take into account the geography or the spatial dimensions of a region, i.e., it does not express the fact that the probabilities of contacts may be distance dependent. Further, the spread of a disease may depend on the specific spatial parameters and demographics of a region. While the SIR model could potentially be extended to include geography and demographics this would drastically increase its intrinsic complexity, thus rendering the model computationally infeasible.

## 2.2. Towards Computational Epidemiology

To study the intricacies of disease dynamics in a specific population, statistical and mathematical models of infectious disease epidemics have been developed. Recently, some computational disease models have emerged, which facilitate the simulation and investigation of different disease characteristics. These include mathematical models that exploit the susceptibles-infectives-removals (SIR) paradigm, computational approaches using cellular automata (CA), hybrid approaches such as agent-based models in which interactions are based on Social Networks, and statistical methods, e.g. Bayesian reasoning (1; 19; 20; 38; 81).

Cellular automata (CA) have been used for several decades for computational models (42). A two dimensional automaton is used in epidemic models utilizing cellular automata (2; 42; 80; 83). Each cell may represent an individual or a sub-population and is

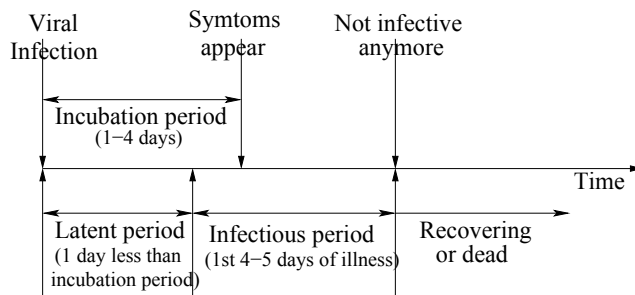


FIGURE 2.1. Influenza infection timeline.

characterized with state and likelihood risks for exposure and contracting the disease. The disease progression is studied through its diffusion across the neighboring cells. The earliest example of use of cellular automata is Bailey's lattice model (8) for the spread of diseases from micro-level interactions. Di Stefano *et al.* have developed a cellular automata model to analyze the spread of epidemics of infectious diseases, but it does not consider the critical factor of an infection time-line (83). Fu has used stochastic cellular automata to model epidemic outbreaks that take into account the spatial heterogeneities (41; 42). Situngkir has developed a dynamic model of spatial epidemiology to study avian influenza disease in Indonesia and uses cellular automata for computing analysis (80). Naive cellular automata are impeded by a limited neighborhood, and the social interactions based on demographics are not readily incorporated. Mikler *et al.* have introduced the global stochastic cellular automata paradigm, addressing the issue of neighborhood saturation in a classical CA (68).

Spatially delineated regions can be constructed using agent-based approaches, in which each individual is represented by an autonomous agent (67). Larger models with millions of agents necessitate the use of computing clusters or grid computing that can provide the necessary computational power. The parameters that control interactions among individuals are generally pre-determined through social science research where a population's real-world mixing patterns are studied. Barret et al. (12) have used this approach in EpiSimdemics, an algorithm for simulating epidemics in large social networks. The agent based model is then used to understand the progression of diseases in a simulated agent society by observing the emergent behavior of the epidemic.

Sexually transmitted diseases and infections are a significant and increasing threat among both developed and developing countries around the world, causing varying degrees of mortality and morbidity in all populations (31). The rates of prevalence of curable sexually transmitted diseases and infections are highest among the most developed countries, with a quarter of these conditions occurring within the 13-19 age range (33). The responsibility of halting the dissemination of these conditions lies upon the shoulders of professionals within

the public health industry. In order to properly and effectively use funding and resources, these individuals must have reliable tools to help predict the most appropriate means of intervention strategies. Recently, human papilloma virus has been implicated to cause several oral and throat cancers (93) and it is established that more than 90% of cervical cancers contain human papilloma virus DNA (50). In the United States, 13,000 women are diagnosed with cervical dysplasia and 5,000 die annually and by the age 50, 80% of women will have acquired genital HPV infection. Currently, 20 million people are infected with HPV in the US with 5.5 million new cases annually (78). Due to the health care and human costs associated with this virus, it is vital to have known impact of vaccination strategies

Modelling sexually transmitted diseases with differential equations has been developed and incorporates sexual activity classes with broad population interaction (44; 3). Markov models have been developed that are capable of simulating the natural history of HPV and type specific stages of cervical carcinogenesis (49; 50). Improved Markov models simulate high-and-low risk HPV infection. They are capable simulating non-persist and persistent HPV infections that leads to cervical carcinogenesis (60). Cost-effectiveness analysis has been performed on the benefits of a HPV vaccine implementing decision and Markov models (78). The differential equation and Markov models ignore specific demographics and approach modeling at population-level (43; 55). Additionally, models have been developed to investigate ethnic inequalities in the incidence of sexually transmitted infections (84).

A population's mixing patterns and social interactions can be modeled by social networks, which have become increasingly important in our understanding of complex networks and the epidemic spread of diseases. A social network is a social structure made of nodes each representing individuals or organizations. Links indicate the ways in which individuals or groups are connected through various social familiarities ranging from casual acquaintance to close familial bonds. Much research has been conducted in the past half century on social networks; however, only in the last decade have researchers in a variety of domains (i.e. computer scientists, physicists, mathematicians) become interested in this field. Complex

networks are comprised of lattice-type, small-world and scale-free network structures. Social networks have many of the same properties as other real world networks such as degree distribution. However, one of the large differences between a social network and other complex networks (i.e. topology of the Internet) is network transitivity (9). The clustering in social networks occur with greater frequency than pure chance, or more casually, "party people party together." Examples of social networks include scientific collaboration networks, friendship networks in the blogosphere, and networks of human contacts (9; 46; 65).

Applying methods in social network analysis to public health and epidemiology has grown in the recent years. Some of these methods include agent-based simulation to model the spread of infection on a population (35) and targeted social distancing to mitigate influenza attack rates. An interesting extension to the work by Glass *et al.* would be to not only mitigate attack rate by targeted social distancing but to borrow the concept of min-cuts from graph theory to determine an epidemic distance in the social network and target responses in those areas with maximum flow of infection (48) . Applying social network analysis to problems in population-health has many exciting open research opportunities in the future.

### 2.3. The Computational Framework

Modeling disease outbreaks in large realistic populations is a data-intensive task that requires tremendous computational resources. This necessitates the design of new methodologies that facilitate simulation of interactions among individuals or between individuals and the environment.

As the framework's ultimate purpose is to facilitate what-if-analyses that will allow the quantification of possible public health actions when preparing for future infectious disease outbreaks, it is essential to recognize that the dynamics of an epidemic is tightly coupled with the geography and demographics. Hence, results from multiple simulations must be archived and made available for experimental analysis. Demographic and behavioral differences in the population imply that simulation results that have been obtained by analyzing a disease outbreak in one geographic location may not be readily applicable to define control and

prevention strategies in other regions. Similarly, one must recognize that comparison of the dynamics, morbidity, and mortality of two or more past epidemics for the purpose of deciding control measures must take demographic changes during these years into consideration. This directly affects the validation of models and corresponding simulations results and limits the use of historical data for validation purposes.

The framework modules hinge on the principle of disease transmission through *direct contacts* among individuals. This approach is reflected in most mathematical and computational models, including agent-based models, social networks, and the SIR paradigm. While the concept of contact modeling seems intuitive, one must carefully consider what constitutes a contact when modeling epidemics. Specifically, one must acknowledge that contacts necessary to transmit different types of diseases differ greatly. For instance, pathogens of influenza, syphilis, and athlete's foot utilize completely different modes of transmission, thereby defining the type of contact necessary to spread the disease. Even within one class of infectious diseases, such as airborne diseases, the interpretation of contact may not be unique.

### 2.3.1. Demographic-Affinity Contact Generation

As pointed out above, disease dynamics is a function of a multiplicity of demographic, geographic, and social behavioral characteristics of the region or population that is to be modeled. As an example, we might consider the age of a person as one of the parameters that can determine how this individual may interact with others. Many other demographic parameters may prove to be pertinent for specific diseases and thus necessitate the design and implementation of an interface to a query engine that when presented with the description of an individual  $p_i \in \mathcal{P}$  will return an individual  $p_j \in \mathcal{P}$  to form the contact pair  $(p_i, p_j)$ . The functionality of structuring the population based on demographic and geographic characteristics in the module that generates the *Social Networks*. In general, it is infeasible to determine precisely the social interaction and behaviors of every individual in a large population. While for small social settings, such as families and schools it might be possible to

identify relationships that exist between individuals (see (48)), for large populations, such relationship patterns are of stochastic nature and are based on behaviors that have been observed or attributed to demographic subgroups based on characteristics such as age, income, ethnicity etc., as described in (12; 28).

Demographic similarity can either strengthen or weaken the probability of connection, considering assortative to random mixing. Many scoring metrics exist to quantify similarity between two objects; for example, hamming distance, cosine similarity and feature frequency proportions (53; 57; 77). Our dynamic social network contact simulator described (DynSNIC) in Corley *et al.* considers social contacts in romantic and intimate settings (29). DynSNIC takes a coarse first cut at scoring the likelihood of mixing ( $p_{v_m, v_f}(\textit{mixing})$ ) between two individuals, using the unweighted cosine similarity of both vertices's demographic feature vector. When selecting an intimate partner in actual social settings, it is likely that certain demographic features provide stronger, weaker, or even negative attraction (i.e. education, income, age), which would lead to a weighted function. Currently, the simplest (unweighted) *flavor* of the similarity scoring metrics is implemented for our simulations.

### 2.3.2. Integrating Results from National Surveys

It is imperative for the prediction of how an epidemic manifests in a given population to extract and discriminate specific interaction characteristics and possible risk behavior, which may affect the contact patterns of individuals or groups. Specific behaviors will determine the weight of demographic parameters in establishing the affinity between individuals. This information is captured in the national surveys, such as Youth Risk Behavior Survey (YRBS), Behavioral Risk Factor Survey (BRFS), National Health Interview Survey (NHIS), and the Current Population Survey (CPS). The findings from these surveys help characterize the context in which disease can propagate or in which health related risk behaviors develop (32; 17; 85; 86). The decision to integrate findings from national surveys that imply behavioral tendencies is driven by the need to increase the accuracy with which the dynamics

or progression of a disease in a geographic region can be simulated. Individuals' characteristics such as age, ethnicity, socioeconomic status, and gender are leading to differentiated behaviors that can manifest themselves in different ways, including the probable interaction distances, the places where contacts take place, and the types of contacts that are most likely to occur. Gender and age of a person are two factors that play a crucial role in dictating networks and interactions. Social practices within a society dictate gender roles that are different in significant ways and organize relations of inequality on the basis of those differences (75). Social gender roles will certainly dictate the frequency and type of contacts and must therefore be considered in all the functional computational modules.

The CDC's Behavioral Risk Factor Surveillance System (BRFSS) collects data on adults across all 50 states on a wide range of behaviors that affect their health. The primary focus of these surveys has been on behaviors and conditions that are linked with the leading causes of death (e.g., heart disease, cancer) and other important health related problems and issues. These behaviors and conditions include: Not getting enough physical activity; Being overweight; Using tobacco and alcohol; Not receiving preventive medical care, such as flu shots, mammograms, Pap smears, and colorectal cancer screening tests. The Youth Risk Behavior Surveillance System (YRBSS) focuses on priority health-risk behaviors and the prevalence of obesity and asthma among high school youth. Specifically, it monitors six categories of priority health-risk behaviors including behaviors that contribute to unintentional injuries and violence; tobacco, alcohol and other drug use; sexual behaviors that are likely to increase the risk of contracting sexually transmitted diseases (STDs) or human immunodeficiency virus (HIV) infection; unhealthy dietary behaviors; and physical inactivity.

By utilizing these national data in computational epidemiology, we can detect the similarities between neighborhood profiles as well as the specifics of each one. Further, the likelihood of disease transmission may change as a function of individuals' health status and health practices.



### 2.3.3. Computational Resource Demand

Modeling infectious disease epidemics is a computationally complex and data intensive endeavor. The execution of the computational disease models involve the generation of contact pairs based on an implicit probability distribution that is imposed by the affinity clustering or social network. In order to efficiently compute the contact pairs, the entire population together with its corresponding affinity structure must be accessible during model execution.

The Center for Computational Epidemiology and Risk Analysis (CeCERA) has recently installed a 64 core computing cluster with 256 GB of memory and a 60 TB RAID. This cluster infrastructure is dedicated to research projects in computational epidemiology and provides the necessary environment to explore different methodologies for utilizing a high-performance computing infrastructure to deal with the intrinsic complexity of our framework modules. As the size of the simulated population increases, the computational requirements are likely to outpace the available computational resources resulting in computational demands of hundred, or even thousands of cores, as described in (12). The fact that disease outbreaks are stochastic in nature warrants a Monte Carlo approach that necessitates hundreds of model executions over different random sequences and parameter settings. Hence, computational epidemiology can certainly be considered a new HPC domain with computational demands comparable to those of bioinformatics and computational chemistry. In the next chapter, social media mining is leveraged to enhance modeling and prediction in aspects of public health. With the generous support of Spinn3r, a social media company (82), nearly three terabytes of blog data dating from August 2008 to June 2009 is stored on CeCERA's cluster. Without access to large data storage and cluster computing, with high-bandwidth interconnects, data-mining would be nearly impossible running on a single workstation.

### 2.3.4. Model Validation

One of the most challenging task is the validation of models and simulation results. This is largely due to the lack of reliable, up-to-date case reporting for common, non-reportable

diseases, such as influenza. Influenza diagnosis based solely on the presentation of symptoms is limited as these symptoms may be associated with many other diseases. Serologic and antigen tests require that a patient with influenza Like Illness (ILI) be examined by a physician who can either conduct a rapid diagnosis test or take blood samples laboratory testing. This suggests that many cases of influenza remain undiagnosed

The CDC website states the Outpatient influenza-like Illness Surveillance Network (ILINet) consists of about 2,400 healthcare providers in 50 states reporting approximately 16 million patient visits each year. Each report data to CDC on the total number of patients seen and the number of those patients with influenza-like illness (ILI) by age group. For this system, ILI is defined as fever (temperature of 100F [37.8C] or greater) and a cough and/or a sore throat in the absence of a known cause other than influenza (23).

Examples of data sources that indicate the manifestation of Influenza include the Morbidity and Mortality Weekly Report (MMWR) issued by the CDC (22). While the information in these data sources is by no means precise and is to be viewed as trend data, it facilitates the qualitative validation of the models. The information available from these sources describe the regional manifestation of influenza in time. With the availability of census information for each of these regions, the underlying modeling assumptions and their effects on the disease dynamics in a specific region can thus be compared. For a more specific validation, our research group has access to data from local syndromic surveillance systems, however, these data are often incomplete and non-specific as they frequently capture only chief complaint data describing symptoms that may be associated with a variety of different diseases (i.e., ILI) .

Web and social media provide another resource to validate our models through monitoring online community discussions on infectious diseases. The pervasiveness and ubiquity of Internet and the World Wide Web resources enable individuals to have access to many information sources that facilitate the self-diagnosis by combining specific disease symptoms

to form search queries. The result of such queries often lead to sites that may help diagnose the illness and offer medical advice. Recently, Google Inc. has addressed this issue by capturing the keywords of queries and identifying specific searches that involve search terms that indicate influenza-like-illness (47). Other published research on influenza Internet surveillance include search advertisement click through (37), using a set of Yahoo search queries containing the words flu or influenza (72), and health website access logs (58).

#### 2.4. Summary

Public health professionals require computational support to study disease outbreak dynamics and to facilitate policy and decision-making. A computational framework was presented that integrates data from a multiplicity of source and utilizes specific computational modules that facilitate the study of outbreak dynamics through intricate what-if analyses, thereby enabling experts to quantify public health actions. The computational epidemiology framework facilitates the study of emerging and re-emerging diseases under presumed changing regional demographics and personal beliefs or modified disease parameters and may be expanded to find application in the study of chronic disease manifestation. In the next chapter, social media mining is used in two ways : monitoring seasonal influenza outbreaks and prediction of personal beliefs towards public health interventions.

## CHAPTER 3

### MINING SOCIAL MEDIA FOR TRENDS IN POPULATION HEALTH

#### 3.1. Monitoring Influenza Trends

Influenza diagnosis based solely on the presentation of symptoms is limited as these symptoms may be associated with many other diseases. Serologic and antigen tests require that a patient with influenza-like-illness (ILI) be examined by a physician who can either conduct a rapid diagnosis test or take blood samples laboratory testing. This suggests that many cases of influenza remain undiagnosed. While the presence of influenza in an individual can be confirmed through specific diagnostic tests, the influenza prevalence in the population at any given time is unknown and can only be estimated. In the past, such estimates have relied solely on the extrapolation of diagnosed cases, making it difficult to identify the various phases of seasonal influenza, or the identification of a more serious manifestation of a flu epidemic.

Web and social media (WSM) provide a resource to detect increases in ILI. Blog posts that discuss influenza are evaluated in this chapter; analysis show a significant correlation with the beginning of US Fall 2008 flu season. A well defined response strategy to an outbreak may make use of WSM to reduce population and human impact of the disease. We suggest a possible response that identifies WSM influenza-related communities that share flu-postings. These community or crowd sources could broker and disseminate important intervention information in the case of a infectious disease outbreak. The flowchart in Fig. 3.1 visually describes this approach to detecting and responding to influenza trends.

We briefly discuss a history of infectious disease outbreaks and recent approaches in on-line Public Health surveillance of influenza and the value of social community is discussed with regards to outbreak responses. Next, the data set used in our analysis is presented and

TABLE 3.1. Web and Social Media

Communications	
Blogs :	Blogger, WordPress, TypePad, LiveJournal
Internet Forums :	phpBB, vBulletin
Micro-blogging :	Twitter, Plurk, Pownce, Jaiku
Social Networking :	Bebo, MySpace, Facebook, LinkedIn, Friendfeed
Collaboration	
Wikis :	Wikipedia
Social Bookmarking :	Delicious, StumbleUpon, Google Reader
Social News :	Digg, Mixx, Reddit
Multimedia	
Photo sharing :	Flickr, Zoomr, Photobucket
Video sharing :	YouTube, Vimeo, Tevver
Art Sharing :	devianART
Livecasting :	Ustream.tv, justin.tv, Skype
Audio and Music Sharing :	imeem, Last.fm, pandora
Entertainment	
Virtual Worlds :	Second Life, Sims Online
Online Gaming :	World of Warcraft, EverQuest

the methodology for information extraction and trend analysis is outlined posting trends. Through discovery and verification of trends in influenza related blogs, a correlation is verified, to Centers for Disease Control and Prevention (CDC) influenza-like-illness (ILI) patient reporting at sentinel healthcare providers. Additionally, categories, frequency and influenza-post persistence qualitatively assist ILI trend identification in blogs. Strongly connected communities are evaluated and influential bloggers identified that should be part of an WSM outbreak response. We conclude with approaches to expand ILI-trend identification and an approach to create an integrated Public Health and WSM community intervention campaign.

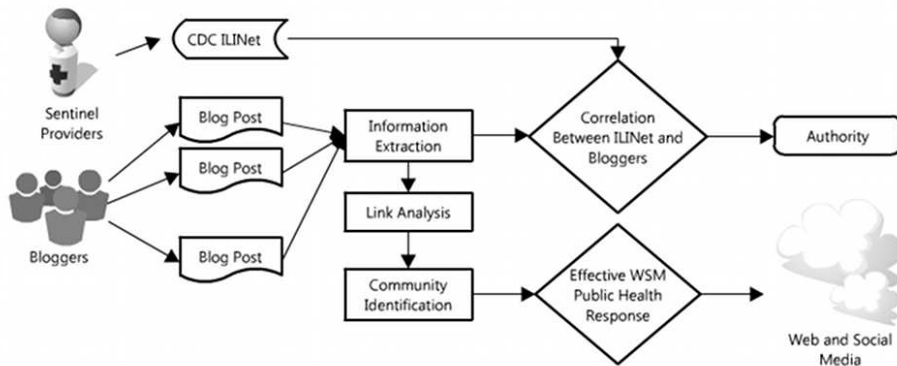


FIGURE 3.1. Methodology to monitor influenza-like-illness in social media and to identify possible web and social media communities to participate in a public health response.

The pervasiveness and ubiquity of the Internet and World Wide Web resources provide individuals with access to many information sources that facilitate self-diagnosis; one can combine specific disease symptoms to form search queries. The result of such queries often lead to sites that may help diagnose the illness and offer medical advice. Recently, Google has addressed this issue by capturing the keywords of queries and identifying specific searches that involve search terms that indicate influenza-like-illness (47). Other published research on influenza Internet surveillance include search “advertisement click-through” (37), using a set of Yahoo search queries containing the words flu or influenza (72), and health website access logs (58).

### 3.1.1.1. Data

Blog data used for the influenza trend identification is provided by *Spinn3r* (56). The data contains 44 million UTF-8 encoded posts(items) collected from 1-August to 1-October 2008, its physical size is 196 GB. Blogs are classified into a ranked tier structure with the tiers defined by how successful it is at creating and participating in memes on the Internet (<http://tailrank.com>). There are 13 rank tiers and a 14<sup>th</sup> tier with no rank value. This work uses blog items between 1-August and 30-September 2008 and are ranked in the first to twelfth tier; 8,654,874 blog items in August and 8,027,370 blog items in September 2008.

We assume the tier range for this task is sufficient by the Tailrank classification definition. From these, English language blog items are extracted by matching the `<dc:lang>` tag to *en* or by *U* tagged items whose `<description>` (html content) is encoded in ascii. The *blog-world* is defined to be English language tier 1 to 12 blog posts. We also consider the following terms to be equivalent: blog post & blog item and blogger & blog site. A sample Spinn3r XML-encoded blog item is listed in Appendix A.

### 3.1.2. Methodology

To facilitate anomaly detection, one can compare baseline blog-world trends to specific topic (e.g. influenza) trends. First, day of week posting trends are identified, the per day frequency of blog posts is calculated and plotted in Figure 3.2. The blog post date is taken from the publication date tag found in the item metadata. During August and September 2008, a clear seven day *period* in posting frequency is observed. Posting is more frequent during the middle of the week and less prevalent on the weekends, defining a seven day cycle that begins Sunday and ends on Saturday. The frequency for each of the seven days in a week, is averaged over the two month period and superimposed in Figure 3.2. A seven day posting period is present in these averages as well; most bloggers author content weekdays and less on the weekends. Time spent with friends and family, relaxing and not working may explain the low number of weekend posts. In addition to detecting anomalies by posting variance, changes in the period length, beyond what may be expected by randomness, flag anomalies worthy of further investigation.

## 3.2. Analysis of Trends in Influenza Blogs

In our analysis, English language items are extracted from the blog-world index when a lexical match exists to the terms *influenza* and *flu* anywhere in its content (misspellings and synonyms are not included). The blog items are grouped by month, week (Sunday to Saturday) and by day of week. The extracted blog items containing influenza keywords are termed flu-content posts or *FC-posts*.

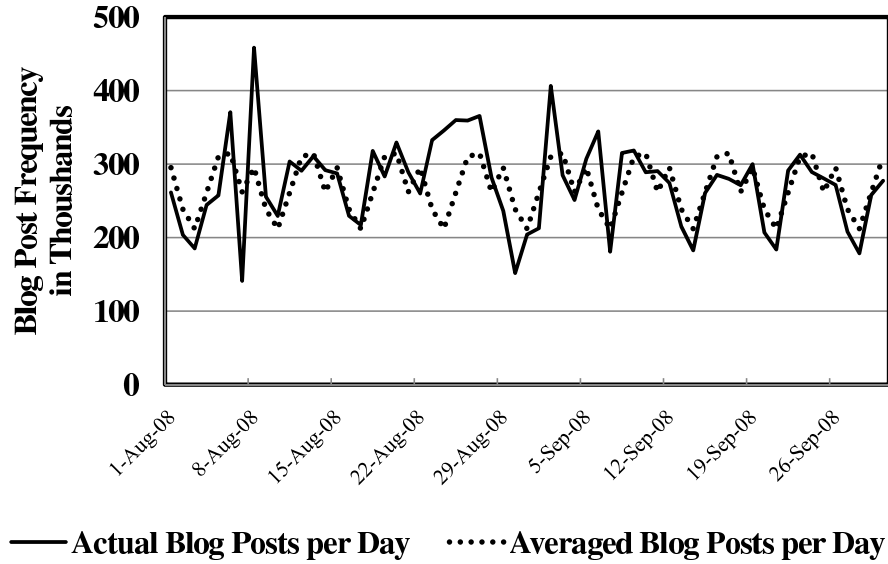


FIGURE 3.2. August and September 2008 : actual vs average blog-world posts per day of week. The *blog-world* is defined to be English language blog posts having a Tailrank value between one and twelve.

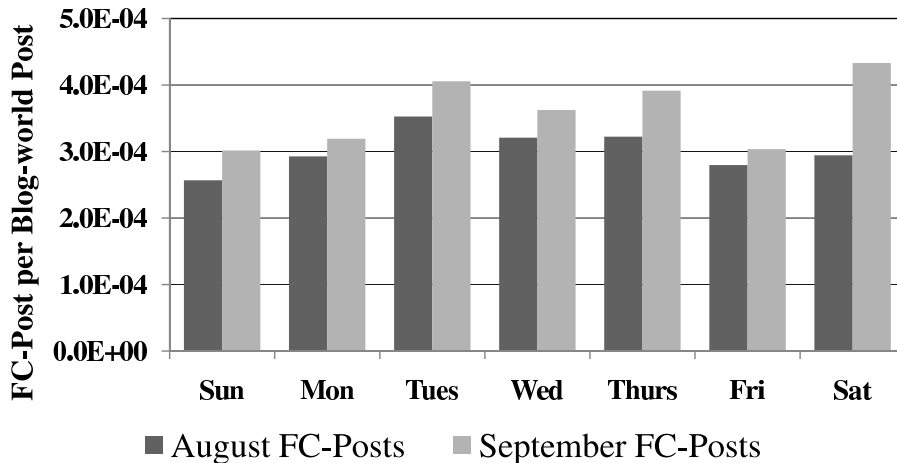


FIGURE 3.3. Average FC-posts per day of week; normalized by corresponding average day of week blog-world post count

### 3.2.1. Monitoring Influenza Trends

Monitoring FC-posts for sudden shifts in posting frequency, beyond what is randomly possible, could identify increased ILI. A seven day posting period is also present in influenza related blog items, with posting frequency higher weekdays and lower on weekends. The day



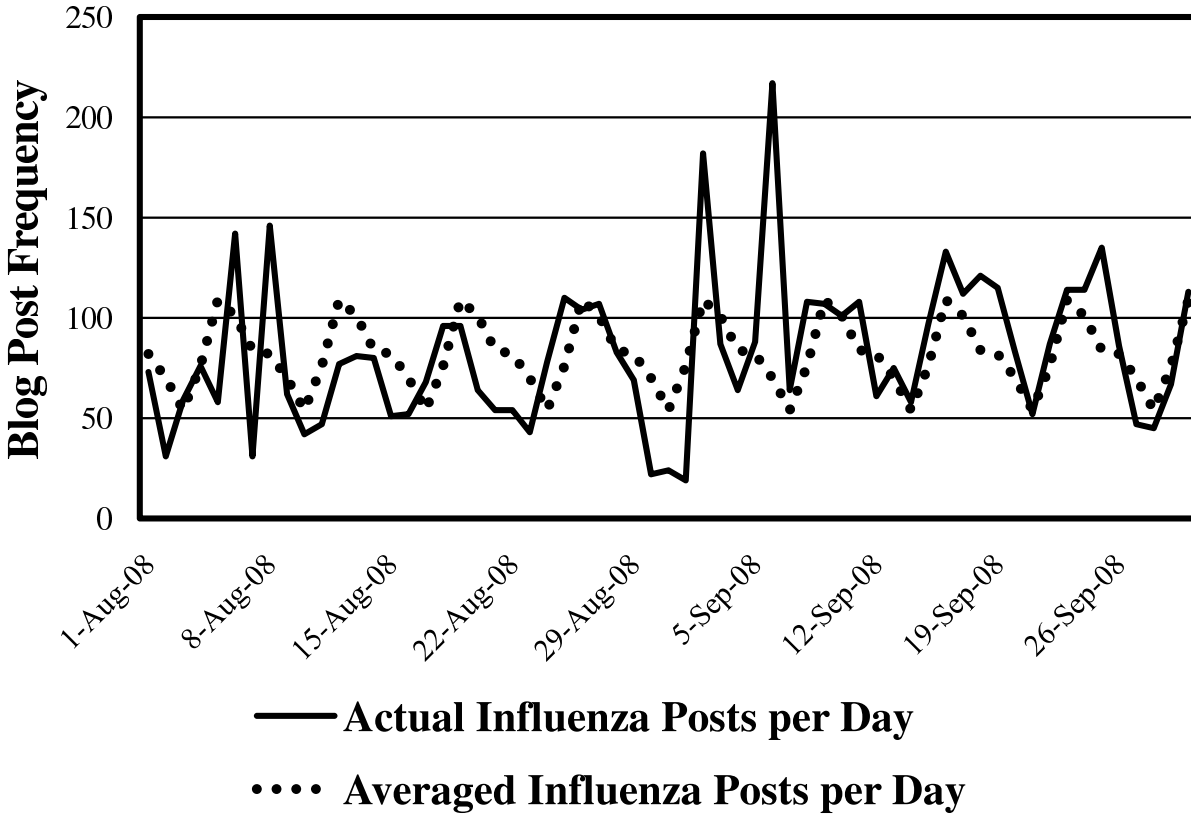


FIGURE 3.4. August and September 2008 actual vs average FC-posts per day of week. A *FC-post* is an English language, tier one to twelve blog post containing the term *influenza* or *flu*

of week FC-post frequency is averaged for August and September and is normalized by the corresponding day of week average for all blog-world posts, this data is plotted in Fig. 3.3. A slight posting frequency period can be observed for the month of August in Fig. 3.3 and it can be assumed the August level of ILI is stable. However, starting in September (historically, the month preceding flu season) the daily FC-post average increases significantly.

The nearly three-fold Saturday FC-post increase in September compared to August is a significant anomaly. On September 6, the number of ILI-posts are nearly triple the average ILI-posts for a Saturday and double the total average post per day (see Fig. 3.4). One might speculate the return to school of children, adolescents and college students contributes to the extraordinary increase of FC-posts. Perhaps, individuals contract an ILI in the confines

of school or college and bring it home to their families; alternatively, students and other bloggers could be conversing about the flu and elevate the flu items present in the blog-world. September 1st is Labor day, an American holiday signaling the end of summer break in many regions of the US and the beginning of fall school. We see a dramatic decrease in posts September 1, both in the blog-world and FC-posts. We posit that most bloggers are spending time away from their computers, engaging in face-to-face time with family and friends, barbecuing and enjoying the calm before a grueling trudge to the end of the year. Also, no one likes to stay home on a holiday, even if they are sick.

### 3.2.2. FC-post Trends and Correlation to CDC ILINet

FC-post trends can be monitored using the social media mining methodology presented here. This methodology facilitates identification of outbreaks or increases of influenza infection in the population. A significant finding is the strong correlation between frequency of FC-posts per week and Center for Disease Control and Prevention influenza-like-illness surveillance data. Qualitative assessment of category tags, prevalence of FC-posts on a blog site, and persistent posting of flu related posts also suggest ILI trends.

We posit that the increase in September 2008 blog-world flu-posts correlate with an increase of ILI and start of flu-season, to verify this statement the data is compared to Center for Disease Control and Prevention surveillance reports from sentinel healthcare providers. The CDC website states the Outpatient influenza-like-illness Surveillance Network (ILINet) consists of about 2,400 healthcare providers in 50 states reporting approximately 16 million patient visits each year. Each report data to CDC on the total number of patients seen and the number of those patients with Influenza-like-Illness (ILI) by age group. For this system, ILI is defined as fever (temperature of 100F [37.8C] or greater) and a cough and/or a sore throat in the absence of a known cause other than influenza (23).

The CDC ILINet surveillance and FC-post per week data are plotted in Fig. 3.5. CDC influenza-like-illness symptoms per visit at sentinel US healthcare providers labels the primary Y-axis. The secondary Y-axis marks the FC-post per week frequency normalized by

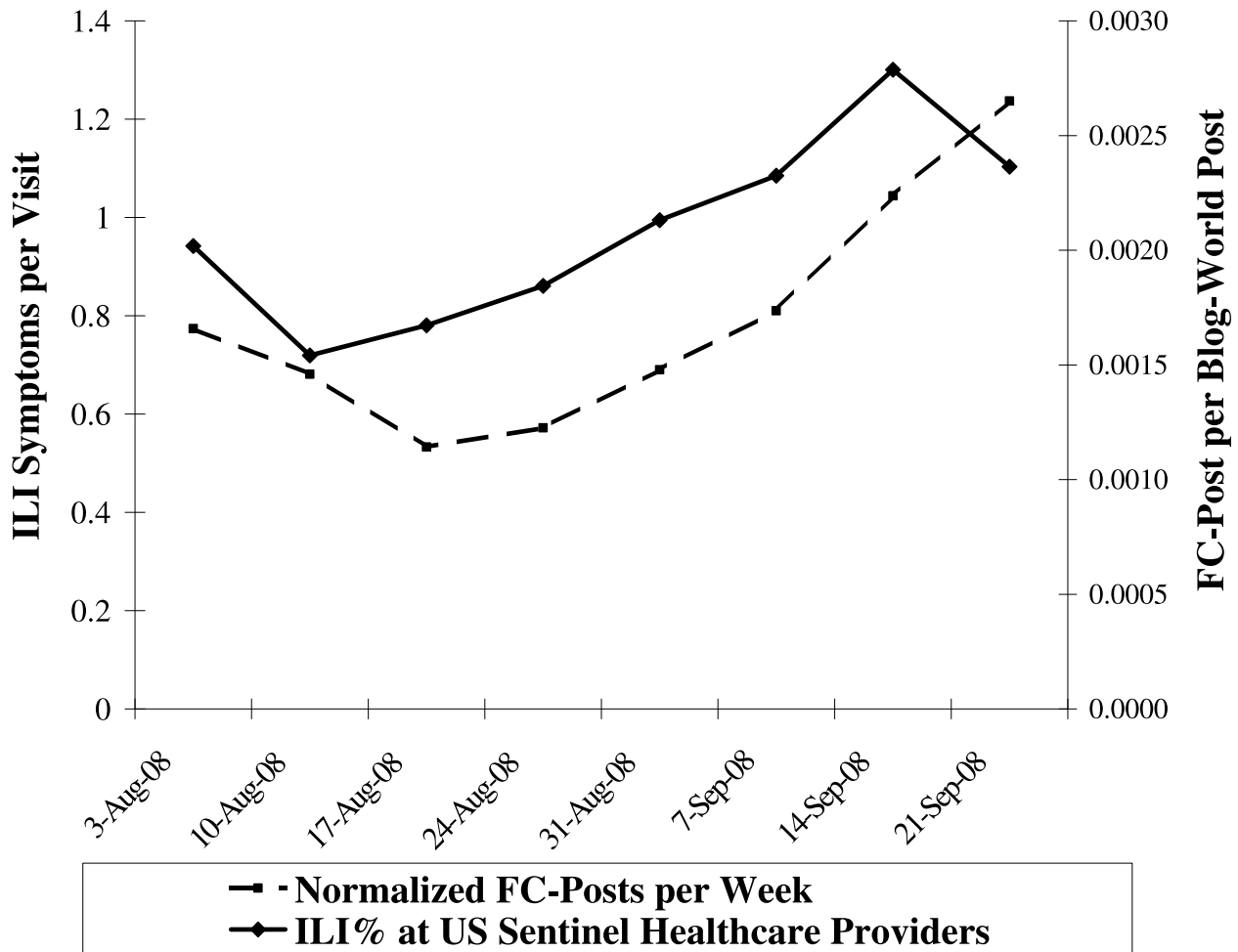


FIGURE 3.5. CDC ILINet vs normalized FC-post frequency per week. Each FC-posts per week data point is normalized by the corresponding blog-world posts per week count

the corresponding blog-world week post count. Correlation between the two data series measured with a Pearson correlation coefficient,  $r$ . To prove our hypothesis that a correlation between CDC ILINet reports and social media mined FC-post frequency, Pearson’s correlation coefficient is evaluated between the two data series. The Pearson correlation evaluates to unity if the two data series are exactly matching,  $r = 1$ . If no correlation exists between the data series, the Pearson correlation evaluates to zero,  $r = 0$ . In our analysis, the eight ILI and FC-post data points correlate strongly with a high Pearson correlation,  $r = 0.767$ , and the correlation is significant with 95% confidence.

### 3.2.3. FC-post Types

Once FC-posts have been extracted, one can further monitor influenza outbreaks by evaluating the perspective of blog authors. Bloggers having a direct knowledge of influenza infection are more valuable to disease surveillance than those who author objective or opinion items. Bloggers who persistently author FC-posts are less likely to be infected with influenza and more likely to be writing about Avian influenza (Bird Flu).

Identifying the perspective of influenza keyword posts facilitates determining its contribution to disease surveillance, three author perspectives are identified. A FC-post is either a self-identification of having ILI symptoms, secondhand (or by proxy) of another individual having ILI or the post is an opinion or objective article containing ILI keywords. Second-hand knowledge can be writing about a friend, schoolmate, family-member or co-worker but a blogger could also post details on famous individual such as a sports player. The season opening of American football coincides with the data and many FC-posts identify athletes who are unable to play because of an ILI, see the excerpt below. The following post excerpts demonstrate each FC-post type

· **Self Identified** : “What began as an irritating cold became what I think might be the flu last night. I woke up in bed around three this morning with sore muscles, congested lungs/nose and chills running throughout my body.”

· **Secondhand** : “According to ESPN.com, Ravens quarterback Troy Smith has lost ‘a considerable amount of weight’ while being hospitalized with tonsillitis and flu-like symptoms. Smith and veteran Kyle Boller likely won’t play in Sunday’s season opener, leaving the workload to rookie Joe Flacco and Joey Harrington, who was signed Monday.”

· **Objective (or Opinion) Article** : “Domesticated birds may become infected with avian influenza virus through direct contact with infected waterfowl or other infected poultry, or through contact with surfaces or materials like that of water or feed that have been contaminated with the virus.”

How often or how persistently bloggers author FC-posts indicate trends as well, a blog-site that has FC-posts for a limited time is more likely to be a first or secondhand experience.

Assigning each FC-post to a set, constrained by month, is another approach to identifying anomalies. Figure 3.6 demonstrates only a small portion of bloggers author “influenza” posts each month, whereas the majority of flu bloggers author content only once during the two months. The 1,167 and 1,927 blog posts in August and September, respectively, mark a nearly two fold increase in the number of singleton bloggers writing about influenza. We do not account for the number of bloggers who have an ILI and author content during both months, or if they get sick one month and write secondhand knowledge the other month. Accounting for these posters would only increase the number of singleton influenza posters, not negatively effect the trend surveillance.

Monitoring self-identification and secondhand FC-post trends can mark increases in ILI. It can be said that bloggers that post often about influenza are more likely to a) be an authority on influenza (perhaps not an expert though) where its readers find information

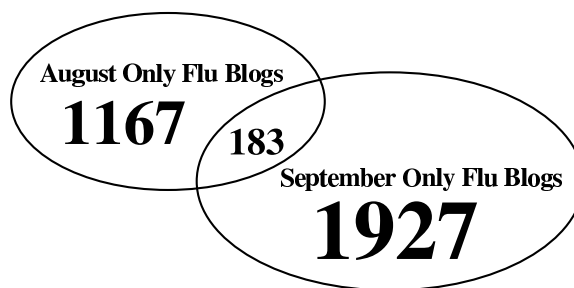


FIGURE 3.6. The number of bloggers who author FC-posts in August only, September only, or in both August and September

TABLE 3.2. Top Five Flu Content Bloggers

<b>Aug Blogs</b>	
124	<a href="http://birdcauseflu.com">http://birdcauseflu.com</a>
96	<a href="http://crofsblogs.typepad.com/h5n1">http://crofsblogs.typepad.com/h5n1</a>
59	<a href="http://birdflubreakingnews.com">http://birdflubreakingnews.com</a>
49	<a href="http://medblogs.org">http://medblogs.org</a>
34	<a href="http://afludiary.blogspot.com">http://afludiary.blogspot.com</a>
<b>September Blogs</b>	
82	<a href="http://birdcauseflu.com">http://birdcauseflu.com</a>
50	<a href="http://crofsblogs.typepad.com/h5n1">http://crofsblogs.typepad.com/h5n1</a>
34	<a href="http://afludiary.blogspot.com">http://afludiary.blogspot.com</a>
33	<a href="http://medblogs.org">http://medblogs.org</a>
26	<a href="http://bird-site.com">http://bird-site.com</a>

on influenza or b) the blogger is frequently sick with influenza. The five most frequent FC-post bloggers in August and September (Table 3.2) demonstrate the hypothesis frequent flu bloggers are news / opinion oriented.

### 3.2.3.1. Categories

Categories for each blog site are extracted from category metadata associated with each blog item. If a blogger uses a category in more than one post, the category is only counted once. Table 3.3 lists the top 35 categories and how often they appear. Avian flu and the H5N1 virus postings remain nearly constant in August and September. However, bloggers tagged with a “SICK” category double between the months, further verifying our ILI trend increase in September. Back to our reference to American football athletes contracting influenza, a greater number of “SPORTS” categories exist and the “LATEST NFL HEADLINES” category has appeared on 14 FC-post blogs.

TABLE 3.3. Blog Category Occurrence per Month

August 2008		September 2008	
Blogs	Category	Blogs	Category
120	AVIAN FLU	103	AVIAN FLU
58	HEALTH	67	HEALTH
55	NEWS	52	BIRD FLU SYMPTOMS
54	BIRD FLU SYMPTOMS	47	NEWS
45	GENERAL	46	LIFE
39	LIFE	42	POLITICS
36	MUSIC	40	GENERAL
25	BLOG	33	BUSINESS
21	FAMILY	30	MUSIC
21	MOVIES	26	BOOKS
19	POLITICS	22	SICK
18	FLU	22	INFLUENZA
18	TRAVEL BLOGS	21	MEME
17	BUSINESS	19	NO-TAG
16	ENTERTAINMENT	17	ENTERTAINMENT
16	NEWS AND POLITICS	16	SPORTS
16	PODCASTS	16	FAMILY
16	FLU / COLD / SARS	15	BLOG
15	BLOGGING	15	FLU
15	SPORTS	15	TRAVEL BLOGS
14	MEME	14	LATEST NFL HEADLINES
14	PERSONAL	14	FLU / COLD / SARS
14	FOOD	13	HUMOR
14	PROPHECY	13	CULTURE
13	HEALTH AND WELLNESS	13	NEWS AND POLITICS
13	PODCAST	13	MOVIES
13	AVIAN	13	UK
12	SICK	12	TECHNOLOGY
12	UK	12	C. ELEGANS
11	TECHNOLOGY	12	FOOD

### 3.3. Response Strategy in “Flu” Blog Communities

Development of accurate predictive health related outcome tools is imperative as the United States and other nations strive to increase individual and community health while reducing economic burden. Effective intervention strategies can be delivered to targeted communities through large-scale social media data-mining, demographic population analysis and predictive modeling of risk behavior. WSM communities will play a vital role in any public health response to an outbreak. Influential bloggers can disseminate and broker response strategies/interventions in their blog communities, the bloggers could be first responders to a disease outbreak, in an information sense. Their readers will hopefully trigger an information cascade, spreading the response, to vaccinate, quarantine, school closings etc. Remiss in our data is more recent evolutions of WSM community such as micro-blogging (the number of Twitter accounts grew by 900% in 2008), and wiki-style communities which many times are “gated” and not indexed in shallow web-crawls.

We take an intuitive and simple definition of WSM community and identify possible first responder bloggers by link analysis. Blog ranking enhances the idea these communities can disseminate information as part of a broader Public Health response triggered by anomalies in ILINet and WSM surveillance. Community is defined similarly to Flake, Lawrence and Giles, only strong flu post ties are considered, links only occur between FC-post bloggers (39). Links from a non FC-post to an FC-post and vice versa are not defined in this community definition. Although considerably less costly than a main stream media campaign, a WSM targeted response must be cost-effective and optimized to achieve maximum strategy penetration. Any blogger participating in Public Health campaign needs to have influence in its community, and the ability to disseminate information to other WSM. Closeness and betweenness centrality measures, and Google’s PageRank (eigenvector centrality) will rank influenza community blog sites in order to target key actors.



Wasserman and Faust state closeness can be productive in communicating information to other actors. It is defined in Eqn. 1 as the average shortest paths or geodesics distance from actor  $v$  and all reachable actors in (89) :

$$(1) \quad C_{C_v} = \frac{\sum_{t \in V \setminus v} d_G(v, t)}{n - 1}$$

Betweenness centrality (Eqn. 2) measures interpersonal influence, specifically a blog is central if it lies between other blogs on their geodesics - the blog is “between” many others, where  $g_{jk}$  is the number of geodesics linking blog  $j$  and blog  $k$  (89) :

$$(2) \quad C_{B_v} = \sum_{j < k} \frac{g_{jk}(n_i v, t)}{g_{jk}}$$

Page Rank is an example of eigenvector centrality and measures the importance of a node by assuming links from more central nodes contribute more to its ranking than less central nodes (18). Let  $d$  be a damping factor (usually 0.85),  $p_n$  are the pages,  $M(p_i)$  is the set of pages linking to  $p_n$  and  $L(p_j)$  is the outlink counts on page  $p_j$  :

$$(3) \quad R_{p_n} = \frac{1 - d}{N} + d \sum_{p_j \in M(p_n)} \frac{PR(p_j)}{L(p_j)}$$

Three centrality measures are calculated for the largest FC-post community member blog sites. August 2008’s largest community (Table 3.4) has 37 member blogs, and September 2008’s largest community (Table 3.4) has 14 member blogs. In developing an Public Health WSM response plan, each type of centrality better classifies how a blog site will influence and disseminate pertinent information. Blogs with high *betweenness* could broker information between bridged communities, synchronizing knowledge. Blogs with larger *closeness* and *PageRank* values can quickly disseminate outbreak response strategies.

The trend spotting and response framework presented could be improved by extending our identification and classification of WSM for influenza outbreaks. Ginsberg *et al.* in the

February 2009 Nature article automatically determine search queries effective in modeling seasonal influenza (47). Expanding blog post extraction to include keywords from Table 3.6 may enable greater accuracy in detecting FC-post trends. The methodology presented can be extended to other diseases. The CDC produces an annual list of notifiable diseases, given data in a similar format to ILINet surveillance reports, this framework can be shifted to monitor their trends. Future work will take advantage of WSM location tagging, trends will be collocated with geographic regions creating opportunities for decisive disease intervention.

TABLE 3.4. August 2008 EN-language *Flu* Community

Largest Component of Flu-Linked Blogs : August 2008			
PR	URL	CLOSE	BTWN
0.154	<a href="http://crofsblogs.typepad.com/h5n1/">http://crofsblogs.typepad.com/h5n1/</a>	0.514	0.715
0.099	<a href="http://birdflumonitor.com">http://birdflumonitor.com</a>	0.33	0.263
0.083	<a href="http://afludiary.blogspot.com">http://afludiary.blogspot.com</a>	0.424	0.3
0.069	<a href="http://www.eurekalert.org/">http://www.eurekalert.org/</a>	0.327	0.262
0.065	<a href="http://newfluwiki2.com/frontPage.do">http://newfluwiki2.com/frontPage.do</a>	0.424	0.374
0.049	<a href="http://fluwikie2.com">http://fluwikie2.com</a>	0.391	0.056
0.04	<a href="http://birdflujourney.typepad.com">http://birdflujourney.typepad.com</a>	0.419	0.256
0.032	<a href="http://www.eurekalert.org/pubnews.php">http://www.eurekalert.org/pubnews.php</a>	0.31	0.11
0.029	<a href="http://medicalnewstoday.com">http://medicalnewstoday.com</a>	0.391	0.048
0.027	<a href="http://fromthestyx.wordpress.com">http://fromthestyx.wordpress.com</a>	0.25	0
0.018	<a href="http://influenzapandemic.blogspot.com">http://influenzapandemic.blogspot.com</a>	0.288	0.001
0.018	<a href="http://allafrica.com/eastafrica">http://allafrica.com/eastafrica</a>	0.305	0.006
0.017	<a href="http://www.unicef.org/">http://www.unicef.org/</a>	0.333	0.021
0.016	<a href="http://sciencewriter.spaces.live.com">http://sciencewriter.spaces.live.com</a>	0.25	0
0.016	<a href="http://hatingautism.blogspot.com">http://hatingautism.blogspot.com</a>	0.25	0
0.016	<a href="http://advancednano.blogspot.com">http://advancednano.blogspot.com</a>	0.25	0
0.016	<a href="http://infowars.org">http://infowars.org</a>	0.25	0
0.015	<a href="http://channelnewsasia.com">http://channelnewsasia.com</a>	0.3	0
0.015	<a href="http://www.japantoday.com/">http://www.japantoday.com/</a>	0.367	0
0.015	<a href="http://allafrica.com/westafrica">http://allafrica.com/westafrica</a>	0.343	0
0.014	<a href="http://shakesville.com">http://shakesville.com</a>	0.248	0
0.014	<a href="http://iith096.blogspot.com">http://iith096.blogspot.com</a>	0.248	0
0.014	<a href="http://ykalaska.wordpress.com">http://ykalaska.wordpress.com</a>	0.248	0
0.014	<a href="http://www.echojournal.org/">http://www.echojournal.org/</a>	0.248	0
0.014	<a href="http://www.geeknewscentral.com/podcasts/">http://www.geeknewscentral.com/podcasts/</a>	0.248	0
0.013	<a href="http://smarteconomy.typepad.com/smart_economy/">http://smarteconomy.typepad.com/smart_economy/</a>	0.238	0
0.013	<a href="http://birdsearcher.com">http://birdsearcher.com</a>	0.238	0
0.01	<a href="http://crofsblogs.typepad.com">http://crofsblogs.typepad.com</a>	0.343	0
0.01	<a href="http://flupatrol.com">http://flupatrol.com</a>	0.343	0
0.01	<a href="http://www.canada.com/index.html">http://www.canada.com/index.html</a>	0.343	0
0.01	<a href="http://dailykos.com/section/diary">http://dailykos.com/section/diary</a>	0.343	0
0.01	<a href="http://allafrica.com/nigeria">http://allafrica.com/nigeria</a>	0.343	0
0.01	<a href="http://californiaprogressreport.com">http://californiaprogressreport.com</a>	0.3	0
0.01	<a href="http://ww.tpmcafe.com">http://ww.tpmcafe.com</a>	0.343	0
0.01	<a href="http://allafrica.com/afdb/blogs/">http://allafrica.com/afdb/blogs/</a>	0.343	0
0.01	<a href="http://www.msnbc.msn.com/id/3032076/">http://www.msnbc.msn.com/id/3032076/</a>	0.283	0
0.009	<a href="http://plosone.org/home.action">http://plosone.org/home.action</a>	0.3	0

TABLE 3.5. September 2008 EN-language *Flu* Community

**Largest Component of Flu-Linked Blogs : September 2008**

PR	URL	CLOSE	BTWN
0.159	<a href="http://newfluwiki2.com/frontPage.do">http://newfluwiki2.com/frontPage.do</a>	0.542	0.359
0.149	<a href="http://afludiary.blogspot.com">http://afludiary.blogspot.com</a>	0.481	0.308
0.132	<a href="http://birdflumonitor.com">http://birdflumonitor.com</a>	0.351	0.154
0.131	<a href="http://crofsblogs.typepad.com/h5n1/">http://crofsblogs.typepad.com/h5n1/</a>	0.619	0.562
0.129	<a href="http://fluwikie2.com">http://fluwikie2.com</a>	0.52	0.295
0.065	<a href="http://medicalnewstoday.com">http://medicalnewstoday.com</a>	0.433	0.092
0.031	<a href="http://fiercebiotech.com">http://fiercebiotech.com</a>	0.265	0
0.029	<a href="http://flupatrol.com">http://flupatrol.com</a>	0.394	0
0.029	<a href="http://influenzapandemic.blogspot.com">http://influenzapandemic.blogspot.com</a>	0.394	0
0.029	<a href="http://www.pressgazette.co.uk/">http://www.pressgazette.co.uk/</a>	0.394	0
0.029	<a href="http://fjitimes.com">http://fjitimes.com</a>	0.351	0
0.029	<a href="http://www.earthtimes.org/">http://www.earthtimes.org/</a>	0.351	0
0.028	<a href="http://usatoday.com/news/health/front.htm">http://usatoday.com/news/health/front.htm</a>	0.361	0
0.028	<a href="http://southernstudies.org/facingsouth/">http://southernstudies.org/facingsouth/</a>	0.361	0

TABLE 3.6. Influenza Keyword Expansion

Google Search Queries Reported in (47)

influenza complication

Cold/flu remedy

General influenza symptoms

Term for influenza

Specific influenza symptom

Symptoms of an influenza complication

Antibiotic medication

General influenza remedies

Symptoms of a related disease

Antiviral medication

Related disease

Unrelated to influenza

### 3.4. Personal Beliefs

In a January 2009 *Science* article, human papilloma virus is indicated to cause some throat and oral cancers and is well-established to cause nearly all cervical cancers(93). A human papilloma virus vaccine has been proven successful to reduce its prevalence in FDA clinical trials and the vaccine is available in the United States. Current intervention policy targets pre-teen females for vaccination; however, the expansion of suggested guidelines may extend to other age groups and males as well. Predictive models are important tools in determining disease transmission dynamics and effective vaccination solutions.

This thesis takes a first step towards predicting the effect of personal beliefs on the spread of disease. One tool, developed in computational linguistics is sentiment analysis. Using linguistic or statistical approaches, this tool determines attitude (sentiment) of a text's emotional content. Current state-of-the-art sentiment labeling methods misclassify one of five sentiments and off-the-shelf tools evaluate at 50-75% accuracy. We mine web and social media to retrieve blog posts mentioning vaccination against the human papilloma virus. HPV vaccination blog posts from August and September 2008 are manually labeled as objective, or subjective (and corresponding polarity). A machine learning sentiment classifier is trained with the positive and negative polarity subjective posts. Then, each post from October 1 2008 to the end of February 2009 that mention HPV vaccination is labeled by the supervised ML classifier. The magnitude of vaccination beliefs is predicted and knowledge garnered from this analysis is made available as additional features to infectious disease modeling and simulation. The following three blog posts demonstrate negative and positive subjective affect and an objective affect.

#### 3.4.1. Examples of HPV Vaccination Affects

**Negative** I would like to point out that this is exactly the reason why I didn't get the cervical cancer vaccine. Well, that and the fact that it's no longer effective after you turn 25. My point is, I knew this was going to happen. And this was exactly why I was so against it being required for girls to attend school. Yes, let's make an extremely large number of people

take a drug that hasn't been on the market for that long. Then let's watch a chunk of them have horrible effects. (Correlates to news story : 4 to 5 times greater risk of Anaphylactic Shock)

**Positive** : Char! I jogged for another hour straight today! ... granted, I had some pie and ice cream earlier, so that factored in, but... I still did it! I'm training! FOR US! FOR THE MARATHON! :) In other news, I had my first shot in the round for the HPV vaccination today. One less! (Merck Advertising Slogan)

**Objective** : In July, U.S. Citizenship and Immigration Services quietly amended its list of required vaccinations for immigrants applying to become citizens. One of the newest requirements Gardasil, which vaccinates against the human papillomavirus (HPV).

### 3.4.2. Automatic Sentiment Classification

We posit that the domain of training data effects the accuracy of automatic sentiment analysis. To prove this statement, a training data set has been collected from HPV vaccination weblog items posted in August and September 2008. From the nearly 1000 English language HPV blog posts, a subset is chosen that clearly demonstrate attitude polarity towards HPV vaccination. This subset is manually annotated with a positive or negative label, in total 93 positive and 64 negative posts. Significant news events that bloggers are discussing in their subjective posts include Gov Rick Perry (R-TX) mandating vaccination for teenage girls in the state of Texas, notices of adverse side effects, a *New England Journal of Medicine* letter to the editor stating vaccinating women age 25-47 is not justified and announcement by the FDA that Merck's quadrivalent HPV vaccine Gardasil is approved for use in preventing Vulvar/Vaginal cancer.

To predict subjective polarity, a machine learning classifier is trained on the manually annotated training data. The complete data set is listed in Appendix B. A SVM classifier is

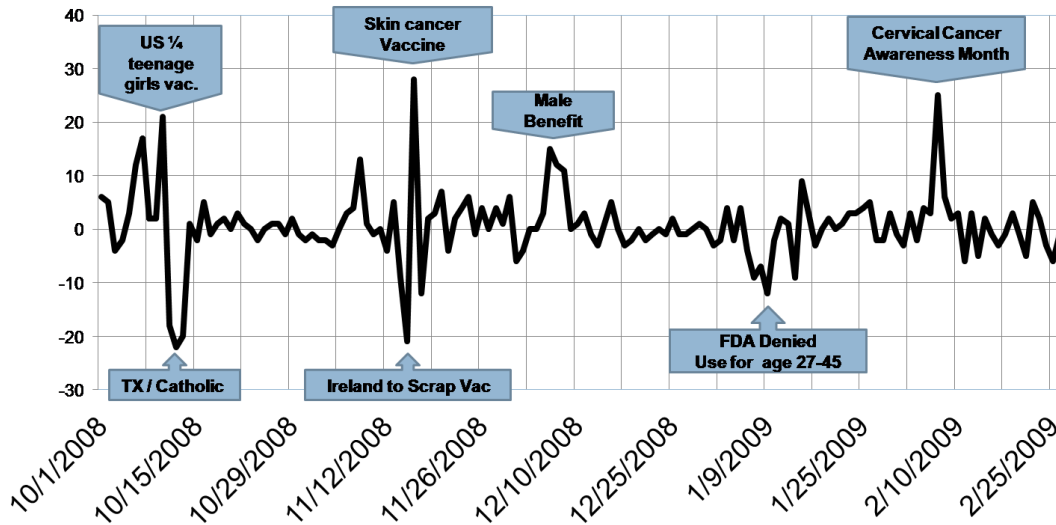


FIGURE 3.7. Predicted HPV vaccination sentiment polarity: 1 Oct 2008 to 27 February 2009

chosen to train the classifier, with five-fold cross-validation it achieves 70% accuracy<sup>1</sup>. The benefit of using domain-specific training data is significant; using the same SVM classifier trained with L. Lee’s 1800 movie reviews labeled as positive or negative, it achieves 48%. Many of the predicted sentiment magnitude shifts can be correlated to a specific event identified by news releases. A simple news search for stories containing HPV and vaccination keywords returns articles listed in the next section.

### 3.4.3. HPV Vaccination in Mainstream News

Oct 2, 2008 - DALLAS (AP) A new requirement that girls as young as 11 be vaccinated against a sexually transmitted virus before they can become legal US ... The series of three shots over six months protects against the strains of the human papillomavirus blamed for most cases of cervical cancer ...

From HPV vaccine mandated for green card applicants

[www.usatoday.com/news/health/2008-10-02-hpv-green-card\\_N.htm](http://www.usatoday.com/news/health/2008-10-02-hpv-green-card_N.htm)

<sup>1</sup>Nave Bayes (5-gram character smoothing) and Language-Model-based (8-gram) classifiers were also evaluated; however, they achieved a maximum 69% accuracy with domain-specific training



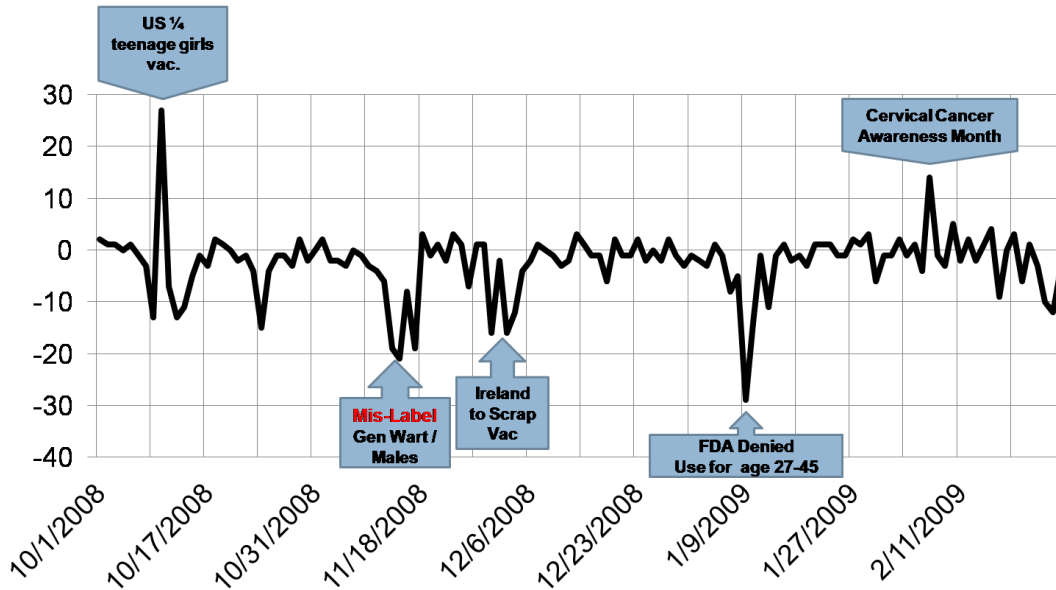


FIGURE 3.8. Predicted Gardasil sentiment polarity: 1 Oct 2008 to 27 February 2009

Oct 11, 2008 - A Scottish health board has launched an investigation after a 13-year-old school-girl was given the cervical cancer vaccine despite the doctor being aware her parents had withheld consent. The girl's parents had decided to delay immunisation against the human papilloma virus (HPV) ... Sunday Herald

[www.sundayherald.com/misc/print.php?artid=2459761](http://www.sundayherald.com/misc/print.php?artid=2459761)

Oct 11, 2008 - The vaccine, which protects against two types of the sexually transmitted human papilloma virus, is being offered in every province. The debate over the vaccine isn't confined to Alberta, however. At least one Catholic school district in Ontario voted earlier this year not to allow it ...

From Catholic schools opt out of HPV vaccine in Alberta

[www.ctv.ca/servlet/ArticleNews/story/CTVNews/20081011/hpv\\_alberta\\_081011/20081011?hub=Health](http://www.ctv.ca/servlet/ArticleNews/story/CTVNews/20081011/hpv_alberta_081011/20081011?hub=Health)

Nov 13, 2008 - EMBATTLED Health Minister Mary Harney last night won a Dail vote on the abandonment of a life-saving cervical cancer vaccine without the support of a former senior

minister. The decision to postpone the introduction of the Human Papillomavirus Vaccines (HPV), which would have cost 10m ...

From McDaid refuses to vote on vaccine

[www.pressdisplay.com/pressdisplay/viewer.aspx?issue=1059200811130000000001001&page=20&article=033268aa-cf42-459f-b77b-1b1d64d994b2&key...feed=gp](http://www.pressdisplay.com/pressdisplay/viewer.aspx?issue=1059200811130000000001001&page=20&article=033268aa-cf42-459f-b77b-1b1d64d994b2&key...feed=gp)

Nov 14, 2008 - Merck Frosst is moving ahead with plans to extend the use of its controversial Gardasil vaccine to boys and young men. The vaccine against the human papillomavirus could be just as effective in men, Universit de Montral professor Franois Coutle said yesterday.

From Move to give boys HPV shots

Nov 14, 2008 - His failed attempt to require all pubescent Texas girls to receive the human papillomavirus vaccine to protect them against a sexually transmitted virus that causes cervical cancer. Religious conservatives, among others, were outraged. Still, Perry is the incumbent and has some time to ...

From Different strategies for Perry, Hutchison CASEY

[www.pressdisplay.com/pressdisplay/viewer.aspx?issue=1084200811140000000001001&page=25&article=4ad8f839-1b79-49c0-97a1-fb0c65364902&key...feed=gp](http://www.pressdisplay.com/pressdisplay/viewer.aspx?issue=1084200811140000000001001&page=25&article=4ad8f839-1b79-49c0-97a1-fb0c65364902&key...feed=gp)

Nov 19, 2008 - A human papilloma virus vaccine already approved in women to prevent cervical cancer has proved equally effective in men against genital warts - which can lead to cervical cancer in women. In a trial of the vaccine in 4000 men only three recipients developed HPV-related lesions ...

Dec 3, 2008 - Gardasil given all-clear on reactions Dec 3, 2008 The study took in 25 young women who were reported to immunisation authorities as suffering a "suspected hypersensitivity" reaction during the national roll-out of the cervical cancer vaccine ... Gardasil, developed ...Gardasil given all-clear on reactions Dec 3, 2008 The study took in 25 young women who were reported to immunisation authorities as suffering a "suspected hypersensitivity" reaction during the national roll-out of the cervical cancer vaccine ... Gardasil, developed by former Australian of the Year,

scientist Ian Frazer, provides protection against 70 per cent of cervical cancers by blocking two strains of the sexually-transmitted human papilloma virus.

[http://news.surfwax.com/health/files/Cervical\\_Cancer.html](http://news.surfwax.com/health/files/Cervical_Cancer.html)

Dec 5, 2008 - Editorial congratulating the FDA and the CDC for approving the human papilloma virus vaccine for girls and women 11-26. Philadelphia Inquirer, with kind of a strange nonstory story: Domestic-violence prevention groups don't plan to protest Brett Myers' first game.

[www.salon.com/mwt/broadsheet/2006/07/21/what\\_else/](http://www.salon.com/mwt/broadsheet/2006/07/21/what_else/)

Dec 10, 2008 - The Food and Drug Administration has approved use of the vaccine, Gardasil, for use in girls and women ages 9 to 26. It works by preventing infection by four strains of the human papillomavirus, or HPV, the most prevalent sexually transmitted disease. This cancer kills 3700 women each ...

From Vaccine to protect against cervical cancer

[www.usnews.com/usnews/health/briefs/cancer/hb060608.htm](http://www.usnews.com/usnews/health/briefs/cancer/hb060608.htm)

Jan 7, 2009 - TRENTON Drugmaker Merck & Co. has asked federal regulators to approve use in males for its vaccine against the human papillomavirus, which causes cervical and other sexually transmitted cancers. The application was submitted in late December, Merck spokeswoman Amy Rose said Tuesday.

From Merck & Co. seeks Gardasil approval for boys

[www.app.com/article/20090107/BUSINESS/901070325/1003](http://www.app.com/article/20090107/BUSINESS/901070325/1003)

February 9, 2009. WSJ Looks At Potential Use Of HPV Vaccine On Young Men. Feb. 9, 2009 Still in debate is the use of the HPV Vaccine Gardasil. There is still debate whether this is safe for young girls to be vaccinated with. Human Papilloma Virus in females can cause genital warts and lesions as well as cervical cancer. In males it normally only causes genital warts or lesions. In some extreme cases they can appear as cauliflower looking growths on the genitals and the anus. The only way to protect yourself is to abstain or use..

CERVICAL CANCER AWARENESS MONTH: Mesa mother overcomes 2 cancers at once  
Feb. 8—Two years ago, Sandie Bigler wondered what her future would be. Diagnosed in the same month with cervical cancer and breast cancer, she was immediately thrown into a whirlwind of doctor appointments, diagnostic testing and hospital visits. Today, she’s trying to encourage others to follow through with annual Pap smears to avoid the same fate. January – Cervical Cancer Awareness Month – marked her first complete year of remission.”I do feel if I had...

### 3.5. Summary

The fusion of Complex Network Analysis, Health Informatics and Computational Linguistics to unrelated disciplines such as Sociology, Economics and Public Health is broadening interdisciplinary participation of scientific collaborative research. New hybrid approaches composed of integral theories and practices from these areas creates a synergy enabling discovery and understanding on how communications, information, networks and community structure effect population health.

Public health professionals often have limited budgets and resources must be specifically tailored to achieve maximum results. The utilization of computational social networking tools would allow for those within the public health industry to anticipate the impact of community specific predictions, and tailor awareness, educational, intervention, and prophylactic programs for the greatest impact within their population. Consider a network of social interactions and communication links whose nodes are the family unit, local health departments, clinics, Web and Social Media (WSM) and main stream media (MSM); modeling what-if scenarios using simulation frameworks, WSM and Public Health data analysis will increase Public Health response times and decrease negative impacts of a serious Influenza outbreak.

Web and social media (WSM) provide a resource to detect increases in ILI. We presented a method which evaluates blog posts containing keywords Influenza or flu and the results from analysis show a significant correlation with the beginning of US Fall 2008. This chapter’s most significant finding is a significant and strong correlation between the frequency

of FC-posts per week and Center for Disease Control and Prevention Influenza-like-illness surveillance data. Additionally, categories, frequency and constancy qualitatively assist ILI trend identification in blogs. Strongly connected communities are evaluated and influential bloggers identified that should be part of an WSM outbreak response. These community or crowd sources could broker and disseminate important intervention information in the case of a infectious disease outbreak.

Information in social media exists, flows and interacts between agents with those agents possibly interacting or communicating in multiple modes. General models exist simulating innovation diffusion and spread of contagion in social networks and also information transmission and cascades in communication networks. Empirical analysis of multiple WSM data (e.g. micro-blogs, blog comments) integrated with Federal, State and Local Public Health communication resources enable effective responses (26; 51; 59). In the following chapter, social network simulation and systems science approaches to modeling impact of public health interventions are defined. Knowledge learned from intervention sentiment analysis is then aggregated into the feature set of the modeling framework.

## CHAPTER 4

### SOCIAL NETWORK SIMULATION

#### 4.1. Background in Social Network Analysis

Our society is defined by interactions, either physical or information, be it a father at home tucking in his children at bedtime or a college student using an online social networking website such as Facebook to write a public wall post, on a friend's profile, thanking him or her for hosting a party the previous evening. An obvious atomic family relation exists between the father and his children forming a strong tie, another social relation exists because when the father tucks in his children, the close physical proximity creates another by different type of bond; similarly, relationships in the second example can be identified. Multiple relational interactions or Social Networks exist in both of these examples.

In Wasserman and Faust, a social network consists of a finite set or sets of actors and the relation of relations defined on them. An actor or node is a "discrete individual, corporate, or collective social unit." Examples of actors are doctoral committee members, University of North Texas (UNT) students; UNT professors in the College of Engineering, members sitting on both a non-profit and for-profit corporation board of directors, online social networks, Starbucks customers accessing Wi-Fi Internet, member countries of the United Nations and the list continues. A relation (tie) is "the collection of ties of a specific kind among members of a group" also called an edge. Examples include best friends, coauthors, monetary donations, interlocking directors, marital ties, intercontinental air-flights and military axis and alliances. The fundamental network unit is the dyadic relationship, a tie between two actors.

Although antecedents lie in 1920s (Freeman 1996), Jacob L. Moreno pioneered social network analysis for his "psychodrama" therapy. He used sociomatrices and hand-drawn sociograms to display children's likes and dislikes of classmates as directed graphs (digraphs).

In the 1930s investigators like Davis, Gardner and Gardner (DGG, 1941) began to collect relational data on social interaction and interpersonal ties. Their aim was to use the data both to assign individuals to groups and to determine the position of each individual's core or peripheral group member. But, to assign individuals to groups and positions, they needed to specify the sociological notions of group and position in exact terms. In particular, they collected information on the social activities of 18 women during a nine-month period. During that period, various subsets of these women had met in a series of 14 informal social events. The participation of women in events was uncovered using "interviews, the records of participant observers, guest lists, and the newspapers" (DGG, p. 149) a subsequent article by Homen in 1950 reported that the data reflect joint activities like, "a day's work behind the counter of a store, a meeting of a women's club, a church supper, a card party, a supper party, a meeting of the Parent-Teacher Association, etc."

#### 4.2. Recent Work

Avenues of previous social models of sexually transmitted diseases and infections have included the categorization of individuals into groups based on the differing stages of infection of each disease condition versus demographic factors such as age, sex, and geographic location. Gonorrheal and Chlamydial infections have been predicted using these types of models, which have been validated through available statistics. Due to the nature of these illnesses, statistical data is often very difficult to collect (4; 88; 92). Epidemiological models for sexually transmitted conditions have also been created based on the accumulation of contact tracing data. This type of data may be unreliable due to individual recall error and privacy constraints, but is the common method of understanding Syphilis transmission (24; 52; 76; 91; 92).

Recently, human papilloma virus has been implicated to cause several oral and throat cancers(93) and it is established that more than 90% of cervical cancers contain HPV DNA (50). In the United States (US), 13,000 women are diagnosed with cervical dysplasia and 5,000 die annually and by the age 50, 80% of women will have acquired genital HPV

infection. Currently, 20 million people are infected with HPV in the U.S. with 5.5 million new cases annually (78). Due to the health care and human costs associated with this virus, it is vital to have known impact of vaccination strategies. We realize that 100% vaccination coverage is improbable; hence, the need for vaccination solutions that will have the greatest reduction on the endemic prevalence of cancer causing HPV types.

Most work in modeling infectious disease epidemics is mathematically inspired and based on differential equations and SIR/SEIR (Susceptible, Exposed, Infectious, and Recovered) model (6). Differential equation SIR modeling relies on the assumption of constant population and neglects population demographics (15; 16). They fail to consider individual interaction processes and assume homogeneous population. Both partial and ordinary differential equation models are deterministic in nature and neglect the stochastic or probabilistic behavior (83). Nevertheless, these models have been shown to be effective in regions of small population (83). Modeling sexually transmitted diseases with differential equations has been developed and incorporates sexual activity classes with broad population interaction(44; 3). Markov models have been developed that are capable of simulating the natural history of HPV and type specific stages of cervical carcinogenesis (49; 50). Improved Markov models simulate high-and-low risk HPV infection. They are capable simulating non-persist and persistent HPV infections that leads to cervical carcinogenesis (60). Cost-effectiveness analysis has been performed on the benefits of a HPV vaccine implementing decision and Markov models (78). The differential equation and Markov models ignore specific demographics and approach modeling at population-level (43; 55). Additionally, models have been developed to investigate ethnic inequalities in the incidence of sexually transmitted infections (84).

Previous work employing social network schemes has varied in context. The EPISIMS computational analysis tool, created at the University of Maryland in conjunction with the Los Alamos National Laboratory, estimates social networking based on the transportation patterns evident within the target city, Portland, Oregon (36). This computational model



may be used to handle diverse social networking in regards to the transmission of infectious disease agents. Public health officials may utilize this model to help predict where preventive measures, including quarantine and vaccination, would be most useful and cost effective within their populations. Since its inception, EPISIMS research has relocated to the Virginia Bioinformatics Institute at Virginia Tech. Their research has expanded to include simulation of most cities, a coarser grained simulation of the entire U.S, and multiple versions of EPISIMS based on various modeling paradigms. The Center for Computational Analysis of Social and Organizational Systems at Carnegie Melon University has also built a simulation framework, BLOWAR, to predict the effect of a large-scale terrorist attack or infection outbreak. BLOWAR incorporates multi-agent systems, census track data, human social behavior and wind dispersion data(21).

#### 4.3. A Discrete-Time Epidemic Model to Analyze Impact of Age and Gender Targeted Interventions

This chapter addresses the public health need to assess the population-level disease prevalence impact due to arbitrary interventions; specifically, age and gender targeted human papilloma virus vaccine schemes.

With this in mind, we have developed a discrete-time model to facilitate predicting impact on the reduction of HPV prevalence from arbitrary age and gender targeted vaccination. Since HPV is highly virulent with more than 30 strains that are sexually transmittable, the Age-Gender discrete-time model distinguishes a population into different subgroups based on intimate mixing patterns. Population demographics and census data are analyzed to extract demographic parameters and youth and adult risk behavior surveys are studied to determine the intimate partner contact rates (32; 69).

We introduce a Age-Gender stratified discrete-time model for evaluating the effect of demographic-biased vaccination strategies. This model borrows from previous work in ordinary differential equation models by Hughes, Garnett, Anderson and Koutsky which predicts the population-level impact of a pre-exposure Human Papilloma Virus vaccine (44; 43; 55).

The model developed by Hughes *et al.* is a SIR-based compartment model that depicts endemic disease prevalence in a given population. Transmission and infection dynamics in this model occur within a sexually active population and this population is a subset, determined by age, of the total population. Given that individuals generally do not have the same contact rate, the sexually active population is sub-divided into disparate groups classified by their average contact rate with the population remaining constant throughout the execution of the model; however, a temporal flow is present with a population proportion aging-out and the same proportion aging-in continuously. The mixing dynamics in the sexually active population subset with constant population size incorporate the concept of homogeneous sexual mixing, in a population, with varying contact rates between individuals. Effective disease transmission is described by varying contact rates between individuals, disease characteristics, and sexual mixing; the homogeneous sexual mixing that occurs is further described by the proportion of contacts that take place within group (assortative) and conversely group-to-group (random). Now, endemic disease prevalence is determined at infection equilibrium, when every infectious individual causes one new infection.

#### 4.3.1. Age-Gender Discrete-Time Model

In this section we describe the Age-Gender (AGe) model that is time-dependent and stratifies the population via age and gender. This model contains five compartments to represent an individual's current disease state and each compartment is governed by a linear difference equation. These discrete-time linear difference equations combine demographic groups of different age ranges with sexual activity classes. AGe's compartments map to the SIR model (Susceptible, Infectious, and Removed/Immune) with two added states to include vaccination effect (Vaccinated, Vaccinated & Infectious). Figures 4.1 and 4.2 display population flow and compartment transitions. Dynamics of each compartment determine the level of infection in the population where the population size remains constant throughout the execution of the model (equal birth and death rates).

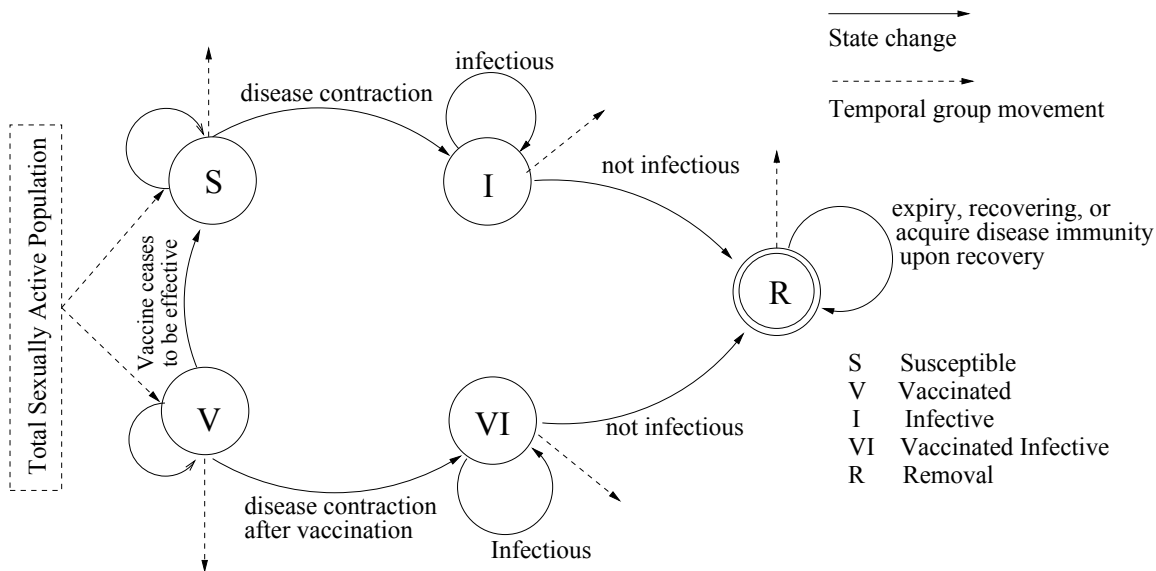


FIGURE 4.1. First age stratum (the first  $n$  subgroups): The population enters this portion of the model in either the susceptible or vaccinated compartment and a proportion( $v$ ) of each compartment will transfer to the next contiguous age stratum.

TABLE 4.1. U.S. County Abbreviations

County	Abbrv
Orange County, CA	OCA
District of Columbia	WDC
Miami-Dade County, FL	MFL
Fulton County, GA	FGA
Polk County, IA	PIA
Denton County, TX	DTX

The AGE-model calculates the endemic prevalence of *HPV* by continually aging-in new susceptible individuals and aging-out a proportion of each sexual activity class iteratively. Each class maintains a constant population size and the age range in each activity class is uniform. Due to stratification of the population by age, individuals that age-out of each demographic stratum must age-in to the next contiguous age strata. Individuals in the last age stratum exit the sexually active population. Once an individual exceeds the age modeled, they then exit the population from their current state.

### 4.3.1.1. Intimate Contact Patterns

Two surveys conducted by the Centers for Disease Control and Prevention: Youth Risk Behavior Surveillance and College Risk Behavior Surveillance ((69; 32)) are incorporated in our demographically stratified model. These surveys state that reported sexual activity varies by age and demographics. We consider sexual mixing characteristics in varied demographic groups, in addition to the sexual activity variance across the entire population provided by the Hughes *et al.* model and the contact rates are based upon contact tracing from a particular disease outbreak (55). Additionally, we claim that sexual activity rates vary by age and by race (32; 73). Our model(s) derive contact rates from data obtained from the Youth Risk Behavior Surveillance: National College Health Risk Behavior Survey (32) indicate students aged greater than or equal to 25 years (97.8%) were more likely to report sexual intercourse in their lifetime than students aged 18-24 years (79.9%). The sexual activity class proportions in the demographic groups are 3%, 15% and 82% correspond to high, moderate

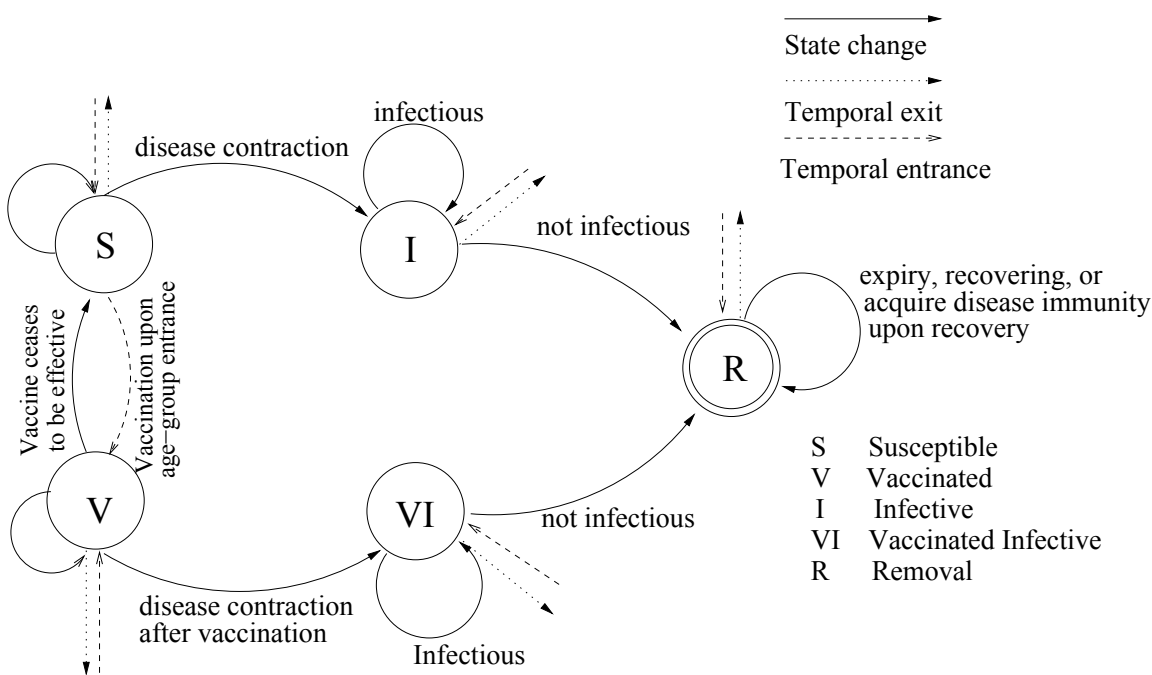


FIGURE 4.2. The remaining age strata (remaining  $l - n$  subgroups): The population enters the model from the previous age-stratum in to their corresponding compartment and exits to the next contiguous age stratum.

TABLE 4.2. U.S. Census Data for Select U.S. Counties

		OCA	WDC	MFL	FGA	PIA	DTC
Population proportion by age							
15-19	Males	0.157	0.124	0.159	0.139	0.158	0.147
	Females	0.158	0.140	0.171	0.136	0.157	0.149
	Total	0.314	0.264	0.329	0.276	0.314	0.296
20-24	Males	0.166	0.167	0.161	0.167	0.153	0.164
	Females	0.142	0.196	0.143	0.158	0.166	0.172
	Total	0.308	0.363	0.304	0.325	0.319	0.336
25-29	Males	0.194	0.178	0.183	0.205	0.181	0.184
	Females	0.184	0.195	0.184	0.194	0.186	0.184
	Total	0.378	0.373	0.367	0.399	0.367	0.368

and low partner change rates. The contact rates used in our analyses are listed by age and gender in (30). It should be noted that the contact rates for each demographic stratum are created artificially; however, the variance in contact rates is in line with published reports (45; 32).

#### 4.3.1.2. AGE-Model Mathematical Representation

Through demographic population stratification and analysis of risk behavior surveys, effective vaccination strategies can be defined for a given geographic area. Demographic analysis is critical for appropriate and effective policies in regions with disparate demographic compositions, including high-risk communities such as youth or minority groups.

We incorporate different demographic parameters that are critical to determine the most effective vaccination strategy for a population. Demographics from six U.S. counties selected for their geographic distance and feature variance, obtained from the 2000 U.S. Census. County abbreviations are found in Table 4.1 and population demographics by age and gender

are detailed in Table 4.2. The AGe-Model (Fig. 4.3, 4.4) sensitivity analysis is presented in Section 4.3.1.4.

#### 4.3.1.3. Model Parameters

The models allows arbitrary vaccination in segments of the population ( $\phi_{kl}$  with gender  $k$  and sexual activity class  $l$ ) and vaccine coverage can be targeted in high-risk sub-groups or spread across the entire population, where high-risk is determined to be the sexual activity class with the highest average contact rate. The model has encapsulated the needed functionality to vary the vaccine efficacy by the degree of vaccination ( $\psi$ ). The model also incorporates other characteristics, such as time-line until the vaccine ceases to be effective ( $1/\sigma$ ), relative risk of transmission from a vaccinated individual compared with an unvaccinated individual ( $r$ ) and infectious period of non-vaccinated ( $1/\gamma$ ) and vaccinated ( $1/\alpha\gamma$ ) individuals.

The basis for interaction in the models is uniform mixing of heterosexual contacts. The age range of the sexually active population is modeled from 15 to 30; however, this range ( $1/\mu$ ) can be varied depending on the demographics of a region. These models assume uniform mixing; however, the parameter,  $\epsilon$ , determines the population proportion that interacts with individuals of the opposite sex in disparate demographic and sexual activity subgroups with the population interaction ranging from assortative to random ( $0 \leq \epsilon \leq 1$ ). The parameter  $\rho_{lm}$  generates contacts occurring within an individuals activity group ( $l$ ) and the contacts ( $N_m c_m$ ) made outside of the individuals activity group ( $m$ ).

Several disease characteristics are vital for accurate portrayal of disease propagation, including infectivity and infectious period. HPV is highly virulent with more than 30 strains that are sexually transmittable. The transmission risk from an infectious individual to a susceptible of the opposite gender differs by gender. The transmission risk ( $\beta$ ) from male to female is 80% and for female to male is 70%. The transmission risk is derived from a binomial distribution,  $1 - (1 - \zeta)^\kappa$ , over the average number of sex acts with a partner ( $\kappa$ )

and  $\zeta$  is the risk of being infected in one sex act. An infected individual is infectious with the disease for approximately 1.5 years (49).

Each demographic stratum is divided into sexual activity classes ( $\omega$ ) defined by contact rates ( $c$ ). In the AGe-model individuals ( $\mu$ ) age-in to the model as either susceptible ( $1 - \phi$ ) or vaccinated ( $\phi$ ) individuals; however, individuals now will age-out of their current age stratum and age-in to the next contiguous age-stratum from their disease compartment at rate  $v$ . Additionally, the force of infection is a binomial probability over the transmission risk in each demographic subgroup ( $\Sigma_m$ ) as determined by the mixing parameter ( $\rho_{lm}$ ).

$$\begin{aligned}
\Delta S_{kl} &= .5\mu(1 - \phi_{kl})\frac{\omega_l}{\sum_{i=1}^n \omega_i}\eta - (\lambda_{kl} + v)S_{kl} + \sigma V_{kl} \\
\Delta I_{kl} &= \lambda_{kl}S_{kl} - (\gamma + v)I_{kl} \\
\Delta R_{kl} &= \gamma I_{kl} + \alpha\gamma V I_{kl} - vR_{kl} \\
\Delta V_{kl} &= .5\mu\phi_{kl}\frac{\omega_l}{\sum_{i=1}^n \omega_i}\eta - (v + \sigma + \psi\lambda_{kl})V_{kl} \\
\Delta V I_{kl} &= \psi\lambda_{kl}V_{kl} - (v + \alpha\gamma)V I_{kl}
\end{aligned}$$

FIGURE 4.3. First age stratum (the first  $n$  subgroups): The population enters this portion of the model in either the susceptible or vaccinated compartment and a proportion( $v$ ) of each compartment will transfer to the next contiguous age stratum.

$$\begin{aligned}
\Delta S_{kl} &= (1 - \phi_{kl})vS_{k(l-n)} - (\lambda_{kl} + v)S_{kl} + \sigma V_{kl} \\
\Delta I_{kl} &= vI_{k(l-n)} + \lambda_{kl}S_{kl} - (\gamma + v)I_{kl} \\
\Delta R_{kl} &= vR_{k(l-n)} + \gamma I_{kl} + \alpha\gamma V I_{kl} - vR_{kl} \\
\Delta V_{kl} &= vV_{k(l-n)} + \phi_{kl}vS_{k(l-n)} - (v + \sigma + \psi\lambda_{kl})V_{kl} \\
\Delta V I_{kl} &= vV I_{k(l-n)} + \psi\lambda_{kl}V_{kl} - (v + \alpha\gamma)V I_{kl}
\end{aligned}$$

FIGURE 4.4. The remaining age strata (remaining  $l - n$  subgroups): The population enters the model from the previous age-stratum in to their corresponding compartment and exits to the next contiguous age stratum

TABLE 4.3. Sensitivity Analysis on Temporal Model

	Partial Correlation Coefficient		
	Infectious	Vaccinated Infectious	Total Infectious
$\epsilon$	0.350	0.110	0.321
$\phi$	0.776	0.389	-0.601
$\sigma$	0.448	-0.282	0.241
$\psi$	0.162	0.597	0.427
$v$	-0.771	0.134	-0.656

#### 4.3.1.4. Sensitivity Analysis

Sensitivity analyses have been performed on the temporal model by calculating partial correlation coefficients (PCC) for five of the key parameters; 20 values uniformly distributed in a reasonable range were sampled from each parameter and the model was executed 3,200,000 times. The PCC describes the effect of one of the five input parameters on the prevalence of infectious individuals, vaccinated and infectious individuals and the total *HPV* prevalence in the population. Table 4.3 displays the resulting PCCs; the results demonstrate the model operates within acceptable limits. The infectious PCC of  $\phi$  evaluates to -0.776, meaning with increased vaccination the prevalence of infectious individuals decreases. Interestingly, the vaccinated infectious PCC of  $\phi$  is 0.389, meaning with increased vaccination coverage there is also an increase in the number of vaccinated and infectious individuals; this increase is due to a greater vaccinated population pool hence, more people will have breakthrough infection. Overall, when the level of vaccination is increased, the total infectious population prevalence decreases, demonstrated by a PCC of -0.601. Analysis of  $v$  demonstrates an artifact of this model, that with an increased granularity of population strata, the evaluated endemic prevalence decreases, due to this artifact combining many temporally and non-temporally dependent demographics would infeasible.

#### 4.3.2. Results and Discussion

To evaluate the population-level impact of a specific vaccination policy we measure the relative reduction in endemic prevalence. Endemic prevalence with no vaccination coverage



TABLE 4.4. Temporal Model : Endemic Prevalence and Relative Reduction in Prevalence per Vaccine Policy

		OCA	WDC	MFL	FGA	PIA	DTC
No Vaccine	Males	0.046	0.046	0.046	0.046	0.046	0.046
	Females	0.049	0.049	0.049	0.049	0.049	0.049
	Total	0.048	0.048	0.048	0.048	0.048	0.048
Relative Reduction in Prevalence per Vaccine Policy (70% vaccine coverage)							
Vaccinate M&F	Males	0.689	0.689	0.689	0.689	0.689	0.689
	Females	0.685	0.685	0.685	0.685	0.685	0.685
	Total	0.687	0.687	0.687	0.687	0.687	0.687
Vaccinate F	Males	0.277	0.277	0.277	0.277	0.277	0.277
	Females	0.465	0.465	0.465	0.465	0.465	0.465
	Total	0.373	0.373	0.371	0.373	0.373	0.373
Vaccinate 15-19 M&F	Males	0.465	0.466	0.464	0.465	0.465	0.465
	Females	0.461	0.462	0.460	0.461	0.461	0.461
	Total	0.463	0.464	0.462	0.463	0.463	0.463
Vaccinate 15-19 F	Males	0.181	0.181	0.180	0.181	0.180	0.181
	Females	0.322	0.322	0.321	0.322	0.321	0.321
	Total	0.253	0.253	0.252	0.253	0.252	0.253
Vaccinate 20-24 M&F	Males	0.367	0.366	0.367	0.367	0.367	0.367
	Females	0.363	0.362	0.363	0.363	0.363	0.363
	Total	0.365	0.364	0.365	0.365	0.365	0.365
Vaccinate 20-24 F	Males	0.138	0.138	0.138	0.138	0.138	0.138
	Females	0.250	0.250	0.250	0.250	0.250	0.250
	Total	0.195	0.195	0.195	0.195	0.195	0.195
Vaccinate 25-29 M&F	Males	0.174	0.174	0.175	0.174	0.175	0.174
	Females	0.172	0.172	0.172	0.172	0.172	0.172
	Total	0.173	0.173	0.173	0.173	0.173	0.173
Vaccinate 25-29 F	Males	0.063	0.063	0.063	0.063	0.063	0.063
	Females	0.123	0.122	0.123	0.122	0.123	0.123
	Total	0.093	0.093	0.094	0.093	0.094	0.094

is the baseline to measure the impact of vaccination and we define the relative reduction in prevalence (RRP,  $\pi_p$ ) as change in prevalence due to a vaccine policy ( $p$ ) compared with the baseline prevalence ( $\theta_0$ ). Our results show a reduction in prevalence within the RRP range of established models, Hughes *et al.* cite a RRP of 0.68 with a range of 0.628 to 0.734; other models such as Sanders and Taira cite a RRP of 0.8 and above(55; 78). Evaluations are performed in the AGe-model with targeted gender and age demographic settings; both experimental settings utilize the same disease and vaccine parameters and a demographic composition that corresponds to a particular county in the US. In each model evaluation, the predicted endemic prevalence is measured, compared and the potential impact on endemic prevalence by targeting vaccine coverage in certain sub-groups is analyzed. For these experiments, vaccine efficacy is 90% and vaccine coverage for each schema is set to 70% and is chosen at this level to represent a median-case intervention coverage/acceptance rate.

$$(4) \quad \pi_p = \frac{\theta_0 - \theta_p}{\theta_0}$$

Although full vaccine coverage in the population would be desirable, costs associated with the vaccine makes it infeasible. Table 4.4 demonstrates that vaccinating only females reduces the prevalence by 47% which is competitive to the impact on prevalence by vaccinating males and females ages 15-19. Clearly, these two policies will have the same impact in the population; however, vaccinating a particular age stratum is more cost-effective than blanketing an entire gender, this is due to the difference in demographic population levels. Also, the baseline endemic prevalence varies in each experimental setting due to the disparate contact rates and demographic proportions.

The prevalence model evaluates an endemic prevalence of 0.046 and 0.049 for males and females, respectively across all the counties (Table 4.4). The low variance in endemic prevalence for the evaluations is due to the homogeneous age-strata compositions in the selected counties and the low variance in contact rates per age stratum. The combined effects of these two factors limit the endemic prevalence variability in the temporal model.

Measuring the effectiveness of vaccine coverage on a specific age group illustrates a beneficial age to begin vaccination. Table 4.4 also demonstrates vaccinating females, ages 15-19 (25.5%) has lower impact than targeting all females in the population (37%); however, this is still a significant reduction in prevalence and starting vaccination at an earlier age will have the greatest impact with a prevalence reduction compared to vaccinating at a later age. Both experimental settings demonstrated that female vaccination nearly doubled the reduction in prevalence compared to men.

The effects on prevalence of a demographic-biased intervention by tailoring the model parameters to a specific geographic or demographic region. We also show that the disparate demographic compositions from 6 select counties in the United States result in varying endemic prevalence of HPV and that a one-fits-all vaccination policy would only be effective in those regions with similar age distributions. Our gender-targeted HPV vaccine analysis focuses on predicting HPV transmission in heterogeneous populations and measures the population-level impact of a HPV vaccine.

We provide this tool for epidemiologists to define solutions with the greatest impact on prevention of HPV in a community. This section addresses the public health need to assess the qualitative population-level in disease prevalence due to arbitrary interventions, specifically, age and gender targeted human papilloma virus vaccine schemes. A human papilloma virus vaccine has been proven successful to reduce its prevalence in FDA clinical trials and the vaccine is available in the United States. Current intervention policy targets pre-teen females for vaccination; however, the expansion of suggested guidelines may extend to other age groups and males as well. Predictive models are important tools in determining disease transmission dynamics and effective vaccination solutions. With this in mind, we developed a discrete-time model to facilitate predicting impact on the reduction of HPV prevalence from arbitrary age and gender targeted vaccination.

#### 4.4. Dynamic Intimate Contact Social Networks and Epidemic Interventions

Sexually transmitted diseases and infections are on the brink of becoming considered endemic within general populations. Many of these illnesses are preventable in nature, and the public health industry would benefit from the predictive measures capable of intimate social networking computational tools. Professionals within this field often have limited budgets and resources must be aimed in the proper direction in order to achieve maximum results. The utilization of computational social networking tools would allow for those within the public health industry to anticipate the impact of demographic specific predictions, and tailor awareness, educational, vaccination, and prophylactic programs for the greatest impact within their population.

In this section the general algorithm of our dynamic social network of intimate contacts (DynSNIC) simulator is presented. This algorithm generates a dynamic contact driven network with a specific degree distribution, disease dynamics and evolving population. We then describe in detail how DynSNIC optimizes the bipartite network with a predetermined degree distribution, minimizing the number of unresolved degrees. The networks generated are then analyzed using the graph statistics introduced earlier in this thesis. A sample case study is presented demonstrating DynSNIC's capabilities and this section concludes with future work in our simulator's development.

Providing social networks for sexually transmitted diseases and infections depend upon numerous implications, each of which must be taken into account. While studying the epidemiological patterns of these conditions, one must individually analyze the interaction potential between host and pathogen, whether viral or bacterial, as well as interventions regarding health-care, before analyzing the potential causative associations where the pathogen may have been acquired. Since pathogen acquisition may hold the answer to interventions and preventative measures in the future, the use of social networking is a practice which may save much needed time and resources.

#### 4.4.1. Classical Graph Statistics

Analyzing graphs with various statistical properties has become an important component in describing real world complex networks. First, we briefly introduce basic graph-theoretic statistics including clustering coefficients. Next, we describe the modification of these methods to analyze properties of bipartite graphs..

The analysis of classical graphs is a well studied field in graph-theory and many methodologies exist to describe the nature of these graphs. Traditionally, a classical graph,  $G$ , is defined  $G = (V, E)$  where  $V$  is the set of vertices and  $E$  is the set of edges in the graph  $E \subseteq V \times V$ . The neighborhood  $N(v)$  of vertex  $v$  is defined as  $N(v) = \{\{u\} : e_{u,v} \in E\}$ . The degree of vertex  $v$  is the cardinality of the set of edge connections from  $v$  to its neighborhood,  $d_v^o = |N(v)|$ . Basic statistics that describe this graph include its size  $n = |V|$ , number of edges  $m = |E|$ , average degree  $k = \frac{2m}{n}$ , and its density,  $\delta(G)$ , which represents the probability any two randomly chosen vertices are connected,  $\delta(G) = \frac{2m}{n(n-1)}$ .

In addition, we consider two more statistics in the context of graphs, degree distribution  $p(k)$  and clustering coefficients. Degree distribution gives the probability of degrees in a network and has become an integral descriptive of the topology of complex networks. The degree distribution function  $p(k)$  describes the total number of vertices in a graph with a given degree (Eq. 5). This same information is also described by the cumulative degree distribution (34). (Eq. 6).

$$(5) \quad p(k) = \frac{d_v^o}{\sum_{v \in V | d_v^o = k}}$$

$$(6) \quad P_k = \sum_{k'=k} p_{k'}$$

The second graph descriptor is the clustering coefficient. It has been empirically shown that many social networks have a higher neighborhood transitivity than that of other random networks such as Internet topology (71; 90). Much of the analysis of the networks generated by our simulator is evaluated using clustering coefficients. This statistic describes the overlap in the network topology. The clustering coefficient  $C_v$  is the probability that any two nodes

are linked together if they have a neighbor in common. In an undirected graph  $e(u, v)$  and  $e(v, u)$  are the same link. Hence, if vertex  $v$  has  $k$  neighbors  $\frac{k(k-1)}{2}$  edges could exist in the neighborhood. Eq 7 defines the clustering coefficient for undirected graphs. The clustering coefficient for the entire graph is the average of each vertices' clustering coefficient over the graph (Eq. 8) (90).

$$(7) \quad C_{\bullet v} = \frac{|E_{N(v)}|}{\frac{|N(v)|(|N(v)|-1)}{2}} = \frac{2|\{e(y, u)\}|}{d_v^o(d_v^o - 1)}$$

$$: y, u \in N(v), e(y, u) \in E$$

$$(8) \quad \bar{c}_{\bullet} = \frac{1}{n} \sum_{i=1}^n C_{\bullet i}$$

#### 4.4.2. Bipartite Graph Statistics

Many of the bipartite graph statistics relate to their classical counterparts. Some of these descriptors are redefined while others are dual components of their classical property. A recent technical paper by Latapy *et al.* describes the following bipartite graph statistics in greater detail (62).

Consider a bipartite graph  $G = (\top, \perp, E)$ . The size of the graph is now divided into the size of the top portion  $n_{\top} = |\top|$  and the size of the bottom subset  $n_{\perp} = |\perp|$ , these are the number of nodes in the top vertex set and the bottom set, respectively. The size of the edge set remains the same as for classical graphs  $m = |E|$ . The average degree is now separated for each bipartition subset; the top subsets average degree is  $k_{\top} = \frac{m}{n_{\top}}$  and the bottom subset  $k_{\perp} = \frac{m}{n_{\perp}}$ . The average degree of the graph  $G^* = (\top \cup \perp, E)$  is now  $k = \frac{2m}{n_{\top} + n_{\perp}} = \frac{n_{\top}k_{\top} + n_{\perp}k_{\perp}}{n_{\top} + n_{\perp}}$ . The bipartite density is thus  $\delta(G) = \frac{m}{n_{\top}n_{\perp}}$  and  $\delta(G^*) = \frac{2m}{(n_{\top} + n_{\perp})(n_{\top} + n_{\perp} - 1)}$  with  $\delta(G^*) \ll \delta(G)$ .

Clustering coefficients are evaluated much differently in the bipartite setting. In the classical graphs, the overlap among vertices is measured by the number of triangles; however, in the bipartite case, triangles among vertices of the same set do not occur. The following descriptors will be used to analyze the topology of the networks generated by our simulator.

We define the clustering coefficient for pairs of nodes, both in either  $\top$  or  $\perp$  :  $cc_{\bullet}$  captures the overlap in neighborhoods of vertices  $u$  and  $v$ . Whenever the neighborhood of vertices  $u$  and  $v$  do not overlap then  $cc_{\bullet}(u, v) = 0$ . Conversely, if vertices  $u$  and  $v$  are elements of the same neighborhood then  $cc_{\bullet}(u, v) = 1$ . The equation for the neighborhood overlap is given in Eq. 9. The cartoon in Fig.4.5 demonstrates clustering in a bipartite graph. The neighborhoods of vertices  $u$  and  $v$  intersect at nodes  $a$  and  $b$  in the opposing subset, the corresponding clustering coefficient is  $cc_{\bullet}(u, v) = \frac{2}{3}$ ; however, there is no neighborhood intersection between vertices  $u$  and  $w$  and  $cc_{\bullet}(u, w) = 0$ . To evaluate the clustering coefficient of a particular node, the average over the subset is calculated for only those edge pairs where an overlap in neighborhoods exist (Eq. 10). The graphs clustering coefficient  $cc_{\bullet}(G)$  is the average of each bipartition subsets corresponding clustering coefficient ( $cc_{\bullet}(\top), cc_{\bullet}(\perp)$ ) (Eq. 11). Considering complex networks with significant differences between degrees of the vertices, the previously introduced clustering coefficient may not provide a strong and informative analysis of the network topology. The following two clustering coefficient flavors further describe neighborhood overlap. Equation 12 describes a clustering coefficient lower bound and considers a setting where a small neighborhood is encompassed by a large neighborhood. Equation 13 evaluates an upper bound on the clustering coefficient and evaluates occurrences

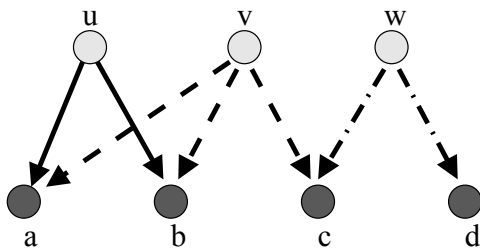


FIGURE 4.5. The neighborhoods of vertices  $u$  and  $v$  intersect at vertices  $a$  and  $b$ . The clustering coefficient between these two vertices is  $cc_{\bullet}(u, v) = \frac{2}{3}$ . However, there is no overlap (clustering) between vertices  $u$  and  $w$ ; thus the clustering coefficient of vertex  $u$  remains the same ( $cc_{\bullet}(u) = \frac{2}{3}$ ).

where small or large neighborhoods overlap. The following clustering coefficients can be evaluated similarly to eqns. 10 and 11 :  $cc_{\downarrow}(u)$ ,  $cc_{\downarrow}(\top)$ ,  $cc_{\downarrow}(\perp)$ ,  $cc_{\downarrow}(G)$ ,  $cc_{\uparrow}(u)$ ,  $cc_{\uparrow}(\top)$ ,  $cc_{\uparrow}(\perp)$ , and  $cc_{\uparrow}(G)$ (62).

$$(9) \quad cc_{\bullet}(u, v) = \frac{|N(u) \cap N(v)|}{|N(u) \cup N(v)|}$$

$$(10) \quad cc_{\bullet}(u) = \frac{\sum_{v \in N(N(u))} cc_{\bullet}(u, v)}{|N(N(u))|}$$

$$(11) \quad cc_{\bullet}(G) = \frac{n_{\top} cc_{\bullet}(\top) + n_{\perp} cc_{\bullet}(\perp)}{n_{\top} + n_{\perp}}$$

$$(12) \quad cc_{\uparrow}(u, v) = \frac{|N(u) \cap N(v)|}{\min(|N(u)|, |N(v)|)}$$

$$(13) \quad cc_{\downarrow}(u, v) = \frac{|N(u) \cap N(v)|}{\max(|N(u)|, |N(v)|)}$$

#### 4.5. Generating Realistic Social Networks of Intimate Interactions

We have developed a simulator capable of building a evolving social network of dynamic heterosexual intimate contacts. This type of social network can be viewed as a bipartite graph described by the triplet  $G = (G_f, G_m, \vec{\mathbf{E}})$  where  $G_M$  represents male,  $G_F$  represents female vertices contained in the network at any point in time and  $\{\vec{\mathbf{E}} : \vec{\mathbf{E}} \subseteq G_f \times G_m\}$  is a vector containing the set of edges present during discrete time intervals. We first describe the general algorithm for our social network of intimate contacts simulator. Next, we define in detail how we perform bipartite matching on our network so that a minimum open degree remains. The authors implemented the simulator in C++ using the boost stl graph libraries (79).

##### 4.5.0.1. General Algorithm

The general algorithm of our simulator contains several basic steps (Alg. 1). First, a forest is generated for each bipartition subset; next, the social network is created by linking



the two subsets with each other based on several properties. The generated social network can then be used to evaluate disease dynamics and any intervention strategies.

```

begin
  input : user defined parameter space

  Insert  $n_m$  vertices in  $G_m$ 
  Insert  $n_f$  vertices in  $G_f$ 
  foreach  $v_f \in G_f$  do
     $maxDegree_{v_f} \leftarrow zipf(-2.54, kFemaleBound)$ 
    draw a random vector  $\tilde{\mathbf{r}}$  from a user defined and bounded probability distribution
     $\vec{\mathbf{D}}_{v_f} \leftarrow \tilde{\mathbf{r}}$  //demographic property vector stochastically created and assigned to
      female vertex
  foreach  $v_m \in G_m$  do
     $maxDegree_{v_m} \leftarrow zipf(-2.31, kMaleBound)$ 
    draw a random vector  $\tilde{\mathbf{r}}$  from a user defined and bounded probability distribution
     $\vec{\mathbf{D}}_{v_m} \leftarrow \tilde{\mathbf{r}}$  //demographic property vector stochastically created and assigned to
      male vertex
   $\forall v_f \in G_f$  calculate preferential attachment  $p(k)$ 
   $\forall v_m \in G_m$  calculate preferential attachment  $p(k)$ 
  foreach discrete time step do
     $E_t = \{\}$  //initialize current edge set to the empty set
     $optBiMatching(G')$  //Optimize bipartite matching on dynamic network ,see
      Alg.2
    Evaluate disease dynamics including any intervention strategies
    foreach  $v_n \in G'$  do
      //population evolution
      draw a uniformly distributed random number  $\mathbf{r}$ 
      if  $\mathbf{r} > p(aging - out)$  then
        color  $v_n \in G$  as unusable
        create new node  $v_{new}$ 
         $maxDegree_{v_{new}} \leftarrow zipf(\alpha, genderBound)$ 
        insert  $v_{new}$  in  $G_k$ 
        recalculate preferential attachment  $p(k) \forall v_k \in G'$ 
    end

```

**Algorithm 1:** DynSNIC general algorithm. Note :  $G' = \{G_{m_{usable}}, G_{f_{usable}}, E_t\}$

A forest is generated for each bipartition subset  $(G_m, G_f)$  in the graph  $G$  by inserting the respective number of nodes  $(n_m, n_f)$  specified by the user parameter space. Demographic

characteristics play an important role in intimate interaction among individuals. To encapsulate these characteristics, each vertex is assigned a vector of demographic properties ( $\vec{D}_{\mathbf{v}_k}$ ). Each vector component is labeled by a specific feature set and its value is arbitrarily chosen from the set's range of discrete values. Due to limited available data, we choose not to explicitly identify each feature (i.e. race, income, education) and simply assign each vector component a probability distribution. Currently, gender is treated as a special case and not included in the feature vector; this is due to only heterosexual interactions consideration in the network.

Random network models assume that a link may be placed randomly between two vertices and uniformly throughout the network. This is not the case in real world networks, where links are more likely to exist with non-random attachment. Preferential attachment results when a new node is more likely to connect to a node with a high degree than to a node of low degree. The probability of connecting to vertex  $v_j$ ,  $\Pi_j$  is the connectivity of vertex  $v_j$  averaged over the total sum of each vertices degree (Eq.14) (10; 11).

$$(14) \quad \Pi_j = \frac{d_j^o}{\sum_{v_i \in G_k} d_{v_i}^o}$$

Demographic similarity can either strengthen or weaken the probability of connection, considering assortative to random mixing. Many scoring metrics exist to quantify similarity between two objects; for example, hamming distance, cosine similarity and feature frequency proportions (53; 57; 77). DynSNIC takes a coarse first cut at scoring the likelihood of mixing ( $p_{v_m, v_f}(mixing)$ ) between two individuals, using the unweighted cosine similarity of both vertices' demographic feature vector (Eq. 15). When selecting an intimate partner in actual social settings, it is likely that certain demographic features provide stronger, weaker, or even negative attraction (i.e. education, income, age), which would lead to a weighted function. Currently, the simplest (unweighted) *flavor* of the similarity scoring metrics is implemented in DynSNIC's initial experiments. The overall likelihood of an interaction occurring ( $p_E(Attach)$ ) between two vertices ( $v_f$  and  $v_m$ ) is the aggregate of the scoring function and preferential attachment ( $p_E(Attach) = p_{v_m}(k) \times p_{v_m, v_f}(mixing)$ ).

$$(15) \quad p_{v_m, v_f}(\textit{mixing}) = \text{COSIM}(\mathbf{D}_{\mathbf{v}_f}^{\rightarrow}, \mathbf{D}_{\mathbf{v}_m}^{\rightarrow}) = \cos \theta = \frac{\mathbf{D}_{\mathbf{v}_f}^{\rightarrow} \cdot \mathbf{D}_{\mathbf{v}_m}^{\rightarrow}}{|\mathbf{D}_{\mathbf{v}_f}^{\rightarrow}| |\mathbf{D}_{\mathbf{v}_m}^{\rightarrow}|}$$

A key factor in assessing structure among intimate connections, as is common with most other social network topologies, is degree distribution. A Swedish survey on sexual behavior was analyzed and reported by Liljeros *et al.* in a 2001 Nature article (64; 66). The survey was evaluated from a random sample of 4,781 Swedes ages 18-74 that involved questions and personal interviews. One of the survey questions was how many intimate partner changes occurred in a years time. Using the data obtained from this question, Liljeros *et. al* were able to determine a specific probability distribution for having  $k$  intimate partners. Males in the study reported a higher partner change rate than females; however, they both had similar scaling. In particular the paper cited the number of partners in the previous year follows a power law distribution. The cumulative probability function (eq. 16) of a power-law distribution  $P_k$  is the probability of having  $k$  partners with scaling parameter  $\alpha > 1$  and  $L(k)$  being a slowly varying function that controls the shape and finite extent of the lower tail (70). In our algorithm we use a specific type of power-law called a bounded Zipf-law, the authors chose this law so an exact upper bound (shown in (66)) could be placed on the number of intimate partner changes (94).

$$(16) \quad p(k) \approx L(k)k^{-\alpha}$$

Once the population has been generated, preferential attachment probabilities and demographic feature vectors have been assigned to each node; the time-driven simulation can commence. The first step is to maximally connect the two bipartition subsets forming a network of intimate interactions. The problem of finding the graph configuration with the lowest total remaining degree is a computationally intensive problem with a running time known to be *NP-hard* and represents an interesting dilemma. A greedy-heuristic described

in section 4.5.0.2 is implemented to reduce the computation to  $O(E \log V)$ . After the contacts have been placed, disease dynamics and any intervention strategies can be performed on the network. The model's population size remains constant; however, it evolves through accounting for persons aging-out of the modeled age-span ( $v = \text{age span modeled}$ ). Nodes are stochastically colored unusable based upon the probability of aging-out of the network ( $\frac{1}{v}$ ). The unusable nodes are then replaced with new nodes, each new node is assigned a demographic feature vector, and its cardinality from the bounded Zipf-law distribution. Preferential attachment probabilities are recalculated for each vertex and the dynamic network is then rebuilt according to algorithm described in Alg.1.

#### 4.5.0.2. Maximally Connecting a Bipartite-Graph : $\text{optBiMatching}(G')$

The purpose of Algorithm 2 ( $\text{optBiMatching}(G')$ ) is to connect every node in  $G_M$  to another node in  $G_F$ , maximally exhausting each subsets total degree. Algorithm 2 optimizes matching on the bipartite graph in polynomial time ( $E \log V$ ) with the following constraints : every node has at least one connected edge and the resulting graph's cardinality is optimized so that a minimal number of edges remain to be connected (see Figs. 4.6 and 4.7).

Let  $G$  be an undirected bipartite graph, that contains two bipartition subsets,  $G_M$  and  $G_F$ . The vertices in each subset have a pre-assigned degree associated with it; specifically, a random, power-law distributed number which is the maximum possible number of edges

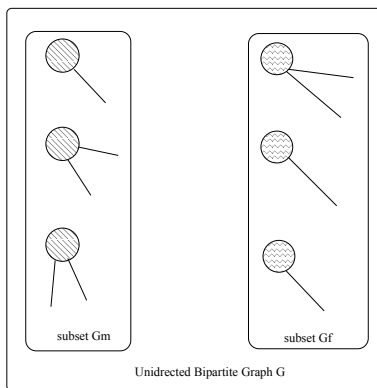


FIGURE 4.6. Initial graph  $G$

connected that vertex. For the constraint that each node is to have at least one edge the following bounds must hold  $|N(G_f)| > |G_m|$  or  $|N(G_m)| \geq |G_f|$ . Note, the distribution of male and female vertices is not significant if the previously mentioned constraint holds. Edges are attached to the graph as follows: in vertex order of each subset, one edge is attached from a male vertex to a randomly chosen female vertex in the opposing subset, link attachment is determined by preferential attachment and cosine similarity of each vertices' demographic vector. A threshold is set to arbitrarily choose a vertex in the opposite subset when a large number of vertices have been chosen but no edge has been placed. The simulator's threshold is set to 200 attempts before an arbitrary vertex in the opposite subset is chosen for edge placement. When a node randomly chooses a node in the opposite subset and it stochastically fails to create a link, the model will draw a random node 200 times before arbitrarily choosing a vertex for edge placement; the number 200 is arbitrarily chosen and sensitivity on this threshold is left for future work. Next, an edge is attached from a female vertex to a male vertex, also determined by preferential attachment and cosine similarity of each vertices' demographic vector. The edges are added one per subset until one of the subsets maximum cardinality is reached. The exact algorithm is described in greater detail in Alg. 2. A sample network generated by our simulator that contains 100 nodes, 50 females and 50 males is displayed in Figure 4.8.

#### 4.6. Experimental Results

We have introduced several methods to examine the topology of complex bipartite networks. Next, we evaluate the dynamic networks produced by DynSNIC using Monte-Carlo type simulations. The computational complexity associated with calculating bipartite graph statistics allowed for ten runs, each run generating ten contact realizations of the dynamic

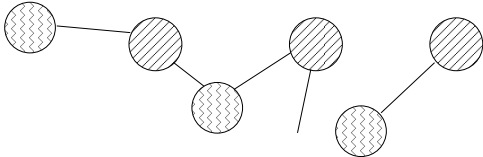


FIGURE 4.7. Optimized graph, with minimal remaining set cardinality

social network. The networks contain 10,000 vertices and each bipartition subset has an equal number of male and female vertices ( $|G_m| = |G_f|$ ).

The partner change cumulative distribution is displayed on a log – log plot in Figure 4.9. The solid line demonstrates a power law curve with  $\alpha = 2.31$ , it can be seen that the contacts generated by our simulator slightly under-fit the original distribution however the scaling remains. Currently, our model slightly under-fits the power-law scaling reported by Liljeros *et al.*; this is due to when a node reaches its maximum degree we do not allow (by chance) for a link to be added to that vertex (66). Note that approximately 90% of the vertices have only one contact (shown in Fig.4.9) and thus result in approximately 4,500 links; the average edge count for our preferential attachment networks is 7693 and 10% of the vertices account for  $\approx 3200$  links (similar statistics are present for cosine similarity and PAXCOSIM networks).

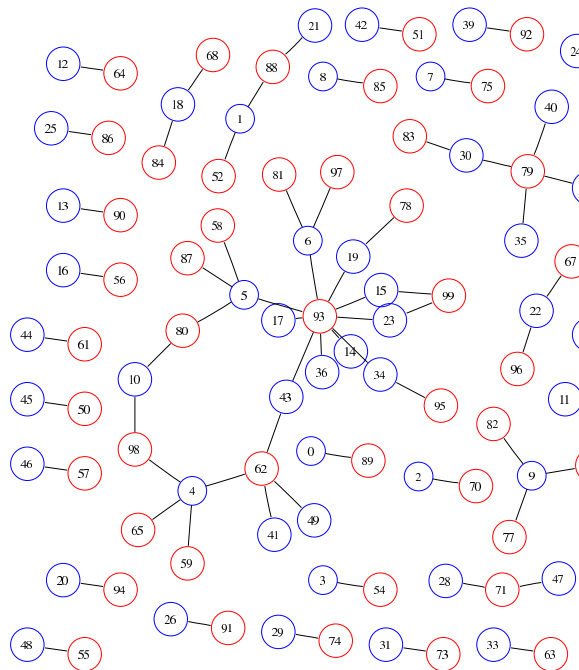


FIGURE 4.8. Portion of a 100 node ( $|G_m| = |G_f|$ ) social network realization where the probability of intimate connection is  $p(k) \times \text{COSIM}(\mathbf{D}_{v_m}^{\vec{}}, \mathbf{D}_{v_f}^{\vec{}})$ .

Three evaluation settings were chosen for our experiments, defined by interaction probabilities. The interaction likelihood settings are using solely demographic feature vector cosine similarity, solely preferential attachment, and the aggregate of preferential attachment and cosine similarity scoring. The graph statistics resulting from the Monte-Carlo simulations are displayed in Table 4.5. The results demonstrate the likelihood of clusters in our networks. They also show the range of clustering coefficients for the graph and each bipartition subset. Each specific clustering coefficient statistic show a high occurrence of clusters compared to the density of  $G$  and  $G^*$ . An interesting observation from the table is that preferential attachment alone, produces less neighborhood overlap compared to demographic feature cosine similarity. This correlates to results from comparing clustering in social networks to that of non-human networks where interactions are defined more by network topology than other affinity measures; for instance, the Internet topology compared to the Live-Journal community (61). Centrality measures are valuable in quantifying network topologies; evaluating these metrics on dynamic and evolving networks is an open research question and the authors leave centrality evaluation to future work (14).

Quantitative analysis of DynSNIC’s infection dynamic capabilities, in conjunction with health policies and interventions strategies, is provided in the following case study. Many

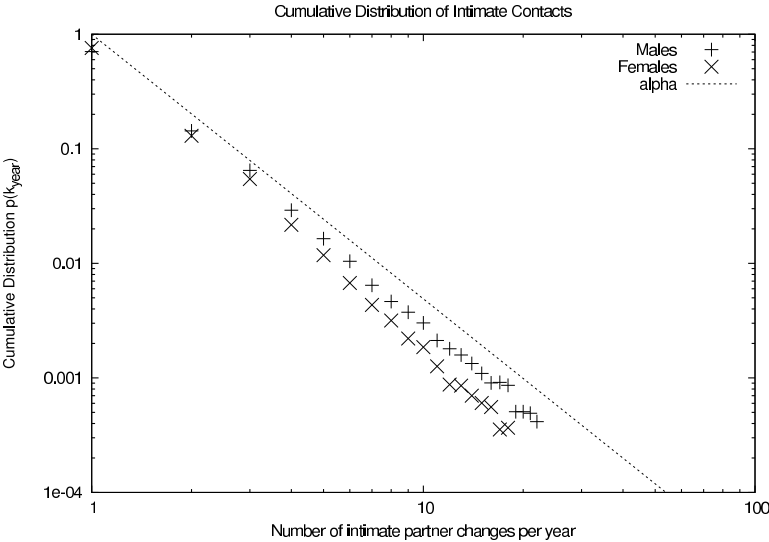


FIGURE 4.9. Cumulative distribution for intimate contacts

Human Papilloma Virus (HPV) types are sexually transmitted and HPV DNA is found in 99.7% of all cervical cancers with HPV-types 16, 18, 31 and 45 accounting for 75% of cervical dysplasia(50). Upon acquisition of the HPV virus, the host could be asymptomatic for many years, clear the infection, or cervical dysplasia could develop. HPV prevalence is an integral component of cervical cancer’s etiology; although, DynSNIC’s vertex finite state machine is also capable of representing additional states beyond infection status, such as temporal pathogen dynamics (carcinogenesis). Presently, each vertex state machine in DynSNIC label HPV’s presence, susceptibility, or immunity (vaccination, other intervention or through cleared infection) in the host. We evaluate the impact of several disparate intervention strategies on HPV prevalence in the population. The simulator’s parameter space is gathered from (27). The demographic feature vectors are arbitrarily defined with five features, each feature with a integer value between 0 and 4. The discrete values are drawn from a uniform distribution. The use of a uniform distribution in the demographic features translates to a psuedo-”random” mixing due to the homogeneous nature of the population demographic strata composition. To determine the probability of natural infection a binomial is calculated with the chance of infection in one encounter ( $p_{i_k}$ ) and the number of encounters ( $\lambda$ ) which occur ( $p_n(i) = 1 - [1 - p_{i_k}]^\lambda$ ); similarly, the probability of breakthrough infection combines intervention efficacy ( $e_{int}$ ) and chance of natural infection ( $p_b(i) = e_{int} \times p_{i_k}$ ). The specific stochastic disease parameters include the probability of acquiring HPV in one encounter (0.08 male-to-female, 0.02 female-to-male), encounter frequency drawn from a Poisson distribution with a mean of 50, intervention efficacy is 75%, the age-range modeled is 50 years, infection clears after two years and 5% of the population is initially infected(27).

Population-level impact from three intervention strategies is evaluated; these include no intervention, vaccinating<sup>1</sup> only males, and vaccinating only females. An intervention targeting both males and females would be economically cost-prohibitive and not included in our evaluations. Each Monte-Carlo simulation is loaded with the parameter space described

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<sup>1</sup>Intervention coverage is 80%.



earlier, population size of 10,000 ( $|G_m| = |G_f|$ ), and executed for 30 discrete realizations (years). The impact of each intervention setting is averaged from ten Monte-Carlo simulations and the results are shown in Fig.4.10. Intervention results are analyzed by the relative reduction in prevalence (RRP) between no intervention and a specific strategy. Our results show a RRP of 75% (0.2 to 0.05 in female population) at the height of the epidemic when vaccinating females at 80% coverage and 75% efficacy. To date, no other social network simulator solely built on heterosexual intimate contacts has been developed for intervention analysis; however, much research has been conducted in this area using mean-field type and ordinary-differential equation models with similar intervention solutions. Hughes *et al.* cite a RRP of 0.68 with a range of 0.628 to 0.734; other models such as Sanders and Taira cite a RRP of 0.8 and above(55; 78). Endemic prevalence does not occur with our simulator; however, our results clearly show a reduction in prevalence within the RRP range of established models.

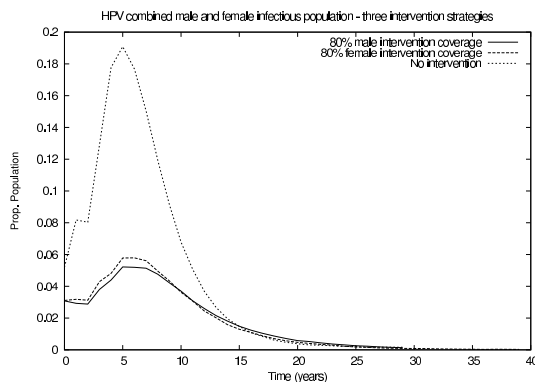
#### 4.7. Summary

Recent growth in the prevalence of sexually transmitted diseases and infections in developing and developed countries general population has prompted a great deal of interdisciplinary research to curb the population wide effect of these diseases. Public health professionals often have limited budgets and resources must be specifically tailored to achieve maximum results. The utilization of computational social networking tools would allow for those within the public health industry to anticipate the impact of demographic specific predictions, and tailor awareness, educational, vaccination, and prophylactic programs for the greatest impact within their population. With limited funding and resources available to help prevent infectious disease, public health professionals need tools to help them to make decisions regarding where the most effective measures would be taken. Sexually transmitted diseases and infections are, by definition, transferred among intimate social settings. Although the circumstances under which these social settings are established and maintained may vary, the common prerequisite remains an intimate level of social atmosphere. For this

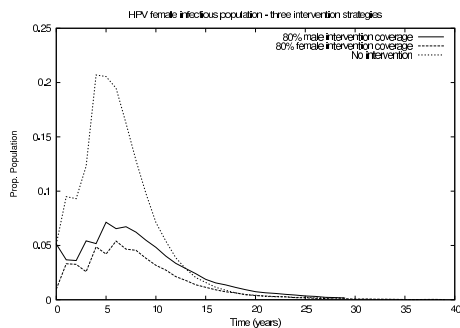
reason, the development of sexually transmitted disease mathematical and computational models must utilize a precise and efficient social networking tool.

Our social network generator is in the foundation phase of development and there is exciting future work to be accomplished. We analyzed the current networks which are generated by using only preferential attachment, solely cosine similarity and an aggregate of the previous two as the contact likelihood. The next phase of development will assign social demographic feature distributions other than uniform, such as Gaussian or Poisson to each node and combine preferential attachment with the likelihood of mixing between these social demographic groups. Evaluating several different contact placement options will lead to a more precise social network generated. Examples of these contact placement strategies

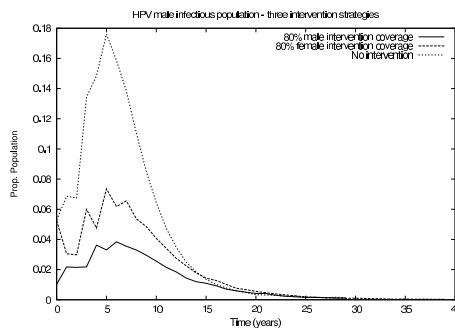
FIGURE 4.10. HPV infectious population per gender / three intervention solutions. 10,000 pop size, 10 Monte-Carlo, 30 realizations each run



(a) Combined male and female infectious population



(b) Female infectious population



(c) Male infectious population

include placing edges by randomly choosing a node from each bipartition subset and stochastically choosing placement, exhausting a single nodes total degree before iterating to the next node and exhausting only one bipartition subsets total degree. One future case study is to evaluate demographic disparity in HIV/AIDS prevalence in the population and the effect of targeted public health information programs. This setting will incorporate behavioral data from national surveys; such as, the National Health and Social Life Survey (NHSLS) the Center for Disease Control and Intervention's Youth Risk Behavior Surveillance Survey (YRBSS) and integrate concepts from information theory to study diffusion of information and the demographic-level consequences of that information, in the population (63; 40).

We introduced a novel algorithm to generate social networks of intimate contacts. The general algorithm generates a contact driven network with specific degree distribution and a dynamic population. Next a simple heuristic was introduced capable of performing bipartite matching in polynomial time reducing the computation power needed for the simulation from  $NP$  to  $E \log V$ . Several graph-analytic methodologies were introduced that facilitate evaluation of the generated social networks; in particular, bipartite graph statistics. Disease dynamics can then be analyzed on the generated networks along with tailored intervention strategies to provide what-if analyses.

**input** :  $G = (G_f, G_m, E)$  where  $E = \emptyset$

**output**: Maximally connected bipartite graph of intimate contacts

**begin**

**while**  $\exists v_m \in G_m$  and  $\exists v_f \in G_f$  s.t.  $d_{v_k}^o < \maxDegree_{v_k}$  **do**  
*in vertex order given  $v_{k_{id}}$*

choose  $v_m \in G_m$  s.t.  $d_{v_m}^o < \maxDegree_{v_m}$

loopCount = 0

maxReached = FALSE

**repeat**  
 inserted = FALSE

loopCount++

randomly choose  $v_f \in G_f$  s.t.  $d_{v_f}^o < \maxDegree_{v_f}$

$p_E(Attach) = p_{v_f}(k) \times p_{v_m, v_f}(mixing)$

draw a uniformly-distributed random number  $r$

**if**  $p_E(Attach) > r$  **then**  
 add  $E = (v_f, v_m)$  in  $G$

inserted = TRUE

**if** *!inserted and maxLoopsReached* **then**  
 arbitrarily choose  $v_f \in G_f$  s.t.  $d_{v_f}^o < \maxDegree_{v_f}$

add  $E = (v_f, v_m)$  in  $G$

inserted = TRUE

**until** *inserted == TRUE*

*in vertex order given  $v_{k_{id}}$*

choose  $v_f \in G_f$  s.t.  $d_{v_f}^o < \maxDegree_{v_f}$

loopCount = 0

maxReached = FALSE

**repeat**  
 inserted = FALSE

loopCount++

randomly choose  $v_m \in G_m$  s.t.  $d_{v_m}^o < \maxDegree_{v_m}$

$p_E(Attach) = p_{v_m}(k) \times p_{v_m, v_f}(mixing)$

draw a uniformly-distributed random number  $r$

**if**  $p_E(Attach) > r$  **then**  
 add  $E = (v_f, v_m)$  in  $G$

inserted = TRUE

**if** *!inserted and maxLoopsReached* **then**  
 arbitrarily choose  $v_m \in G_m$  s.t.  $d_{v_m}^o < \maxDegree_{v_m}$

add  $E = (v_f, v_m)$  in  $G$

inserted = TRUE

**until** *inserted == TRUE*

**end**

**Algorithm 2:** *optBiMatching*( $G'$ ) where  $G' = \{G_{m_{usable}}, G_{f_{usable}}, E_t\}$ . Connecting a bipartite graph minimizing remaining degree.

TABLE 4.5. Generated Social Network Graph Statistics

Statistic	$p(k)$	COSIM	$p(k) \times \text{COSIM}$
$m$	7693	7716	7742
$\delta(G)$	3.08-4	3.09E-4	3.10E-4
$\delta(G^*)$	1.54E-4	1.54E-4	1.55E-4
$cc(\text{Males})$	0.423	0.457	0.442
$cc(\text{Females})$	0.218	0.250	0.233
$cc(G)$	0.321	0.353	0.337
$cc_{\uparrow}(\text{Males})$	0.786	0.810	0.799
$cc_{\uparrow}(\text{Females})$	0.848	0.861	0.853
$cc_{\uparrow}(G)$	0.817	0.835	0.826
$cc_{\downarrow}(\text{Males})$	0.456	0.486	0.470
$cc_{\downarrow}(\text{Females})$	0.226	0.255	0.241
$cc_{\downarrow}(G)$	0.321	0.370	0.337

## CHAPTER 5

### CONCLUSION

Public Health professionals require computational support to study disease outbreak dynamics and to facilitate policy and decision-making. We presented a computational framework that integrates data from a multiplicity of source and utilizes specific computational modules that facilitate the study of outbreak dynamics through intricate what-if analyses, thereby enabling experts to quantify public health actions. Our framework facilitates the study of emerging and re-emerging diseases under presumed changing regional demographics or modified disease parameters and may be expanded to find application in the study of chronic disease manifestation.

Web and social media (WSM) provide a resource to monitor trends in population health. This thesis uses WSM to detect increases in influenza-like-illness. A method is presented which evaluates blog posts containing keywords influenza or flu and the results from analysis show a significant correlation with the beginning of US Fall 2008. This chapter's most significant finding is a significant and strong correlation between the frequency of flu keyword blog posts per week and Center for Disease Control and Prevention influenza-like-illness surveillance data. Additionally, categories, frequency and constancy qualitatively assist ILI trend identification in blogs. Strongly connected communities are evaluated and influential bloggers identified that should be part of an WSM outbreak response. These community or crowd sources could broker and disseminate important intervention information in the case of a infectious disease outbreak.

Partial motivation for this work includes providing a tool for epidemiologists to define solutions with the greatest impact on prevention of human papillomavirus (HPV) in a community. We addresses the public health need to assess the qualitative population-level in

disease prevalence due to arbitrary interventions, specifically, age and gender targeted human papilloma virus vaccine schemes. A human papilloma virus vaccine has been proven successful to reduce its prevalence in FDA clinical trials and the vaccine is available in the United States. Current intervention policy targets pre-teen females for vaccination; however, the expansion of suggested guidelines may extend to other age groups and males as well.

Physical locality, communication channels, family members, schools, churches and hospitals all operate as modes of interaction described in “what-if” scenarios; however, there has been little research asking what happens when many social forces act in concert, whether to arrest an epidemic via vaccination or quarantine. A person susceptible to influenza can contract the virus by being in close physical proximity to an infected and given a network of physical interactions the path of infection can be simulated using existing models. This thesis takes a first step towards predicting the effect of personal beliefs on the spread of disease. We mine web and social media to retrieve blog posts mentioning vaccination against the human papilloma virus. HPV vaccination blog posts from August and September 2008 are manually labeled as objective, or subjective (and corresponding polarity). A machine learning sentiment classifier is trained with the positive and negative subjective posts. The of sentiment towards HPV vaccines . Each post from October 1 2008 to the end of February 2009 that mention HPV vaccination is labeled by the supervised ML classifier. The magnitude of vaccination beliefs is predicted and knowledge garnered from this analysis is made available as additional features to infectious disease modeling and simulation.

Predictive models are important tools in determining disease transmission dynamics and effective vaccination solutions. With this in mind, a discrete-time model was developed to facilitate predicting impact on the reduction of HPV prevalence from arbitrary age and gender targeted vaccination. Our gender-targetted HPV vaccine analysis focuses on predicting HPV transmission in heterogeneous populations and measures the population-level impact of a HPV vaccine. Then we defined a simulation framework to generate social networks of intimate contacts. The general simulation algorithm generates a contact driven network

with specific degree distribution and a dynamic population. Next, a simple heuristic was introduced capable of performing bipartite matching in polynomial time reducing the computation power needed for the simulation from  $NP$  to  $E \log V$ . Disease dynamics can then be analyzed on the generated networks along with tailored intervention strategies and predicted personal beliefs about those interventions to provide what-if analyses.



APPENDIX A

SAMPLE ENCODED BLOG ITEMS FROM SPINN3R

## A.1. Influenza Related

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    upcoming events:&lt;br /&gt;&lt;br /&gt;ten days until my birthdaiye.
    i am getting old.&lt;br /&gt;&lt;br /&gt;spring break punta cana:
    wild and crazy fun with immediate family. whhhhhhoa. so excited
    .&lt;br /&gt;&lt;br /&gt;bring katie home to richland county!&lt;br /&gt;
```

&lt;br /&gt;road trip to carbondale for college fun with mitch.&lt;  
br /&gt;&lt;br /&gt; soooooo then summer. glorious, better  
be better than last summer, summer.

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## A.2. HPV Vaccination

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<h1>Green card applicants mandated to get HPV vaccine </h1><br>  
<p class="byline">The Associated Press </p><br>  
<p class="datestamp">Friday, October 3rd 2008, 10:06 AM </p><br>  
<p class="title">Dallas <a href="http://www.nydailynews.com/topics/Dallas">DALLAS &mdash; A new requirement that girls as young as 11 be vaccinated against a sexually transmitted virus before they can become legal <a href="http://www.nydailynews.com/topics/United+States">United States <a href="http://www.nydailynews.com/topics/United+States">U.S. residents is unfair, immigration advocates say.</p><br>  
<p class="title">Gardasil <a href="http://www.nydailynews.com/topics/Gardasil">Gardasil </a> to the list of vaccinations that female immigrants ages 11 to 26 must get before they can obtain <br>green cards.</p><br>  
<p class="text">The series of three shots over six months protects against the strains of the human papillomavirus blamed for mos

t cases of cervical cancer and genital warts. But the vaccine is one of the most expensive on the market and controversial. "This is a huge economic, social and cultural barrier to immigrants who are coming into America," said Tuyet Duong, senior staff attorney for the Immigration and Immigrant Rights Program at the Asian American Justice Center, Asia n American Justice Center. At a cost of \$400, Gardasil places an added burden on green card applicants already paying more than \$1,000 in form fees and hundreds of dollars for mandatory medical exams, advocates say. The mandate potentially affects tens of thousands of women and girls annually. More than 200,000 women and girls ages 10 to 29 were granted legal permanent resident status each of the past two years. Past efforts to require the vaccine for American girls has stirred emotional debate and complaints that such mandates intrude on family decisions about sex education. In Texas, lawmakers last year fought off an order by Gov. Rick Perry requiring the shots for sixth grade girls amid questions about vaccine's safety, efficacy and cost. Similar programs were proposed in many states, but only Virginia has signed such a mandate into law. "What surprised us the most is that this requirement is for immigrant girls and women, but not for the general population of natural



born citizens," said [Jessica Arons](http://www.nydailynews.com/topics/Jessica+Arons), director of the Women's Health and Rights Program at the [Center for American Progress](http://www.nydailynews.com/topics/Center+for+American+Progress); [Center for American Progress](http://www.nydailynews.com/topics/Center+for+American+Progress). Despite objections by immigrant advocates that the law is invasive and unfair, a spokeswoman for [U.S. Citizenship and Immigration Services](http://www.nydailynews.com/topics/U.S.+Citizenship+and+Immigration+Services); [U.S. Citizenship and Immigration Services](http://www.nydailynews.com/topics/U.S.+Citizenship+and+Immigration+Services) said the agency must enforce it. The [Food and Drug Administration](http://www.nydailynews.com/topics/Food+and+Drug+Administration); [U.S. Food and Drug Administration](http://www.nydailynews.com/topics/Food+and+Drug+Administration) approved the Gardasil vaccine, made by [New Jersey](http://www.nydailynews.com/topics/New+Jersey)-based pharmaceutical giant [Merck & Co. Inc.](http://www.nydailynews.com/topics/Merck+%26+Co.+Inc.); [Merck & Co., Inc.](http://www.nydailynews.com/topics/Merck+%26+Co.+Inc.), in 2006. Then last year, an advisory committee to the [Centers for Disease Control and Prevention](http://www.nydailynews.com/topics/Centers+for+Disease+Control+and+Prevention); [Centers for Disease Control and Prevention](http://www.nydailynews.com/topics/Centers+for+Disease+Control+and+Prevention) recommended the vaccinations for girls 11 or 12. For U.S. citizens, the committee's recommendations serve only to provide guidance on immunization issues. But a 1996 change to America's immigration laws required anyone seeking permanent residency to get all the vaccinations recommended by the committee. [Jon Abramson](http://www.nydailynews.com)

/topics/Jon+Abramson&quot;&gt;Jon Abramson&lt;/a&gt;;, who chaired the CDC's Advisory Committee on Immunization Practices, said the panel never intended to require Gardasil for immigrants and wasn't aware its recommendation would become mandatory.&lt;/p&gt;&lt;p&gt;Merck spokeswoman &lt;a title=&quot;Amy Rose&quot; href=&quot;http://www.nydailynews.com/topics/Amy+Rose&quot;&gt;Amy Rose&lt;/a&gt; said the drug company did not lobby the government to require the vaccine for female immigrants and that it wasn't aware of the mandate until after the rule took effect.&lt;/p&gt;&lt;p&gt;&amp;nbsp;&lt;/p&gt;

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APPENDIX B  
HPV TRAINING DATA

P Ghostpaw said: The sad and stupid thing is that when the govt. was looking at introducing an HPV vaccine, the option of using Gardasil and giving it to children of all genders was discussed, but ultimately like so much of the public health system the bean-counters got the last word and it was deemed 'not cost effective'. So why are only females being given Cervarix? Because it's cheap. No patriarchal conspiracy here, just accountancy.

P Not like you haven't heard it before (especially if you were hanging out with me this weekend) but vasectomies are totally safe . And because this is my blog, I'll tell you my opinion on vasectomies: I'm all for them. No one really wants me to go into it, but here's a quick rundown, from my perspective. Heterosexual women have menstrual cycles, and all that brings. They also bear the brunt of contraception, from what I gather. Further, they are the ones carrying and birthing children, often breastfeeding them. I don't feel it's an outrageous request for men involved with these women to consider vasectomies as fairly painless and totally reversible procedure. The article talks about how men are squeamish about their boy parts, a concern for which I have little sympathy. Somehow testicles became sacred, while women's fallopian tubes, uteri & etc became medically available. It's a procedure that Jamaican men , for example, do not use. You've heard it before . Speaking of uteri, you may know my obsession with this from my previous posts , but the Picture of the Day from DCist a few days ago was a woman carrying three fetuses in her two uteri . Awesome! Gardasil, the HPV vaccine, hasn't been cleared for use in women 27 to 45 . Generic Yasmin available; Planned Parenthood going upscale , and that little Romanian girl finally got her abortion. New way to freeze unfertilized eggs is better than the old way, in that eggs are more usable with this new method. And scientists are saying they will be able to create sperm and eggs from stem cells in the next two decades. And the animal story: coating birds' eggs with vegetable oil to keep them from hatching is a new method of population control in New York.

P     What if I told you that soon we could virtually eliminate cervical cancer? It's true. The U.S. Food and Drug Administration has approved a vaccine that could prevent many, if not most, cases of cervical cancer.

N     A pen pal sent me a tip about a new requirement for U.S. immigration applicants: "HPV/cervical cancer vaccine for women 11-26." Is no one at Immigration and Naturalization aware of the reports of worrisome side effects of this vaccine? Are we so afraid of 11-year-old girls coming here and spreading STDs that we're willing to risk their health? Just as with the Death with Dignity Act in Oregon, it seems the use of this vaccine is less and less about choice and more and more about pressure – especially for those who are most vulnerable and least able to speak up for themselves.

P     The Irish Cancer Society has welcomed the announcement that the HSE has been asked to prepare a vaccination programme against cervical cancer.

P     Let's say you have an 11-year-old daughter in D.C. public schools. She'll be a sixth-grader next year. You are reminded that she must be immunized before she will be allowed to return to school. She'll need the usual vaccinations against measles, rubella and chickenpox. But this time, there's another disease on the list, one that the D.C. government is strongly urging your daughter be immunized against: the human papillomavirus, or HPV, which is sexually transmitted. After all, your daughter is 11 and probably black, so the assumption is she'll be having unprotected sex in no time – but don't take offense.

P     I have said this before, and I will say it again many times in the future: anti-vaxxers are potentially the Number One health hazard in America. These are people who (very incorrectly) think that vaccines are linked to autism. It has been shown, conclusively, that no such link exists. Every time an antivaxxer is shown this data, they move the goalposts, claiming it's some other vaccine feature causing autism, or cite outdated and flawed studies. The problem (for them) is, you can show that the number of autism cases diagnosed is totally unrelated to vaccines. They deny this, they spin, they distract, but in the end this

simple fact proves them wrong. We need cines. We have stopped smallpox cold with cines. Rubella, measles, and pertussis can be stopped. Where antivaxxers have sown distrust in cines, these diseases have been making a comeback, and kids have died . Let me repeat that: children have died because they haven't been cinated. And when a large enough segment of the population doesn't get cinated, we lose our herd immunity, and more people die. This type of antiscience thinking is getting people killed. Yet on they go. There is a push to cinate babies being sponsored by the American Academy of Pediatrics , and the antivaxxers, led by Jenny McCarthy, planned to protest the press conference. Amanda Peet - who, in my mind, is a hero - was there, as well as other people who have an actual grasp on reality. I hope they're ready for the vicious lies some of these antivaxxers will spread. Ms. Peet has already had a taste of it. The Science Based Medicine blog has more on another line of attack by antiscience people including antivaxxers. This time, it's a mainstream medical news site that has been infiltrated by this nonsense, printing already-disproven claims attacking Gardasil, the cine that can prevent cervical cancer in millions of women . If you think this is a harmless group of cranks, think again. Cervical cancer kills thousands of women every year, and with cination it is almost entirely preventable (the cine protects against Human Papilloma Virus, or HPV, which is responsible for the cancer). Antivaxxers claim they care about people, especially, children - and I am very sure they do. But by being blinded by antiscience their effect is exactly the opposite. Antiscience kills . Educate yourself.

P One area in which religion and medicine collide is medicines which allow people to avoid or escape the consequences of behavior that can be categorized as a sin. There were those who had moral objections to birth control pills when they were first developed on the basis that it would encourage adolescents to engage in premarital sex, and even now there are those who think birth control should only be sold to married people. A more recent example is Mifepristone , better known as RU486, which is used as emergency contraception as well as an abortifacient (in larger doses) during the first two months of pregnancy. Many pro-life groups object to the drug, even when it is used as emergency contraception, that is

to prevent implantation rather than to induce an abortion. One objection to Mifepristone is that this safety net will lead to more people engaging in unsafe sex, which has many risks other than pregnancy. A recently approved vaccine, Gardasil, has been met with similar objections. Gardasil vaccines against several strains of the human papillomavirus (HPV) which are responsible for cervical cancer and genital warts. Gardasil is most effective before any exposure to HPV, and therefore there has been a push to vaccinate girls as young as 9 or 10. The main objection to this is that by taking away one of the risks of sex it will increase the number of teenage girls who are sexually active. Another objection to the widespread use of Gardasil is based on reported side effects of Gardasil, which include temporary fainting and dizziness, and possibly Guillain-Barre syndrome. There are many people and groups that have objections to medicines that deal with the effects of unsafe sex. Sometimes they will cloak their moral objections in arguments about the safety or efficacy of the drug. I believe that we should not take a moral stand at the expense of someone else's health or well-being. If you believe that teenagers should not be sexually active then you should feel free to try to convince any many of them as you like of the benefits of doing so-but don't try to ban or restrict the drugs that will protect those who do.

N      Years ago when I heard they were coming out with a vaccine for HPV it sent chills down my spine. In my mind I kept saying, please don't let these pharmaceutical companies do this to our girls, please don't. I'm not even a scientist and I know that these vaccines are dangerous, ineffective and kill

P      I finally got my third dose of the HPV vaccine. Did I tell you what happened? I may have. Eh, we'll Golden Girls flashback it: Ring, ring! Kelly: Hi Patricia, this is Kelly f...

P      Remember how in later Winter/early Spring of this year, I went ice skating in rented skates which gaped around my ankles, chafing me severely on both sides of my lower outer calves, skinning them and producing bloody, seeping wounds? And then they seemed to heal, then started to get worse, until the entire affected areas were swollen and severely



infected, and I was on hardcore expensive antibiotics for a month? Well, last Saturday I wore shoes I hadn't worn in at least a year, and their straps created new lacerations on my feet, two on my left, one on my right, all three of which by today were still growing deeper, larger, swelling, reddening, and continuing to seep fluid. I was able to secure a dr's appointment right away, and my new dr (old one left the practice) confirmed the infected state of my wounds, gave me the same antibiotic that I had last time, as well as my third and final HPV cine script, and a refill for my menstrual cramp painkillers - yes, did I mention it's day two of that lovely female time? While I am on the topic of medical woes, you may recall that I've had some issues with my feet swelling severely - a common sign of organ (kidney or liver, typically) failure. While I have no pain or other symptoms, the on and off frequency - at least a handful of times a month, often more, since early April - is still rather alarming. Luckily (in the ironic sense of 'lucky'), this morning my feet were quite swollen allowing me to exhibit this symptom. The dr agreed that the swelling warrants further investigation, so I had some blood drawn (thankfully, without undue trauma to my vasculature) for metabolic tests. This all set me back \$300+ in dr's fees, lab costs, and prescriptions. I'm on a handful of meds, I injected myself again in the ass with the cine, and though this time it was rather painless, I must have hit a minor vein as bright red blood splattered out from my upper glute as I sprawled on the toilet-paper canvassed CVS toilet seat. Fortunately, it clotted immediately and the injection site is now barely noticeable, so I'm not worried about that. And of course, I couldn't sleep last night, I missed my damn 3-day late, anxiously anticipated book delivery while at the dr's, and I feel cracked out and sore and decrepit. /whine

P Let's get something straight: I am not against a cine that prevents strains of the human papillomavirus, as some readers have contended. Nor am I for cervical cancer, which is caused by the sexually transmitted HPV. However, as my previous column on this subject indicated, I am opposed to the government mandating the cine. I say leave the role of strong-arm drug pusher to the thugs on the street.

P David Gorski catches Medscape recycling pseudoscience about the HPV cine Gardasil and does a characteristically thorough job of debunking these claims.

N HPV cine Could Come With Bad Side Effects. As I've said before, if your family has any sort of history with autoimmune, do some research first.

N I know there is a lot of interest in the HPV cine by Merck. There is a lot of controversy, and I've written a couple blog posts about it, noting the potential side effects. NVIC has a great article they put out a couple years ago, and there are quite a number of news stories surfacing reporting on the side effects women have already had around the world. Now, the short term clinical results for Gardasil have been relatively good. Depending on where you find the information, it has been reported to be anywhere from 92-100% effective in preventing the types of HPV it is supposed to. Let's consider this: there are about 40-60 types of HPV. some that cause cancer and some that don't and resolve on their own. About 20 or so are known to cause cervical cancer. Gardasil only protects against 4 of those strains. 4!! This is not a miracle cine. Just because someone has received the Gardasil cine does not in any way mean they won't still contract HPV. When you take into consideration how many people are infected with HPV in the U.S. alone. the cine does not guarantee safety. Let's also. take into account the efficacy of a pap smear. I was reading a book (How Doctors Think), and it mentioned how a pap smear was only 60% effective. And. inter-examiner reliability was astonishingly low. Meaning. that if two doctors looked at the same sample, they would disagree more than half the time. I forget exactly what this figure is. So. maybe we should redouble our efforts to making a more effective screening test. About 3700 lives are lost due to cervical cancer in the U.S. This is very unfortunate to be sure. On the flip side, how many young girls could end up with autoimmune diseases because of the cine that take their lives? The answer is. we don't know. I bet you its a high number. For those parents or young women thinking about getting the cine, consider this: those 3700 deaths each year and the 10,000 new cases of HPV each year are largely women from a lower socio-economic class. They don't have regular access to health care and don't get those 60%

effective pap-smears every year like the other 80-90% of us do. If screening programs (with a more effective pap test) could reach those additional 10-20%, those 3700 lives could probably be saved. Interestingly enough, the Gardasil vaccine can cost anywhere from \$300-\$800 for the whole series. This vaccine still isn't reaching the people with the highest likelihood to die from it. Will Gardasil save us all? No, it won't. It can cause more problems than we know about, and the women that need regular care aren't getting it. Most types of HPV, even the cancer causing kind, can resolve on its own. Even a CIN 1 or CIN 2 (different gradings of dysplasia) can still resolve with a healthy lifestyle. A CIN 2 has a 75% of clearing on its own with no invasive procedure. And, dysplasia is NOT a death sentence. I know it can be scary. I consoled a 23 year old young woman last summer who just found out she had HPV. Luckily, there was no high grade dysplasia and not even a need for a biopsy. You know what she will do, though? Go see her doctor every year to keep tabs on it. That is the biggest thing with preventing cervical cancer from developing. Checking its progression. I spoke with a doctor close to downtown Detroit who works at an OB/GYN clinic. She says most of her patients end up with more serious complications because they do not follow recommendations and don't keep their appointments. The thing that will save us women: More effective pap tests Reaching the 10-20% who do not have regular access to health care Checking any progression on cell dysplasia before a LEEP, conization, etc is performed I truly believe that the power of positive thought can go a long way in preventing sickness. Of course, we can still get sick. but the power of our attitude certainly helps to shape the outcome.

P Cancer has long been a disease that is both feared and shrouded in mystery. It has, and will, touch the lives of every Australian somehow. Today there is no miracle cure or antibiotic for any form of the illness, or is there? An Australian professor, Ian Frazer, has successfully cultured a vaccine called Gardasil which stops the development of Cancer of the Cervix. The nation wide immunisation program for young women began in April in Australia. health practitioners agree it will diminish the number of of future Cervical cancer cases dramatically. This is a huge step in Australian medical history and a significant

milestone in our fight against the big 'C'. Have we finally penetrated the lines of medicines biggest enemy? Kate Lyon investigates this medical phenomenon and what it will mean for Australian women.

P Dr. Jeffrey Terrell Should my 14 year old daughter have the HPV cine (Gardasil)? Dr. Jane Nicholson Is cracking your knuckles bad for you? Dr. V Ogenovski I'm a 52 year old runner with knee pain. My doctor says I have runner's arthritis. What can I do to keep this from worsening? Dr. Jeffrey Housner My wife keeps telling me that I should eat more fish. Do I really have to eat fish to have a healthy diet? (Please say "no"!) Dr. Rob Lash I have to fly to China every 1 or 2 months. Do I have to be concerned about Avian Flu when I travel? Dr. Cary Engleberg I'm trying to lose weight. What can I do to help reduce my craving for carbohydrates and sweets? Dr. Elif Oral My mother is in her 70's and has a recurrence of Hepatitis C. What can be done to help her? Dr. Rebecca VanDyke

P So, I'm due for my last series for this cination. I mentioned this to my dad, and he got all worried and said Cyndi's found stuff that this cination is bad and now she feels sorry she had her daughter get cinated (her daughter is 21, btw). I went and looked at some reports, and found that there have been 11 reported deaths that aren't completely linked to the cine. In addition, several women have reported miscarriages and fetal abnormalities. Which I think is stupid because it says you're not supposed to get the cine while pregnant! Anyways, I think if you look at the big picture, the chances of death by side effect are slimmer than the chances of getting HPV and cervical cancer. And the girls who have died are much younger than me, leading to the fact that they might have been suffering from an undiagnosed medical problem that just happened to coincide with the timing of receiving a cination. The one report on a girl I read had received the last cination 2 days before her death, but the autopsy report couldn't find cause of death and the medical examiner believes she may have an irregular heartbeat. Anyways, I think I'm safe, and if I feel anything bad after my last one, I'll call up my doctor. And speaking of, my stream of consciousness is an a Scottish accent.

N      Ok girls, I know you've all seen the commercials for Gardasil this cine that's meant to treat the human papillomavirus (HPV), but what you haven't heard is the devastating side-effects

P      Last Tuesday, Amanda Peet, cination advocate and actress, had an interview on Good Morning America where she tore apart the anti-cination argument point by point. It was a brilliant showing of a lay person explaining the science behind our big media topic of the minute and still saying "Don't listen to me; I'm not a scientist." She also discussed people's innate ability to mistrust any group of experts, especially those trying to save their lives. Here is the link . You can see the interview there (I don't know where else to find it). While it really sucks that celebrities are the ones with the loudest voices in these debates, and while scientists everywhere are really trying to bolster the proper claims for this one, it is great that someone is standing up to Jenny McCarthy and the Anti-vaxxers. Again, cination is the only way our species can stave off such horrible diseases as hepatitis A and B, rubella, meningitis, diphtheria, tetanus, and human papillomavirus. Human papillomavirus! That's a cine that can prevent cervical CANCER!!! These are not all the viruses that can be stopped, but some big ones. I know I sound preachy, people, but its really important. It is not an exaggeration to say that getting cinations will greatly improve the continues survival of our close-quarters species as it exists.

P      I went this morning (at 9:00. on a Friday. ewwww) to go get the second cination out of the three-cination anti-HPV/cervical cancer thingy, and I wasn't so worried about it. The first installation barely hurt at all, I just slightly felt the needle a bit. So I walk into the room, the doctor gets the shot ready, we chat a little, you know, the awkward fill-the-silence chat that goes on when you don't know someone and there's like a thirty year age difference, and then she starts administering the shot. PAIN! SHOOTING, SHARP, INTENSE, PAIN! I sat there whimpering the whole time because it hurt so bad-worse than any shot I've ever gotten in my life-and the doctor was going "I know it hurts. it's okay, it'll just be a few more seconds" and finally. it was over. I had to rub it afterwards, which REALLY HURT

SOME MORE but at least it stopped stinging so bad. Then I nearly passed out and my stomach started hurting really bad, like I was going to throw up, and the doctor's standing there going. wtf. haha I am not kidding, I almost blacked out after the shot. I don't think it was the needle, because I usually don't have problems with needles as long as I can't see them going into my body, and I didn't watch that one. I just had some sort of sudden severe reaction. Odd. Anyway, I had to lie down for ten minutes and the doctor is running around, putting wet towels on my face and the back of my neck, etc. She was sooo sweet about it, treated me like I was her kid. I like nice people that take care of me randomly. So that was my big adventure for the day. The end.

N Many of you know how I feel about cines. And I am lucky my parents chose to never cinate me or my sisters. And I thank them greatly for that. What is scary about this new HPV cine is that

N There's a lot to that tshirt. I made it for a number of reasons. Mostly, the purpose was to make a little cash and to get a point across to people. We all need to remember and learn from our past mistakes, generally speaking, of humanity. The drawing deals with issues of our overweight society, the media, genetically modified food and of course MONEY. There are lots of injustices in our society today... and there are so many people unnecessarily captured in the aftermath. While watching CNN this morning, a story aired of a young black girl whose parents thought it was a good idea to give their child (an 11 year old) the Gardasil cination. Well, after a few days she started getting a rash and then after a couple months all her joints ached, she had no energy and the swelling had worsened. The news anchors, flooded by reports of this type of thing, are beginning to question their advertiser's motives and the possibility that the pharmaceutical companies may in fact be harming a significant portion of our population. From the report on Gardasil, the anchors began talking about the shocking wave of Autism that's sweeping the country, and how that disorder seems to coincide with cinations in the 18 month - 2 year old child demographic. Why do we put up with this? As a public, as a 'free' country, our fellow Americans should

be mad as hell. Autism alone occurs now 1 in every 50 (probably in the 40's now) whereas it was 1 out of every 25,000 back in the 1970's. Sure, there are a variety of factors that can be up to question, but the main point is the cinations. They are the problem, not the solution... and if they CAUSE health problems then certainly the only way to stay alive would be to take drugs that the big pharmaceutical corporations manufacture. Or at least that's a logical way to think about it. Barbara and I were listening to a radio show the other day concerning health issues and since both our father's died of cancer, we were all ears. Our experiences with the disease gives us a different perspective I think. I am mad at the medical world for treating my dad in the accepted manner. I don't think he was given a wide range of possible cures or alternative treatments. Instead, my father - being an engineer - decided to go to Johns Hopkins and take their advice and treatment. It ended up not working out... but I've read about so many different ways to treat the disease after the fact. Everytime I hear about cures, treatments or whatever, I get upset because I know that there's at least one commercial on every major network per hour that asks for donation for cancer research. There is a simple way to cure cancer, and people I know have done it... but eating right, taking supplements, changing your lifestyle and so on are not the way for corporations and the medical profession at large to make a healthy . So, people will continue to be poisoned and die when they could more than likely cure themselves with the right mental attitude and diet change. I know this may not sound reasonable to some people, but I've read so much on the subject. Plus, all one has to do is watch television to see where the big industries are. Oil, entertainment and health care. Cancer research is a big one - and cancer is the fastest growing disease in our lifetime... but I still think something dark is happening behind the scenes and that there's a cure out there..... but the money isn't going to let it come out. There's much more money to be made in treating symptoms than curing the problem. That's life.

P Last week, Orac reported on Medscape's execrable article regarding Gardasil. As a reminder, the article spouted every anticination lie imaginable. The link subsequently

disappeared, although a poll later appeared that parroted the article's misinformation. Well, today Medscape has a new Gardasil article . It's definitely an improvement, but still has some problems...

N HPV cine Gardasil: Is is safe? The answer is no. Read the information she posts. Its the same rumors I was reading when I investigated getting the cine myself. Including Guillian-Barre syndrome. Every time I think about this cine I really want to rage at someone. Because I had to argue with my doctor, and then that stupid nurse lied to me. Because of that, that lie, I resolved I would never get it. Anything that I can not be persuaded to do based on the truth, is not for me. Based on this information today (and the info might change so my opinion might change) there is no way I would give this cine to my young daughter. No way. Bravo Ms. Morgan ... keep getting the word out. We have to stop the government mandate. Next on Blog Her at a glance ... Birth Control For Men . I'm all for birth control for men. Especially for high school boys, or men in college, because I've known far too many girls who's idea of a committed relationship was a trapped pregnancy. And current methods of BC just don't keep our boys safe from predatory women. And I think what this boils down to, is a men's rights issue. Because for so long, pregnancy and reproduction has been the bastion of women. Abortion debates rarely involve men, because they've been told it's a woman's body to do with what she pleases, regardless of who's genes she is carrying. To a point in the article, when the pharm's say they don't think there's a market for BC for men, I think what they mean is while they know men could probably use it, men probably won't buy it. Because men (if you know any) don't go to the doctor preemptively. Unless it's over the counter, men probably won't use it. Which brings up a whole different conversation. Next ... Gender and Extramarital Affairs . I'm really confused by her post, but I think I disagree with her completely. But this is something I've been thinking about lately. Do all men cheat? Because watching TV these days, seeing movies, all men, apparently, cheat. I have this to say: marriage - it takes work. Monogamy - it takes work. Having an affair is a conscious decision. But physical infidelity is only one kind.



There is emotional infidelity, financial infidelity, etc. All of these are just as damning as the others. And all of these are conscious decisions. And I don't think they are instinctual. I think it's laziness, and fear of work or conflict at home. I disagree with the blogger's overall message, that marriage is an unnatural state. Marriage is hard. And things that are difficult typically require sacrifices. And if there is one thing that contemporary society is against, its sacrifice. In my experience, the things that are hardest are usually the most worth doing, and the most rewarding.

P Being an HPV suffer I was recently asked about my views on Gardasil. I didn't have to think long and hard about my response. HPV is Human Papilloma Virus. The CDC describes it as: "Genital human papillomavirus (HPV) is the most common sexually transmitted infection (STI). The virus infects the skin and mucous membranes. There are more than 40 HPV types that can infect the genital areas of men and women, including the skin of the penis, vulva (area outside the vagina), and anus, and the linings of the vagina, cervix, and rectum. You cannot see HPV. Most people who become infected with HPV do not even know they have it ." I highlighted that last line for a reason. Most people do not know they have, this right there should scare you to death. I found out I had HPV 9 yrs ago. My pap came back abnormal and with mild dysplasia. The Dr recommended a biopsy and then to have the bad cells frozen. I was shocked. I had never had any inkly that anything was wrong. No abnormal bleeding, no pain during intercourse, nothing. When I asked my Dr " how did I now know?" she informed me that most women do not know. I scheduled the appointment for the biopsy and went home and cried. What if I had cancer? What would happen to my husband and family? I spent the next two weeks scared out of my mind. The biopsy was painful, not gut wrenching screaming at the top of my lungs painful, but painful none the less. I was lucky and the cells were pre-cancerous. I went ahead and had them frozen so that they would scuff off and hopefully never return. I had re-occurring paps every 3 months, then every 6. Each pap came back clear and I was given the OK to return to the normal routine of 1 pap every 12 months. I was also given the green light to be able to

start trying for a baby. That was the best news of all. The road to conceiving a baby was bumpy to say the least. I already had a 5 yr old son so this should have been a walk in the park. It wasn't. After 12 months of some serious attempts at baby making, we were at a crossroads. Why wasn't I getting pregnant? DH was totally supportive and offered to have his swimmers tested. It came back that all the little soldiers were up for duty. That left me. My Dr said that there was a remote chance that the HPV could be hindering conception. You could set your watch by my ovulation cycle so that wasn't it. She scheduled me for a HSG test. She patted me on the leg and told me she was sure that nothing was wrong and that a good majority of her patients conceived 3 months after having the test. That made me feel so much better. She did warn me that it would be mildly painful and I might want to take some IBU prior to the procedure. Let me tell you she was not kidding. Holy Mother Mary of God it was painful. Somewhere between horrendous menstrual cramps to having you teeth pulled without Novocaine. Thankfully my tubes and uterus were clean and I was good to go. So again, the nagging question, Why wasn't I getting pregnant? Well God answered and 3 months later I was pregnant. Only problem was between the procedure and conception was an abnormal pap. Yes that is right I was back to square one. The Dr told me that there was nothing we could do since I was pregnant and that we would have to wait until after I deliver to proceed with treatment. So I spent the next 8 months worried about what else could be growing in my body other than my beautiful baby. Our son was born 4 wks early and spent 10 days in the NICU. He came home healthy and happy. We were pleased beyond words. Still the nagging question kept radiating in my head, "What if it is cancer?". I was lucky, that pap and every pap since came back clean. I have been lucky to have no re-occurring dysplasia. What I would not have given to have Gardasil available 20 yrs ago when I became sexually active. What I would not have given to spare myself and others like me the pain and uncertainty of suffering from HPV. While I am thankful that the cine is available, I am not so blind to think that it does not have side effects. I think that every women has to weigh the good and the bad. I think that every parent has to do

the same for their daughter. I am not an advocate for forced cination. I think that it should be an individual choice. This is not something to take lightly and should be investigated thoroughly before moving forward. I can just give you my one voice as a suffer of HPV and give a little insight to how it has affected my life. I hope that everyone who is faced with this choice gives it as much consideration as humanly possible. It might save you life or the life of one of your loved ones.

N Healthsifter goes on the occasional pro-cine rant, but this article in the LA Times airs the doubts that people have raised about the anti-HPV Gardasil cine. Do the benefits outweigh the risks and the costs of the 3-shot series? Will recipients be lulled into complacency about cervical cancer screening? Does Gardasil actually prevent cervical cancer? Here's a snippet of that article: "The price may not be worth it, says Dr. Karen Smith-McCune, an obstetrician and gynecologist at the UC San Francisco School of Medicine. Because it takes years for cervical cancer to develop, it is easily preventable as long as HPV infection is detected early. Though the cancer is common in developing countries and kills more than 280,000 women worldwide every year, it is much less of a health threat in the U.S., she says, where 11,000 women are diagnosed with the disease annually, and about 3,700 will die of it. The comparatively low U.S. incidence of cervical cancer is due to one of the public health system's triumphs: widespread use of Pap smears, which detect abnormal cervical cells so they can be removed before they turn into cancers. Adoption of the Pap test caused a reduction of cervical cancer rates by 74% between 1955 and 1992, according to the American Cancer Society. Rates continue to drop by 4% each year. Smith-McCune and other critics of Gardasil also note that up to 90% of HPV infections in adolescents clear up on their own – meaning that cervical cancer will not develop even in most women infected with the most aggressive type of HPV. In other words, a woman's risk of developing cervical cancer is already extremely low, and the immune system normally makes short work of HPV without outside help. Even if women get the cine, they still need to continue annual Pap screenings because they could contract other cancer-causing HPV strains that the cine does

not fight. "The crux of it is that we know how to prevent cervical cancer," Smith-McCune says. "One of the key questions is whether this huge outlay of money for the cine is a better strategy than reaching out to the women who aren't getting Pap tests and follow-ups."

P So yeah. Most of my stuff is already packed up and in the Ceramics studio, thanks to Danielle's help yesterday. The rest of it will be put away probably Friday. Tomorrow, I'm going to watch Mila (the Russian baby) again, after about 2 weeks' break. Even if her American grandmother doesn't mind her speaking only Russian for now, she sure was rude enough when I was trying to speak Russian to her, interrupting me and speaking loudly in English. Mila is cute, though. I don't like children, but don't mind her - she is wise and does not cry for no apparent reason. Friday is my first day to animal-sit and house-sit. I'll probably stop in to feed them on Friday, but won't actually put my stuff there and stay until Saturday. Saturday, I'm borrowing the zipcar for the whole day. It'll be handy to move my stuff with. After this, I've got a few errands, but then I'm off to Easthampton to see Rachel the cutie from Paris!!! We will very likely go to the Holyoke mall, where we will very likely see Danielle. Jon might also show up (?). I'm excited. I'll be so lonely here for the next few weeks - all the other students are gone by now. Thus, hanging out will be hawesome. Perhaps while I'm here all alone, I'll be motivated to go see the museums around here. The Clark has a whole freaking new building I haven't seen yet, and WCMA's got a few exhibitions. If I can get a ride out there, maybe I'll get to MASSMoCA, too. I should paint as well, and maybe I'll squeeze in a sculpture, even though I'd have no model to work from. As I tried to battle the healthcare system today to get an HPV cine injection, I realized once again how freaking stupid it is. They won't start me on the series at any old office, it has to be my primary care practitioner (which I don't have). I swear, it's not like I'm going to keel over, die, and then sue them, it's just a shot! Really, what would be the harm in me just injecting myself with it? Besides the fact that I don't know the particulars of administering this cine, I could totally inject myself. I feel like in Russia, if you know a

nurse, they would just do it for you at home, the only qualifier being that they have practice with sticking needles into skin. Buh, anyway...

P Gah. So I went to the doctor back in July. It was a new doctor for me, as I hated the current primary physician on my insurance plan. Well, I forgot to call my insurance provider to tell them I was switching doctors until a few days after the appointment. I told the agent on the phone that I had forgotten to call and specifically asked if I would still be covered. She told me that as long as the appointment was within 7 days of my call they would cover it. Today I received an invoice from the clinic for \$679.00. Holy shit \$679.00 for blood work and to talk to the doctor for 10 minutes? That is insane. Now I'm calling my insurance provider and I'm being told that they don't go retro active and they refuse to pay. The lady is practically yelling at me telling me that I will be fully responsible. This is total bullshit. I don't pay for insurance not to be able to use it. I'm so irritated. Now the lady has me on hold while she reads my policy. I completely understand that I forgot to call prior to the appointment, but if the agent told me that it would go retro active for 7 days, then they need to stand by that. There is no way in hell I'm going to pay this entire bill on my own. Duh. Now the agent comes back on the phone and tells me, "I've located the information on your policy and the previous agent was correct." OMG. retard. She didn't even apologize. But she did tell me the only thing that will be covered is the actual visit, because my blood work was done prior to the 7 days. Still so dumb. Just the blood work alone was \$219.00. The rest was all from the visit and the cines he gave me. \$185.00 just for the HPV cine and \$25.00 for the nurse to administer it to me. I could have given the shot to myself and saved a little. In better news, now that it has started dropping below 90 f at night, my lawn is starting to turn green again. Yay! And because this post needs something pretty, here's a picture of aliciakay85 's wedding cake, which I decorated. And for something funny, Philip's friend Chris participating in a bounce house boxing tournament.

N A lot of the nurses here had warned against the Gardasil cine, which I was never really considering, but I heard a lot of outrage from people that I told I would never

get it for my girls if I had any. Now I'm glad I feel that way. We just received a bunch of studies surrounding women who got Gardasil shots and had spontaneous abortions of their fetuses, serious reactions or death. They are considering pulling it completely. Of course any shot comes with reactions and any cine comes with risks, but isn't it frightening that some places were considering making it mandatory? Way to go, FDA! =P I'm looking for the link to the article and then I'll post it.

N PLEASE REPOST YOU CAN SAVE ANOTHER WOMENS LIFE AND FAMILYS LIFE FROM BEING DESTROYED- THIS IS SO HORRIBLE AND THE CINE ADMITS IT ONLY PROTECTS 5 OUT OF OVER A HUNDRED STRAINS OF THE HPV VIRUS!!!!-...

N I forgot to mention earlier that I need yet ANOTHER shot – a hep A cine. I'm ok with this. I'm also getting the HPV cine. Better safe than sorry, right? It's pretty expensive, but my plan covers part of it. So that's good news. I also spent only \$10 today on coffee and lunch. Impressive! I went for a side spinach salad and it was actually quite substantial (like half a baggie of salad-ready spinach from the grocery store, plus some berry fixings). Doing good so far this week. :) Anyways, I was surfing through new fall lines today and I have to say... I'm not too impressed. There's not much I actually \*want\* to buy aside from the cardy boots. However, I did compile a short list of neat things that I'll probably eventually purchase in the next couple of months. Only four because I couldn't think of 5 things I really want! 4. A tinted moisturizer with SPF. I'm intrigued by Lorac's offering – good range of colours, and it's oil-free and supposedly good for sensitive skin. Ohh, living within walking distance of Sephora is a lovely thing. ;) 3. A feminine plaid shirt from the GAP. You know, I haven't purchased anything from the GAP in YEARS. It used to be a favourite haunt in high school, and then it just got kind of... drab. This, however, is a cute shirt that would look great on it's own, with a cardigan or with a vest. 2. Benetint. I love this stuff. It's fun to paint onto your lips, and the stain is lovely – nice and rosy, but not too red. It's very natural looking as well. It's also good on your cheeks and has surprisingly

good staying power! Anyways, my little sample bottle of this stuff is running low, so I'll likely purchase a full one once it runs out. 1. MY UGG BOOTS. I don't care what people say, I love UGGs. I suppose living in a climate where wearing UGGs isn't totally ridiculous helps. But these boots are just too cute for words. I've always had a thing for sweaters, so sweaters and UGG boots? A match made in heaven for me. Since our falls are fairly dry here, I can probably get good use out of them until the weather gets a bit more wet (snow! boo). And even then, I could wear them on dry winter days. And spring days. I MUST buy these boots, even if it means I'll be eating ramen all next month. So, friends, what are your fall must haves? Inspire me!

P So here I am on my day off... at work. Wait that doesn't make sense. But, alas, here I am anyhow. It's ironic, because as I was coming up Poway grade from Target at 6:45ish this morning, I was musing aloud to Kris that sometimes I just don't know what to do with my days off. All that free time, and nothing to do... no wonder I work two jobs, at least it keeps me busy, you know? And as I wondered aloud what to do with my day, my cell goes off. It's a text from Shelley, telling me she's sick this morning and could I please cover her at the office? No problem, I say. I'm that kind of girl. So I guess I found something to do on my day off. Work. Oh well, can't complain about the paychecks. And with Ryan busy with family today, my time is mine to waste as will, whether it be work or otherwise. The other thing I want to do today is see if I can't just finish this damn book I haven't touched in weeks. "hard-boiled wonderland and the end of the world" it's actually pretty cool, but who's got time for reading? I'm about 80 pages short of the end, I might even be able to finish it before I leave work today. Theoretically, I should only be filling in for a few hours, Michele said she'd be in as soon as she pulled herself together. Then I can go home and do some laundry, and maybe get some game-time in, as I haven't got any new movies in at the moment. I guess I could kill that last DBZ disc. So I'm at the doctor yesterday, and for whatever reason he gives me a tetanus shot, and my arm hurts like a MOTHER. Work last night did not help one little bit, left arm is my primary pushing arm and I was in the first

spot on the line so there was plenty of pushing to do. ouch. OUCH. But whatever. The doctor told me I had a staff infection and thats the best news I've gotten in a long time, and I'm not going to tell you why. In fact, I may have already told you too much. And I signed on to get that series of shots, Gardasil or something I think its called, thats like a sort of cination against certain kinds cervical cancer, and the doctor says its only slightly more painful than tetnis shots. Yikes. Life goes on.

N As Many As 18 or 19 Girls Dead After Using GARDASIL (the cervical cancer cine against HPV) Since March 2007 (this is a short PDF, for a change, and easily skimmed through quickly) In response to one of our commenters, I've modified this post but do not agree it should be removed. Thank you for pointing out what I didn't have time to review: there were edited secondary reports among the cases in that first link and so there are only 18 or 19 actual women or girls reported. The Judicial Watch report summarized as follows:Gardasil is still in the testing stages, and will not be fully evaluated for safety until September 2009. VAERS reports show that as many as eighteen people have died after receiving Gardasil.One of the reports mentions two women who died. Also, there were several reports by licensed medical professionals who were not or may not

P Dan came over last night and it looks like we are going back to skool in a month! Next week I have to go get a physical, TB test and HPV cination but other than that I've just got to pay Russ and

P three bodily functions that are most embarrassing for me during a presentation: farting, getting my period and leaking breastmilk. let's just say i neither farted nor got my period. about an hour ago during a presentation on my recently published article on the HPV cine legislation, one of the participants walked up to the podium and handed me a note which read: "your blouse is wet." i died. i'm pretty good at layering when i'm lactating, because i tend to get really engorged and leak when i've been away from my baby. fortunately, i was able to conceal the leaking with my jacket and scarf, scurry off and change. damn. damn. damn. \_\_\_\_\_ i remembered when i attended the society for



adolescent medicine conference in 2004 and a presenter leaked during a presentation. she basically said, "these are pediatricians, i'm not too embarrassed by it." ok. word. but, for some reason, i don't have that degree of comfort when the "leche levees" break. and i will NOT be posting this on facebook.

P I just devoured a book that Tiana lent me which was written by a doctor specializing in Infectious Diseases. It was basically like reading a horror novel; what made it so fascinating and terrifying was the fact that these diseases exist. Most of them are not even uncommon. Now I not only harbor a fear of contracting a parasitic worm by eating meat, I'm scared I might get a brain parasite from eating salad. I'm afraid my innocuous heart murmur will lead to endocarditis. I'm way too much of a hypochondriac for this shit, but I just couldn't stop reading! I propose this (only half-joking): a cine party! Sure, we probably couldn't do it all at once, but I think all of you who have not had chicken pox should definitely get the varicella cine. Some meningococctus shots all around. And a special dose of HPV cine for the ladies. I know life is too short too worry about the terrible aspects of it, but that has never stopped me before. I'm going to be one of those people who builds a bunker in case of biological warfare, another terrifying possiblity in our lifetimes. But if I do, you're all invited! We can live off of supplemental pills and DVD's, laughing at Golden Girls through our gasmasks!

P What ever happened to the separation between church and state? According to an article in the Scotsman, the CATHOLIC CHURCH had a hand in deciding that 30,000 young Scots girls (12-13 years old) were NOT to be given sex education when given the cervical cancer cine. It might be worrying, but it is fact that many are sexually active at this age - but who are we to say whether its right or wrong? Girls this age were married off not so long ago....more information leads to a more informed decision surely. The church needs to get its dirty little paws off business of the state and for shame on the SNP for bowing to church morality. This is just another example of the church not knowing its place. It described the Embryology Bill as "monstrous" and "Frankenstein science", when

the legislation is the most progressive in a century and could be truly revolutionary. The Church needs to go back to preaching - preferably things that are ACTUALLY IN THE BIBLE. Parent's groups are quite rightly not amused.

N I listened incredulously yesterday as the news on the radio announced that the American Academy of Pediatrics is now recommending that powerful cholesterol-reducing drugs (i.e. Lipitor) to be used on kids. Dr. Ronald Hoffman , prominent NY complementary medicine practitioner/author/radio host/lecturer has this to say about it: "Pediatric statins are the worst idea since those chocolate cigarettes they used to give us as kids." He goes on to say: "These ham-handed guidelines will ensure that millions of kids are enrolled as lab rats in an experiment of unprecedented proportions. While statins can help a limited number of older people with demonstrable cardiovascular disease, their use to prevent disease in otherwise healthy individuals is a total EXTRAPOLATION (Translation: a wild leap of faith). They seem to work best in people with high calcium scores or angina, after a heart attack, bypass or stent, and in middle aged men. NO research shows they work in children, and it would take fifty years of careful study in thousands or even millions of kids to prove they provide one iota of benefit." Read the full article. I hope that this recommendation will encounter as much resistance as Merck's Gardasil, the pre-pubescent HPV cine. All this reminds me of how important Food Matters is. That's the film that the Healthful Living peeps and I are screening on 7/17 at the Randall Museum theater here in SF. One of the things it discusses is the enormous influence of the pharmaceutical industry on regulation and medical practices. Are you coming? I see that some of you signed up. It's sold out but I'm sure we'll have a few seats available at the door. Come early to get on the waiting list. Plans are coming together for a panel discussion with some docs and nutrition experts after the film. Should be a worthwhile evening.

N Okay, liberals, it's "real" now. CNN, the Clinton News Network, is reporting on the problems with the Human Papillomavirus (HPV) cine Gardasil. Some 9,749 adverse

reactions and 21 deaths have... Peruse Dakota Voice for a wealth of information on this and many other topics...

P I really hate the Catholic Church for many reasons and after this news I certainly won't be changing my mind any time soon. I've been following the debate over cervical cancer vaccinations closely and whilst I'm not going to get into the Gardasil vs Cervarix or the should we be vaccinating boys too, I am outraged by this absolute fucking disgrace. The patient information leaflet handed out to girls when they get the jabs will not have any mention of condoms or contraception. It will not mention that the vaccine will not provide any protection against STDs or getting pregnant. This is so stupid. After the Catholic Church in Scotland initially stating that they were against the vaccine and that girls in Catholic Schools would not receive the vaccine- this U-turn and manipulation of the whole population of 12-17 old females in Scotland is an absolute nonsense. I am livid- sex education in Scotland is already fucking terrible and we already have soaring rates of STDs and teenage pregnancy already (at one point Dundee was the teenage pregnancy capital of Europe) without this. As far as I am concerned this is an excellent opportunity to give girls a quick and simple bit of sex education and contraception awareness without the interruptions that normally happen in the classroom. I am disappointed and angry with the Scottish Executive or I mean Government pulling off this stupid and frankly reckless deal with the Catholic Church.

N so today grace asked me if i had gotten the gardasil vaccine, and i told her no. i have a lot of reasons not to take it, namely, no long term studies have been conducted yet, i don't like the track record that merck has, i don't like the fact that this is becoming "mandatory" for young girls, HPV is carried by men as well, and i believe that living a healthy and safe lifestyle will be much better for me in the long run than getting a vaccine. i've been taking a lot more care about what i put into my body lately, and it's doing me well so far. i'm automatically wary of anything that a doctor says any one person "needs" to get put into them that isn't 1. completely natural or close to it, and 2. isn't even tested. here's a quote i like from the last link i pasted at the bottom: "The vaccine has not been fully tested.

No one has been studying it long enough to know what the LONG TERM consequences are. They don't even know how long the cine is effective or how frequently it will require boosters. How can anyone be talking about requiring ALL our young girls to be cinated with such an unknown quantity? What about the side effects? What are they?" notice how we don't hear much about something similar? -hormone levels in birth control pills. this is something we had many discussions on in laws, values, and public policies last semester. when the pill was first introduced, there had been no long term studies done on its usage. only AFTER women had been using them for years was it found that the dosage of hormones was much, much too high. and how much do we actually hear about that in classes, or when getting birth control pills prescribed to us? i stopped taking my bcp back when the spring semester was ending - it was making me go absolutely crazy, my moods were all over the place and i think i was slightly depressed. anyway, i was originally researching other pills to go on, but realized i no longer want to put fake hormones into my body. there are not enough long term studies on the effects for me, and the side effects are simply not worth it. not to mention the fact that i do not agree with the 'philosophy', if you will, behind big pharmaceutical companies. it kind of horrified me to realize i had been on them for many years, and when i started my doctor never sat me down and seriously described the side effects to me. nor did he ever ask for me to come in for check-ups, ask me questions to find out what the best pill for me is, or warn me that after several years of use i may experience mood swings and negative effects from the pill. i actually started seeing another doctor at the practice to get his opinion, and when i saw a female practitioner for my pap smear (ugh), she told me to go back on birth control and wrote me a prescription for yaz. even though i was telling her, at that moment, i DID NOT want it. later i found out she is endorsed by that pharmaceutical company to hand out free trials for yaz and refer that pill to patients. and that's how most doctors operate now...the pharmaceutical companies are there to make money, not to find the best solutions to our health needs - because most of those solutions would put them out of business. anyway, i guess in conclusion i will not, for many reasons,

get the gardasil cine. i believe that living a healthy lifestyle, eating the right foods, and taking care of my body is much better for it than pumping it full of chemicals and whatnot in order to \*hope\* get to the same place. kind of the same idea i have behind my driving now - i paid a premium for my gas, so i'm going to drive as slow and as steady as i want, because those are my dollars that i'm draining away if i slam on the gas just to pass the car ahead of me only to beat them to the next red light. hormone level changes through the decades EXTREMELY edited history of hormone levels "Gardasil is a cine that claims to be partially effective against some strains of HPV, some of which may cause cancer. Look at all of that equivocation: partially effective against some strains which might..." my case against gardasil: well thought-out and referenced article this echoes my thoughts pretty well serious side effects another very good email

P I share Kezia Dugdale's outrage that the lily-livered SNP Government have bought off the Catholic Church's opposition to girls being cinated against the Human Papilloma Virus which causes cervical cancer. The deal is that pupils at their school can be cinated so long as no information is given to them about protecting themselves from other STIs and pregnancy. Why on earth did Shona Robison not stand up to the Catholic Church and take the administration of the programme outside schools? Why not make sure that that jabs were offered at GP surgeries and bypass the Church's opposition completely? I am appalled that anyone would deny a girl a potentially life saving treatment just because they were going to be given some information that they disagreed with. Let's be clear. It's not as if anyone is trying to make teenage sexual activity compulsory. It's all about giving information in a neutral way which could potentially save their lives or their fertility. I send my daughter to a Catholic school. I certainly don't want her being sexually active in six years time, as a third of 15-year-olds are. She will be very strongly advised by me that this stuff is always best within the constraints of a strong relationship. I will keep her father well away from this conversation as nothing other than a lifetime vow of celibacy from her will satisfy him. He was working out how he could get rid of her first boyfriend within hours of

her being born..... I want her to be confident about the decisions she makes in her adult life and you can bet your life that she will be getting as much guidance from me as I can lay my hands on about how to protect herself both physically and emotionally. There's always the chance that she'll choose not to take it but I couldn't live with myself if I hadn't warned her. There's evidence that teenage pregnancy rates are highest where there has been little or no sex education. The Government should be acting in the interests of all teenagers and not pandering to the whims of any religious organisation. Shona Robison and Nicola Sturgeon have let down the next generation and as women should hang their heads in shame.

P Can't sleep. Instead am exchanging emails with my mom. Wondering why chiropractors as a group dislike cination so much. Why my mom thinks chiropractors have as much authority as normal doctors. Wishing she would present me with real arguments instead of this bullshit fact sheet against Gardasil that gets wrong all the claims it thinks it's debunking. I might not win so handily, then, but I would be less disrespectful. I am lucky to be sitting at the hub with all this information my mother doesn't have. To know people at pharmaceutical companies, people in med school. To have high-speed internet at my fingertips on a fast computer, and to know how to use it. To understand probability and statistics. World, why don't you understand probability and statistics?

N So I just turned 26, which is the supposed (and widely assumed to be arbitrary) cutoff year for the HPV cine. My doctor has been pushing it on me like whoa. Everytime I call for some unrelated matter: "We have the cines in the office now, so come in any time!" Um, OK, lady. Get up off me. And now I read this , and and it appears others are in my same boat, i.e. wondering: When did our doctors suddenly become shameless shills for Big Pharma? Yes, I'll be completely regretful if, when I reach my 40s, I develop cervical cancer that could have been avoided. But I'll be even more regretful if, when I reach 27, I start experiencing weird side effects because of a drug that wasn't sufficiently tested but was mass-marketed to millions of women who were convinced they absolutely needed it. Thoughts?

P Religion is outdoing itself this week. The good old Catholic Church for instance, always vigilant for the well-being of humanity. A cine against cervical cancer will be given to schoolgirls without them receiving any safe sex advice as a result of a controversial deal struck between the Catholic Church and health officials [in Scotland]...The Catholic Church originally raised objections to the jab on the grounds it could encourage promiscuity, but has made a U-turn after reaching an agreement with health and education bosses. The deal means girls getting the HPV jab will not receive any accompanying advice on the need to use condoms to protect themselves from other sexually transmitted diseases. Typical. A bogus worry about a bogus guessed-at possibility of a non-problem motivates the church to object to a measure that would protect women against a fatal disease. Healthy sense of priorities they have; sensible view of what matters and what doesn't. What is 'promiscuity' anyway? And what business is it of theirs? What if the cine did 'encourage' women to have sex with more than one person - so what? Why does it matter? Why does it matter enough to warrant risking their lives by preventing them from getting a cination? And why is it up to the Catholic church to intervene? Why do health officials in Scotland have to bargain with the Catholic church at all? Why do they have to 'strike a deal'? Health campaigners and parents' groups last night reacted angrily to the deal, warning that the sexual health of thousands of young Scottish women was being put at risk to avoid a moral backlash from the Catholic Church. Many sexual health experts believe it is essential to give out safe sex advice alongside the jab to make it clear they will remain at risk from other STIs including HIV, chlamydia and gonorrhoea. More than half of the 5,000 female chlamydia patients in Scotland last year were under the age of 20. Well it serves them right you see. The Catholic church wouldn't want them to just get away with it. The Catholic Church has now decided it will back the programme, with the jabs being available in its own schools. Spokesman Ronnie Convery revealed: "We have been in fruitful discussion with the health and education authorities, and we are satisfied that the programme to be rolled out across the country now is a responsible and ethically appropriate one." That's disgusting. Immoral,

presumptuous, intrusive, reckless, and disgusting. Having sex is not of itself irresponsible (unintended conception is irresponsible, but that's a different matter); obstructing measures to prevent diseases is grotesquely irresponsible. The smugness of this kind of thing becomes unendurable...'we are satisfied' indeed! Who cares whether they are satisfied or not! It's not about them, it's about the girls. Ronnie Convery isn't going to get cervical cancer, is he, because he doesn't have a cervix, and neither do any of the other bastards who decide this stuff.

P Kay, I have two questions: 1. Have any of you taken the gardasil cine? Do you recommend it? Did you have any weird side effects? and 2. Does anybody know if Blue Cross Blue Shield Illinois cover the gardasil cine?? Thanks!

N The NYT has a five page article here: You know me: I don't trust doctors, I don't trust cines, I think a lot of this stuff has risk that doesn't make it worth the benefits and I think even more of it is too expensive to justify, considering all the other worthwhile things we could be spending the money on (like, say, more BPA and/or pthalate laden plastic toys for deprived children. Wait. Never mind). Highlights: Duration of protection is in question (has been all along, apparently) so three years or so out a booster shot might be needed. Ask yourself: why the heck would you cinate a 12 year old girl against a disease she'll only get by having sex when you may well have to have it boosted several times before she hits college where it's really going to count? There's been huge compliance with this thing. The article develops in some detail the financial conflicts of interest involved in efforts to mandate compliance. Because so many girls have gotten this cine, we're seeing a lot of reports of adverse effects including 20 deaths. Yes, Virginia, we \_get\_ that some if not all of those 20 deaths may be a straight up case of post hoc ergo propter hoc and nothing to do with getting the shot(s). Nevertheless, a pretty strong argument to delay if possible. But most amazingly, the article takes seriously the cost/benefit issue in terms of what we \_aren't\_ doing because we're spending a billion or so on this puppy. Given that at best, it protects against 70% of the HPV out there when the studies were conducted, and therefore



you'll still have to get regular pap smears, you have to ask yourself: how much would you pay, or ask your taxing authority to pay, to reduce the fears associated with an abnormal pap smear for 1 in some large number of women? Because the odds of saving anyone with this thing are slim.

N Action is needed before the luck runs out: the Gardasil cination program should be suspended now.

P The rapid deployment of a cine to protect women from cervical cancer represents a triumph of what the manufacturers call education and their critics call marketing.

P In the last two years, cervical cancer has gone from an "obscure killer confined mostly to developing countries" to the "West's disease of the moment" through the "lightning-fast" transition of new human papillomavirus cines from development to "must-have injection[s]" in the U.S. and Europe, the New York Times reports.

N Shocking to hear of more side effects to Gardasil and this time in the form of pancreatitis but really it is time that this cine be stopped as you ...

N That's the conclusion of a new study that is going to make life much harder for Merck to wring needed sales out of its controversial HPV cine. The study, which appears in the New England Journal of Medicine, comes as the drugmaker is already struggling to convince college-age and older women to get the cine, which costs about \$360 for a three-dose regimen. The cine, which was approved for girls and young women ages 9 to 26, makes economic sense for preteens because they are less l

P It's been hailed as a breakthrough in the fight against cervical cancer but, today there are new questions about the expensive new cine marketed as Gardasil.

P The opinions of women about sexual matters do not play a significant role in their decisions about whether girls in their care should receive a cine against a sexually transmitted virus, according to a new survey. The findings counteract assumptions that

some mothers refuse to let their daughters receive the HPV vaccination because they oppose sex before marriage.

P Question: One of the decisions confronting the parents of young teenage girls is whether to agree to give them the vaccine for human papillomavirus, which prevents cervical cancer. (One brand also prevents genital warts.) To me, the question is almost a no-brainer, because this is a vaccine, and the first one. It's been on the market for more than two years now. Though the vaccine is expensive, many insurance plans and federal and state programs cover the cost. If my daughter were in the eligible age range, I'd be beating down her doctor's door to arrange for the series of shots. Yet only about one in five eligible girls has been immunized against this terrible disease. Why?

P Please be more careful when announcing the news. Gardasil is the "cervical cancer vaccine" not the "cervical vaccine." A woman's cervix is a totally natural and important part of her body. We do not need vaccines to protect us against having one.

N Two vaccines against cervical cancer are being widely used without sufficient evidence about whether they are worth their high cost or even whether they will effectively stop women from getting the disease.

P I just got my first injection of Gardasil (the HPV vaccine). Damn, this shit hurts! I guess I haven't had a shot in a while, but I don't remember any of them hurting more than a minute after the injection. Ow! Better than cancer. Better than cancer. Better than cancer.

P so all week articles have been all over the place about the effectiveness, and cost effectiveness, of gardasil- the hpv vaccine. i won't get into the science and the decision to vaccinate is a personal...

P Back to my regularly scheduled programming. My life is so unbelievably boring that I'm still doing school stuff at almost 9:00 on a Friday night. I studied NCLEX immunology questions (thanks to our school play from patho-pharm, I will never forget what

eosinophils do) and wrote up my clinical journal. I had to include the Whizzinator. Is that wrong? Now I am writing another project on Gardasil, about which I have previously blogged and written one another paper (different emphasis). It came back into my brain at my community clinical because several girls were scheduled to receive the shot, and I chatted with "our" nurse about it. She appeared to feel that the cine should be mandated when I asked her about the Texas law, and the research I did this morning leads me to believe that this attitude is pretty common among public health nurses. I so so want to get on board with this and believe that Gardasil is a breakthrough in women's health, but I can't quite get past what I see so far as pushed-through safety and efficacy studies; it really seems to me that Merck steamrolled this cine through testing and right into legislation. Now increasing numbers of scary side effects are being reported, including 20 deaths as of June. The FDA massages the data to say, "Yeah, well, those 20 girls might have died anyway," and naysayers assume that the cine caused them all; no doubt the "truth" lies in the middle. I get that statistics can be made to say what you want them to to a very large extent, but the fact remains that healthy girls are getting this cine for a disease that CANNOT be caught through casual contact (as opposed to measles or polio), are not being fully informed that there is doubt regarding its safety, and then, in alarming numbers, are developing Guillain-Barre or even dying, in addition to freaky side effects such as developing warts all over their bodies (um, yuck). I repeat: I have read the FDA's response to all of this, and it is no more compelling than Gardasil's opponents' interpretations. Given this, I just wish that legislators and public health departments would be more cautious with this cine. Can we please get a little more data? We're kind of beta-testing this cine on girls. I'm glad that most states seem to have said no to this legislation when it's been introduced. In my state it was shot down just a month after it was introduced. But I digress. I have a lot of data on Gardasil and its side effects and their incidence. What I can't find is the incidence of serious side effects for widely accepted cines for comparison. Any epidemiology wizards out there? What is considered an acceptable risk for a cine? They all do have risks. Is Gardasil on a par with

the others, or is it being singled out because you have to have sex to get the disease, instead of just breathing the wrong air?

P so i had an appointment for a shot today at 3. the first of three shots. gotta wait two months for the next shot, and then another four months for the last one. supposedly a new cine of some sort. to prevent cervical cancer? well, if i understand correctly anyway. never really heard of a cine specifically for preventing a cancer . but hey, that's cool. i won't have to worry much in the future hopefully. only girls from 9 to 26 years old can get these shots. hmm. since i have Medi-Cal, it will pay for the first two shots. the last shot will be after my 18th birthday, which means i won't be covered anymore. but hey, at least i'll have the Health Center at school haha. yeah, so that last shot will cost \$130. geez. well, i should be able to pay for it myself if i partake in the Work Study program. mm, so mother and i waited for about ten minutes for a three-second shot. but gosh, i got the not-so-nice doctor again. you know, the wife. she didn't smile, but she did laugh when she told my mother that she couldn't get the shot too because she's too old. i'm not sure if it was an attempt at true mirth or if it was just a laugh of disdain. anyway, that shot hurt -- not the pricking part. that was fine. it was when she pulled the needle out that it hurt :- mm, so my next shot will be October 25th or something -- could i please get a nicer person to give me the shot? at least smile. not make me feel like i'm wasting their time.. anyway, went to D's place afterward. waited for him to get home. the youngest daughter in the family let mother and me in. sat and waited. i read my summer reading. it actually got pretty interesting toward the end. i only have three chapters left to read ^\_^ i'm so proud of myself haha. though, i probably won't do well in my English class anyway. mm, D came home. did something with his van's stereo. yeah. confusing. i helped though! hehe i'm so smart ^\_^ i texted with Maggie for a little bit. she was on her way to Davis T\_\_T she's there now. unpacking, i'm sure. i miss you already, Maggie. haha.... afterward, D, mother, and i ate dinner. then i went into his room and napped. then it was time to go. told mother that i was breaking into hives or something on my wrist -\_\_\_\_- so irritating.. been like this since this morning. early signs

last night, but it went away. no visible bug bites. got down to "must be my watch. the fake leather must be absorbing my sweat and irritating my skin." then mother and D decided that i needed a new watch. went to Walmart. D paid. \$38 watch. digital. yay. finally. might not have to use my alarm clock. but we'll see if my watch can wake me up first heh. on the way out, i saw Emerald :D at first, i was looking at her from behind and was thinking "why does that person look familiar?" i hadn't seen her face yet. then "it's Emerald's hair!" popped into my head hahaha.... and she turned around, and i was sure. then she started to leave. i called her name four times before she heard me haha. mind you, i've been listening to music for most of the day. so i forgot my earphones were still in, and so i probably wasn't calling out as loudly as i thought. anyway, talked a little bit. forgot to let the guy at the exit check my bag (didn't know they still did that :P). so mother and D left me behind. it was just a little chat. Emerald was buying a few things for school probably. and i asked her if she was really commuting to SF. yeah, i was just making sure. i wanna know who's really staying in SJ because i thought everyone who wasn't going to a school in SJ was leaving. it really does get confusing haha. anyway, she left, and i left. caught up to mother and D. went home. you know, i've never run into any of my friends anywhere except at school and places close to school. i don't even run into people at the mall. well, when i used to go there anyway. or if there was someone i knew, i was with friends who knew them better haha. yeah, so that was a first. or maybe i just can't remember. hmm. so two days of "freedom" left. then it's first day of college. woo..... gotta talk to a counselor on Monday about my English class because i'm an idiot. maybe walk around to explore. oh, gotta ask about my VTA pass. and hope that my financial aid money has enough excess so that i can pay for more books and do something with the rest of the money like save haha. hmm, i need to ask about Work Study too. hmm..... alrighty then, that's all. i'm typing too much for a little nothing. hah! a paradox. ok. i wish i could go out at night and look at the sky. yeah. ok. bye.

N One more reason not to support the paper diaper industry. while I am on the subject I am sooooo tired of seeing the flipping Gardasil commercials that make getting the cine such a great mother daughter bonding experience. come on...cant they go to dinner and a movie instead?

N Days are flying by this summer, or so it seems... so much happening during these past 6-8 weeks. \* Violet has begun to eat table foods - she skipped right over the whole "first food" prescribed plan that books and doctors recommend... was not into it, and when she decided that she was ready to eat, she went for the gusto - Indian food, bread, lettuce, fruit, you name it! And she seems to tolerate so much of the foods digestively. When we tried to introduce "first foods" she wasn't at all into it and she had digestive problems with it all. \* She learned her forward crawl, and almost the same day, she pulled herself up to stand. Now she likes to play standing up and leaning over things. It's funny. And exciting. \* This means we are actively baby-safe-ing the house. This is a time consuming activity (observation, then shopping and installing safety features). \* V and I take swim leassons every week. She LOVES the pool - now she gets excited and giddy when she sees water. A lot of stuff has been introduced by the swim coaches she is taking lessons with. At her most recent lesson, the coach had her face underwater for 5 seconds, and let go of her beneath the water (passing her to me). She kicks her legs and everything! She knows how to "jump" off of the side of the pool into our arms. We are going on ation to t he Outer Banks soon and I'm excited for us to spend time in the pool together with Charlie... and to dip her feet into the Atlantic Ocean. \* The NY mandatory cine bill was squashed. Thank goodness. I respect parents' choice to cinate their kids, and despite the fact that some people on the forums I belong to have labeled me and similar-minded folks a nut, or an idiot, I honor their decisions to make informed choices for their families. I likewise appreciate having the choice to make informed decisions for mine. And I feel very good that my voice helped to make a difference for choice. In the meantime, I have read several reports of young girls (ages 13-18) becoming paralyzed and DYING from the Gardasil cine. This is a cine to prevent

STD's. Totally extraneous type of cine, I feel. And the risks are becoming frighteningly clear now that the cine has been given to many girls over the past 2 years. \* My yoga practice continues to change and shift. Our yoga community here in the area is going through a massive transition. Some of the growth feels very challenging, while other aspects of it feel so liberating, refreshing. I appreciate it when I can embrace change. \* Seeing clearly old, outmoded patterns of judgement, jealousy, perception of "exclusion" or forsakenness. These are lifetimes old. They are not serving me. I am not entirely clear about how to transmute it, but I am noticing how it comes up and with what frequency. It's surfacing because it is on its way out. The question remains - how many more iterations of these patterns do I need to experience before I will consciously release myself from the shackles of these self-limiting illusions? \* Other stuff: I absolutely LOVE breastfeeding. Yes, V is 10 months old. It's not like this is a new revelation, but something has shifted within me whereby this part of our mother-daughter relationship has become a deeply satisfying, nurturing, soothing and intimate activity. Weird that she has begun to eat food, which began the weaning process, and I've come to find nursing an ever-increasing joy. Of course, V is biting my nipples right now and this phase is not as joyous. But she'll get over that. \* I really am enjoying motherhood. I never knew I'd enjoy it so much. As V grows and changes, I love her more and more and more. I love waking up next to her in bed and snuggling with her and Charlie. I love to play with her, and identify things. I love to play "this little piggy" on her toes. I love singing to her all the time. I love holding her upside down by her hips and making her giggle. I love clapping my hands and having her join in. I love her strong personality and her voice. I love how she will sidle up to me now that she can crawl and pull herself up... and how she'll lay her head on my shoulder, or wrap her arms around my leg and hug me. I love how she interacts with her daddy. \* Love is plentiful, love is strong, love is liberation. I hope to dive ever more deeply into the ocean of love!

P Conservative political groups in US states have blocked plans to educate young girls against the sexually-transmitted virus that causes cervical cancer because they believe

it would encourage promiscuity. West Virginia, Kentucky, Mississippi and New Mexico have rejected attempts to introduce compulsory vaccination programs of the Australian-invented vaccine Gardasil which works against the human papillomavirus (HPV), known to cause 70 per cent of cervical cancer cases. NewScientist.com reported that some conservative groups believed that the introduction of the vaccine to girls aged 11-12 years would encourage sexual activity by cutting the risks of catching sexually transmitted diseases. (AP) So let me get this straight. The Conservatives feel it is fine for girls to have a greater risk of dying from cervical cancer, but it's not fine for them to enjoy a natural part of life, which is sex? What sort of illogical, narrow-minded thinking is that? I would have no problem if my 13 year old daughter told me she was having safe sex, but I'd be devastated if told she had cervical cancer.

N Government experiments in health care Back in January 2007, I wrote a column taking Colorado legislators to task for sponsoring a bill that would have forced parents of girls 12 and older to either vaccinate their daughters with a HPV "vaccine" or "opt out." Social conservatives argued that the bill would lead to promiscuous behavior in children. My concerns were different. Not only is this bill an invasion of privacy and an implicit endorsement of the vaccine, the law has the potential to encourage many parents to give the vaccine to their children without educating themselves properly beforehand. After all, shouldn't parents "opt in" instead of being forced to "opt out"? Trust me, if in 10 years we learn that the HPV vaccine causes throat cancer, not a single lawmaker will be held responsible. The same bill had been peddled in states across the nation. The reason I mention my column (which isn't online anymore), is that I remember receiving a rather large number of angry emails and calls. One nurse practitioner, in an agitated letter that ran in the Denver Post, scolded me: "We have the potential to drastically reduce the incidence of cancer with the introduction of the HPV vaccine. To cloak this discussion in the "government force-feeding parents" debate is an affront to the health and well-being of the public." How could I oppose the HPV drug? Did I hate children? (Well, some children.) Was I willing to put the lives of these poor creatures at risk for an ideology? The answer, of course, is yes. Freedom and choice is an ideology worth



risking lives over. But, even more than that, there was no convincing proof that HPV cines were effective. Nor did we know enough about the side effects. Individuals, I argued, with detailed knowledge of their own situation, will, on the whole, make smarter and healthier choices for their children than detached government officials. Now, the New York Times runs a story titled "Researchers Question Wide Use of HPV cines." The article quotes two New England Journal of Medicine articles that conclude, the "Two cines against cervical cancer are being widely used without sufficient evidence about whether they are worth their high cost or even whether they will effectively stop women from getting the disease ." So will all those states that endorsed these cines through legislation now "educate" parents about the potential pitfalls? Highly unlikely. Source Prominent Australian surgeon accused of botched work Only 12 years late. Those good ol' "regulators" and government "watchdogs" were asleep as usual A PROMINENT surgeon accused of performing botched, incompetent and unethical operations over more than a decade could face disciplinary action. Toowoomba surgeon Darryl Wayne Bates is also accused of engaging in dishonest behaviour. The Medical Board of Queensland has referred Dr Bates to the Health Practitioners Tribunal alleging a pattern of misconduct by him. Board documents filed in the District Court of Queensland reveal Dr Bates, who is on the Toowoomba and Darling Downs Medical Association executive committee, was found in an audit of patients by St Vincent's Hospital, Toowoomba, and the Royal Australasian College of Surgeons to have performed "suboptimal" surgery as far back as 1996. In one operation it is alleged "a loop of intestine was mobilised from the pelvis and left without blood supply and attachment to the gut". The patient, who deteriorated and required further treatment at the Toowoomba Base Hospital, was found to have a 1cm-wide cut in their mid-small bowel by another surgeon. Further incompetence allegedly took place between August 2003 and September 2005 in four cases at Toowoomba's St Andrew's Hospital, which filed a complaint against Dr Bates to the medical board. On August 14, 2006, he signed an undertaking to have restrictions placed on him by the medical board and later that month was told his conduct was being referred to a Professional Conduct Review panel.

He is then alleged to have carried out four operations in January and February this year, contrary to his agreed restrictions. When contacted by The Courier-Mail, Dr Bates deferred comment to his solicitor Harry McCay. Mr McCay chose not to provide a statement to The Courier-Mail. A directions hearing into Dr Bates's case has been set down for September 1 in the Health Practitioners Tribunal. Source

N I find the current debate over HPV cines in Texas quite interesting on a rights level. While I fully believe that children getting this cine is a good thing, I do not believe that it should be mandated. I can kind of get over most cines being requirments for public school because if you're going to suck off the government's teat, there is a reasonable expectation of limitations of your rights and actions, limited only by the Privileges or Immunities Clause of the 14th amendment. But I think there is a distinction here that is important. Most cines treat airborne viruses, and as such, sending your child to school can easily expose them to these viruses. HPV, however, is a sexually-spread virus. It is in no way, shape, or form, a reasonable expectation that my child will engage in sex with other children at school as a direct result of going to school. Yes, it's quite possible she will hook up and have sex, but that is not a direct result of going to school, and falls under the child's outside activities. A counterpoint I thought of would be guns. Presuming a student does not use the gun at school, and there is no school related reason that a gun would be used in the course of a school day, what right does the school have to prohibit a student bringing it? Wouldn't that be an outside activity? The argument I would make is that mandating a cine to protect against non-school activities, seems more akin to prohibiting a student from owning a gun at all (pretend that it was not illegal for most school students to own a gun). Having a certain non-necessary outside item on school grounds is certainly a concern the school can take, balancing the right of the student to posess that object against the good of the other students in school. But, mandating that a student can't have access to an item at all, presuming its legality, is not a fair privilege of the school. Now, treat the HPV like a gun. While it has the same dangerous capacity, the reasonableness of it being "used"

while at school is non-existent. For it to be "used", a student would have to engage in sex with another student. It doesn't enable the student to do that, nor is it a necessary part of a student doing that. We could require that students leave their genitalia at home, but surprisingly, biology does not work that way. Since it is not reasonable to expect the "item" to be put into use, and the good of other students of excluding it is small and an outside matter, I do not feel that it is right to mandate the cine for it. You don't even need to bring to light the seedy bribe that Gov. Perry took from Merck, or the high cost of the cine, or the unproven safety of the cine to find this a bad deal. Yes, the horrible argument that this will cause an increase in teen sex is a poor and immoral argument, but that's not the real water holding argument. My problem is not the cine as much as the government requiring it. If you would like the government to help promote this cine, I suggest you provide subsidies for people to take it rather than mandating it. But even this is a bit rankley to a Libertarian.

N Teaser: A recent study says that the costs of cinating women over 18 against HPV or human papillomavirus, to prevent cervical cancer and genital warts, do not justify the returns in terms of increased life expectancy. [read more](#)

N Most medical organizations have strongly advocated using the HPV cine Gardasil for girls 11 and 12 years old. But an editorial to be published in the New England Journal of Medicine has outlined some serious concerns about the cine. First, Gardasil's long-term effectiveness is unclear. And because cervical cancer takes years to develop, critics say the current information is insufficient to determine whether Gardasil works. Gardasil is also expensive, costing about \$400 to \$1,000 for the necessary three doses of the cine, and the cine only protects against some of the viruses that cause cervical cancer. There is also the issue of side effects. FDA records reveal that, since Gardasil's approval, nearly 9,000 girls had "bad health events" after receiving their shots.

N Allow me to inject some more thoughts into the debate on the HPV cine, which has now spread to Colorado which means we may have a political PANDEMIC our hands! :O Some Farker mentioned that Hepatitis B is a blood-borne virus that is often required for

school cines, which pokes a hole in the "HPV is not spread by school contact, therefore is not an acceptable disease for required school cinations" argument. I was incredulous\*, and Wikipedia bore out the blood-borne aspect of Hep B, and a quick Google Windows Live search bore it out in the cination guidelines for Washington State public schools (PDF) . In fact, a couple of things on the required list are infectious, but not contagious by normal school contact. Furthermore, did you know there was a difference between those two terms? Infectious diseases are any disease that results by infection (invasion) by an agent such as viruses or bacteria. However, contagious diseases are a subset of infectious diseases that can be transmitted between infected organisms. Example, Tetanus is infectious, but not contagious, because it can be contracted by, say, stepping on a nail, but not spread from person to person\*\*. The CDC pink book ( Epidemiology and Prevention of cine-Preventable Diseases ) mentions that Tetanus (PDF) is the only such cine-preventable disease. So, let's work from the belief that contagious diseases that are spread through normal school contact are quite acceptable to required school cinations, but diseases that fail to meet this level of student health danger are not. Tetanus and Hep B do not meet this level of danger, and therefore, shouldn't be required for school admission. Tetanus might be able to sneak in because its cine works on Diptheria and Pertussis, but Hep B would have no business being in, since I don't believe that sharing dirty needles is part of the 3 Rs. But, don't call your local civil rights lawyer yet. The section of the RCW that requires cinations for school attendance is RCW 28A.210.080 (1): The attendance of every child at every public and private school in the state and licensed day care center shall be conditioned upon the presentation before or on each child's first day of attendance at a particular school or center, of proof of either (a) full immunization, (b) the initiation of and compliance with a schedule of immunization, as required by rules of the state board of health, or (c) a certificate of exemption as provided for in RCW 28A.210.090. A certificate of exemption? What do I have to do to get that? Well, you can get a doctor to say the cine is not a good idea for the time being, since it could cause harm. Or, a parental-type person can write a signed note

stating that his "religious beliefs ... are contrary to the required immunization measures", or that he "has either a philosophical or personal objection to the immunization of the child." RCW 28A.210.090. So, boom, this clears the issue elegantly\*\*\*. Barring any onerous case law, if you feel that it is wrong for your child to be immunized, write a note. This also easily opens up the list of required diseases away from contagious diseases spread through normal school contact, since a child may be "exempt[ed] in whole or in part". RCW 28A.210.090. We can be legally justified in accepting such a list as CDC's list of vaccine-preventable diseases. Hep B is on this list, and HPV is on this list. If other states have similar laws, then really, the argument should follow from practical/health reasons, not moral or legal reasons. I duck out of that argument, because my knowledge of the disease, the vaccine, and so on, is small, and I have trust in the CDC that this is a preventable disease. However, Merck is pushing this through in a creepy way, so my gut still says it's perhaps morally (emotionally?) wrong, but I'll leave making decisions on truthiness to Stephen Colbert. – Footnotes – \* I thought the correct word meaning skeptical was "credulous" for so long. I've just found out it's an antonym. :( \*\* Are they sure about this? I mean, Tetanus is caused by a bacteria, which is anaerobic and lives in the blood. If I contract Tetanus causing bacteria, and give a blood transfusion or something, the bacteria will not be transmitted? Really? Why? \*\*\* Well, not completely elegantly because private schools have to do this also. Why? What gives the State the right to dictate private school activity beyond the normal requirements for protection of individual rights? Is it just for public health reasons? Is it because children are required to be in one of those places? What's the deal with that?

N What is known and what is as yet unknown about the current human papilloma virus (HPV) vaccination program, to prevent sexually acquired HPV stimulated cervical cancer, approved by the FDA in the United States, promoted by policymakers world wide and the couple of pharmaceutical companies who make the vaccine represents a scientific and ethical challenge. The program is for 12 year old pre-adolescent girls prior to becoming sexually active to be vaccinated and a catch up program for girls and women ages 13 through 18 up

to 26 years of age. Unfortunately the effect of the vaccination program, because of the slow development of HPV stimulated cancer of the cervix will not be known for decades. The editorial written in the August 21, 2008 issue of the "New England Journal of Medicine" by C.J. Haug, discussing a research article in the same journal issue, sets the questions which I have provided as an extract below. Some of my visitors may not be familiar with all the terms but I think most will be understanding of the concern expressed. The vaccine was highly successful in reducing the incidence of precancerous cervical lesions caused by HPV-16 and HPV-18, but a number of critical questions remained unanswered.<sup>5,6</sup> For instance, will the vaccine ultimately prevent not only cervical lesions, but also cervical cancer and death? How long will protection conferred by the vaccine last? Since most HPV infections are easily cleared by the immune system, how will vaccination affect natural immunity against HPV, and with what implications? How will the vaccine affect preadolescent girls, given that the only trials conducted in this cohort have been on the immune response? The studies with clinical endpoints (i.e., CIN 2/3) involved 16- to 24-year-old women. How will vaccination affect screening practices? Since the vaccines protect against only two of the oncogenic strains of HPV, women must continue to be screened for cervical lesions. Vaccinated women may feel protected from cervical cancer and may be less likely than unvaccinated women to pursue screening. How will the vaccine affect other oncogenic strains of HPV? If HPV-16 and HPV-18 are effectively suppressed, will there be selective pressure on the remaining strains of HPV? Other strains may emerge as significant oncogenic serotypes. Read the free full text at the link above and then return and perhaps write about your concerns, if any, regarding a large scale vaccination program where the answers regarding the overall benefit to countries where pap smear detection of pre-cancerous abnormalities with their early removal is commonplace. Does this vaccination program really promote benefit or will it simply encourage early sexual activity or in later years avoidance of necessary pap smear screening?

N Mom, Guard Your Daughter From the prestigious New England Journal of Medicine: Despite great expectations and promising results of clinical trials, we still lack

sufficient evidence of an effective vaccine against cervical cancer. Several strains of human papillomavirus (HPV) can cause cervical cancer, and two vaccines directed against the currently most important oncogenic strains (i.e., the HPV-16 and HPV-18 serotypes) have been developed. That is the good news. The bad news is that the overall effect of the vaccines on cervical cancer remains unknown. How will the vaccine affect preadolescent girls, given that the only trials conducted in this cohort have been on the immune response? Vaccinated women may feel protected from cervical cancer and may be less likely than unvaccinated women to pursue screening. How will the vaccine affect other oncogenic strains of HPV? If HPV-16 and HPV-18 are effectively suppressed, will there be selective pressure on the remaining strains of HPV? Other strains may emerge as significant oncogenic serotypes. So why has the AAP made Merck billions by adding this unproven vaccine to its "recommended" (meaning the doctor is going to give it to your daughter unless you put up a stink) schedule?

P I was talking to N about our upcoming trip to DC and mentioned that since I'd otherwise miss a week of distance training I'd probably rent a bike while we were there. He told me I could bring my bike instead! I thought that was just the most wonderful and incredibly supportive thing ever and told him so (keep in mind that what you hear about this two-wheeled adventure, he gets five times worse). I'm thrilled. I've gone a bit of a shopping spree- new U-lock, saddle, bottle cage, reflective ankle bands, padded bike shorts, and two synthetic ventilated wicking tee shirts, as well as the official Trek jersey. I own a bike jersey! With the stupid pockets on the back and the elastic waist and everything! I can't believe it. In other news, I had my annual lady's checkup (all normal) and decided to go ahead and get the HPV vaccine, since I found out my health insurance covers it as a preventive treatment. No fainting, thank goodness, but you can definitely tell you're being injected with something. It didn't hurt exactly. Maybe it's just the fact that it's a fairly large vaccine- looked like 2.5 cc to me- given intramuscularly. The nurse warned me that they've had several patients report that after the second injection they've gotten a little knot at the prick site which has taken

anywhere from a few weeks to a couple of months to subside. Charming, but having a knot is better than lacking a cervix, no? I think that's about it for now.

P eating i was looking through some old pictures this afternoon and found one of myself in eighth grade. i remember feeling incredibly insecure about my body, convinced i was chubby. i found a couple where i look skeletal. last september, when i was sick, i felt like everything was out of control, and i developed an eating disorder ("not otherwise specified" – it was combination of anorexia and bulimia). (i'm a lot better now) the guy i love, and have the fortune of living with, tells me almost every day how much he loves the way i look. as i've told him, i could feel terrible about my appearance that day, and almost as if he's reading my mind, he'll look at me and say something to the exact opposite effect of my insecurities. no one can say, "stop worrying about your body" or "you look fine" – and have you take their word. everyone can say something to make your insecurities worse; even if it's completely innocuous. for myself, i know that when everything else in this world is falling apart around me, i stop eating, because it lets me control something. and most of the time, i don't even realize i'm doing it. once i realize what's going on, though, it normally gets worse. so anyone could say, love your body, treat it well, you are beautiful – but words can't even put a band-aid on the situation when you're in that state of mind. the only thing you can be sure of is that you are loved. even when it doesn't really seem to help, that is a constant. that will always be there, and along with that, help. medication you do not have to have sex to get HPV. HPV causes 70% of all cases of cervical cancer and 90% of all cases of genital warts. every year in the united states, there are six million new cases of HPV. 74% of those cases occur in people 15 to 24. 80% of women will have HPV by the time they're fifty. there are thirty strains of HPV. the cervical cancer cases are caused by two. the genital warts cases are caused by another two. there is a cine to prevent you from getting all four of those strains. it is called gardasil. my doctor had never had any of her patients have any side-effects. they are extremely rare, and looking at the list, i'd say the worst one would be vomiting. if you are a woman who is 26 or younger, please call your doctor, make an



appointment to just go in and get the shot, please. those commercials really are telling you something extremely important. and now i am. if there is one thing i will ever ask you to do and ever really, really mean it – this is it. just felt like getting all of that out there.

N For all of those that know me that have been around me when the topic was mentioned.. you all know I hate Gardasil. It's a cine promoted for teens to prevent certain strands of HPV. I want you all to know now that our most recent report on Jenny's paralysis is late in coming (whether she suffered directly from the cine or not). Why? Because Australia already has plenty of paralysis reports! Careful, paralysis needs to be treated with steroids immediately if you experience these symptoms especially common after the third and last shot in the series. Sickness is also common, and if i'm not mistaken, seizures are possible. Fainting is extremely common. That isn't to say that this will happen for everyone everytime.. but for God's Sake People. Judicial Watch web site: Here are some excerpts from their article dated, May 23, 2007. "Three deaths were related to the cine. One physician's assistant reported that a female patient "died of a blood clot three hours after getting the Gardasil cine." Two other reports, on girls 12 and 19, reported deaths relating to heart problems and/or blood clotting." "Side effects published by Merck & Co. warn the public about potential pain, fever, nausea, dizziness and itching after receiving the cine. Indeed, 77% of the adverse reactions reported are typical side effects to cinations. But other more serious side effects reported include paralysis, Bells Palsy, Guillain-Barre Syndrome, and seizures." "It looks as if an unproven cine with dangerous side effects is being pushed as a miracle drug." According to VAERS the 15 year old died of acute respiratory distress syndrome. This young girl was in the hospital for 10 days before she passed. A female of unknown age died from a blood clot. The blood clot was diagnosed 2 weeks after receiving the Gardasil cine. There was one other report of blood clotting in the legs of a North Caroline girl of unknown age. At the time of the report she was seeing her primary physician and more information was requested.

N        Alright gentlemen, I need you to at this time to accept the existence of a villainous doctor. V. well! So at this time there was this villainous doctor, and one day as he was twirling his moustache with great evil, an innocent country maid came (o lamentable!) into his offices (flee as you can!). "Doctor," she implored him (a, woe to you brave lass!), "I've a lady's concern for you to address!" The doctor (vile fiend!) drew the curtains closed with great haste, and pulled the door to. And then (the humanity!) he came close to her and began to grasp at her bosom. "Why doctor!" cried she, much affronted. "Take no heed, my dear," he sneered, "Why, 'tis a routine examination (boldfaced liar!) for breast cancer!" Then he dropped to one knee, reached up under her dress (o devil that blasphemes the profession!) and began to feel around her womanhood with his fingers. "Doctor, please!" the girl pleaded (fly, fly country maid!) "Have no worry," the moustachioed villain smirked (ah you pride that will fall in time!). "'tis a routine exam for cervical abnormalities!" And then (lustful ape!), the doctor removed his own pants, and began (o lustful ape!) to copulate with the girl. "Doctor!" she cried (woe, woe, woe!) "No fear!" he replied. (beast!) "But doctor," she replied, "There must be an easier way to test for HPV!" Estimates currently have it that 50-75% of everyone who has sex will have HPV sometime in their life. Girls are screened for it routinely in pap smears, there is no test for guys. Symptoms exist (genital warts, cervical abnormalities), but do not reliably or continuously manifest. Physical contraceptives (i.e. prophylactics) may limit the spread, but since it can also be spread by skin-contact between genital regions, contraceptives do not reliably block transmission. A cine currently exists, but is only FDA-sanctioned for girls between eight and twenty-six, I believe? THESE TWO THINGS adequately summarized last night, I think, where first I was sitting in Brittain with some pledges telling and being told ribald jokes, and then talking with the Health Center people about how to get the word out about HPV. WHAT A GREAT WAY TO START YOUR DAY HUH.

P        Whoa. This is my unofficial last day of summer. I only have to be at orientation for a couple hours tomorrow, but that's, like, it. Summer's over. DAMNIT! So. Hot air

ballooning in Albany was fun. We tried to leave early from home, but we got stuck in Portland traffic anyway for an hour or two. I drove from south of Portland all the way to Albany (!). We ate dinner at this tiny little restaurant downtown and I had amazing salmon. Woke up at 5 Saturday morning to blow up the balloon, watch it take off, and chase it in the van. They landed in an open field. We packed it all up and drove back to the launch field and had a tailgate party. Later, Mom and I went back to the hotel and took a nap (well, she did). Bill went with Grandpete and Uncle Ken to see the rest of the festival. That night was the concert featuring the Little River Band! Yeah. Woo. I didn't know any of the songs, and Bill and Mom and I were nodding off in our seats, so we took off. Then guess what? WE DID IT AGAIN Sunday morning. It was a little more exciting, though, because the wind was blowing in a different direction and we saw some new places. When Ken was landing the balloon for the final time, he landed dangerously close to the field's irrigation system that looked like this . Of course, the wind was blowing toward the pipes and the balloon was going to get shredded on it, so we jumped out of the van and tore across the field (which was furrowed, ow my ankles). We finally got there and pulled the other way at the last minute. Kyle, one of the chasers, got hecka sick from it, though. I felt pretty bad for him. Went out for a huge breakfast, then packed up for home. I drove the same stretch of road home. Would have driven farther if my eyelids didn't start drooping. And then it was a dead crawl from Chehalis all the way to Steilacoom. What should normally take an hour took about four. We're not sure if we're going to do it next year. It's really fun and all, but getting there and back is always a nightmare. Got my second HPV today. Still tired. Going over to Jazzy's to try and work on our math HW. Summer homework is unethical. [/extremely incoherent post]

N Ok..i know that most people who read this aren't parents.. so they may not understand my frustration but I have to get it out and my job has blocked myspace so i can't rant there :( Anyway.. as a parent, its my JOB to research and have a general knowledge about what goes on in my child's life... what they eat whether it be breast milk or formula,

if its a boy if he gets circumcised or not, and if they get vax'd or not.... and it amazes me how many parents just DON'T educate themselves because "the drs will tell me what is best for my child" OMFG people how stupid can you be?? I'm all for every family doing what is best for themselves, cloth vs disposable diapers, vax'd or not, breast vs bottle, etc etc AS LONG AS people educate themselves!!! some of this stuff the government/drs come up with that is "mandatory" is ridiculous! there is no way in hell my middle school aged' daughter will be getting the HPV cine when she gets that old. and there is no way that i will let them vax my next child on the current standardized schedule that they have now.... and hell, i don't even think my next child will receive all the vaxs that they have out now (gasp! the horror!) I'm pretty main stream when it comes to most things.. i don't agonize over whats in my daughters food (except for milk.. that stuff is gross....) she eats fast food (probably more than she should too, sue me.. ) i don't stress over where her clothes/toys come from and if they've been made in a sweat shop ( hell she doesn't play with much either...) and as much as i would love to, we didn't cloth diaper her (not dragging poop covered diapers to the laundry mat... ) but we DID breast feed and i DID educate myself when it came to medical procedures... especially when the delays started up :( I personally think that a lot of her issues were vax related and the additives that they use to preserve them... anyway.. what brought this rant on today is the conversation i had with another mom.... she is worried her son might have the chicken pox and didn't understand how that was possible since he got the vax... uhhhhh unless you actually GET the chicken pox you have to go back and get a booster shot because the vax isn't perfect @@ if you read ANYTHING on it you'd know that.... ugh stupid people/parents upset me.. who is going to watch out for these kids if their parents can't/won't even do it?? i have a ton more to say on this subject but my lunch hour is over.....

P Char! I jogged for another hour straight today! ... granted, I had some pie and ice cream earlier, so that factored in, but... I still did it! I'm training! FOR US! FOR

THE MARATHON! :) In other news, I had my first shot in the round for the HPV cination today. One less!

N First, there was the Gardasil beach towel, an attractive terry velour model that advertised to beachgoers that you're free of a sexually transmitted disease. A nifty way to tout the advantages of the HPV cine. Now, Merck is trying a new way to grab the attention of teenagers and younger adult women with a specially created line of Gardasil jewelry. As CNBC's Mike Huckman notes, you can pay \$32 for any of four limited edition bangles designed by Carolyn Rafaelian, a d

P the tvb addict monster has now possessed me again. I was disappointed that this only showed the week i left HK so now i'm busy downloading and catching up. ahhhhhhhh the betrayal, the evilness...best!!! speaking of best. i think i found the best bday present out there. i met this girl and she invited me to her bday karaoke so i didn't wanna go empty handed then was cracking my brains thinking of what to get her. didn't want to spend too much, didn't want to get anything shitty, thought of giving away my candles, but it's so personal not everyone would love candles like me, nor would they like the scents i chose so...decided to get this: 20% off from the Jurlique Store on George St. It's also cheaper to buy it in 3s...so now i have backups for bday pressies next time. I have been pining for stirrup leggings since the start of the year. to be honest i haven't seen them being sold in sydney before but i LOVE LOVE LOVE how they look on me. I did buy footless tights but they just never looked normal on it, made me look stumpy. not to mention you'll freeze in winter. so this covers part of my foot and i reckon does not look as formal as your normal non-footless tights. so glad i managed to get them in Hong Kong. wanted one in gray too but all they had were really BLERGHHH colours. she wanted me to buy green, blue, yellow and all but i'm too boring for that. found out that my youngest aunty has uterus cancer today and thank god she's ok. my parents took the day off (technically my dad) went to gleneagles with the driver to visit her. i hope she knows how much the family cares for her . all my other uncle and aunties are taking turns to travel down to KL to visit her too. a day

trip down to KL and back to IPOH...the thought of it is enough to make me feel sick right now. i was very hesitant to get a cervical cancer cination offered free by the government but i think i might go for one now. she's the 1st person in the family who has cancer and if she has that cancer it must be in my genes somewhere. must be careful!

N Cervical cancer is the second leading cause of cancer death in women, with 500,000 new cases each year worldwide and 274,000 annual deaths. In the US, there are 12,000 new cases a year and 3,600 deaths - better than the international rate because of extensive Pap smear testing. New cines are able to prevent about 70% of these cancers and millions of young American women are taking advantage of the opportunity. The payoff is attractive: the social cost is from \$30,000 to \$70,000 per year of life saved in the developed world. If the price comes down, these cines could "revolutionize women's health" in developing countries, particularly Africa. A front page story on this spectacular medical development appears in The New York Times , running to almost two full inside pages. The article is filled with .celebration?. .no criticism!. .of many things. .but mainly of drug companies for marketing the cines and . ..(are you ready?). .ACTUALLY MAKING A . The Times should focus next on childhood cines, where federal policy has squeezed all out of the market, where there is no promotion or marketing, and where the cination rates are abysmally low - even where the procedure is free. See the NCPA Brief Analysis on this.

P Like the title says, I had the day from Hell today. First, I had my second cervical cancer cination this morning. Mum told me I was going about halfway to the doctor's office. I know prevention is easier than cure, but I hate needles so fucking much. Second, there's a woman who works at the opshop on Tuesdays who I sometimes can't stand, sometimes can get along with, and she knows EXACTLY which buttons to push to make me annoyed and pissed off enough to be close to a Black!mood. If I hadn't ended up breaking down on a toilet break, I'm pretty sure I would have hit something, probably a wall - if not her face - HARD. I ended up apologizing for getting in a hissy fit to her after I finished and she took me outside to have a little talk (read: FIFTEEN MINUTES). In all actuality, she's really

nice. And I must agree with her that it's probably her 'mother-mode' which sets off my annoyance meter (that, and she speaks like a bogan, which sets it off even more). \*sighs\* I'm considering asking to change days from Tuesday to Wednesday or Friday, but I think I can learn to control my temper for a maximum of the three hours that I do on Tuesdays.

P Hmmm. It's been awhile since I posted, no? I've had a few entries in my mental blogging queue, and I considered posting on Saturday (the 'luckiest day in a century') because a month would have elapsed between posts. Uh, what did I do on Saturday evening, anyway? ::looks at calendar:: Oh, right. I ate some goat cheese while starting to soak the bulghur, took a nap, then made a very-much-local tabouli. I have never made bulghur before, and I bought that from the co-op (did I mention that I am now a member of Weaver's Way Co-op ?); the salt, olive oil, and lemon were also not locally produced but bought from local businesses. Otherwise – the parsley was from Beechwood Orchards, the heirloom tomatoes (Cherokee Purple and Stripey) and green pepper were from the Rineer farm, the cucumber and carrots and some of the scallions were from J&K's CSA share, and the spring garlic was bought at the Farmstand. Cool! :) Anyway. Saturday, 07/07/07. It wasn't the luckiest day ever for me, as far as I know. But I keep intending to blog about a couple weeks ago, because while it wasn't the luckiest week, it was eventful! It felt like sometimes events happened in pairs... On that Sunday, three Sundays ago by now, I waited tables for the first time. I worked a Sunday brunch shift at a steadfastly-informal restaurant blessed with a name that reminded me of D&D and a beautiful location on Lombard St. I also got stood up. (Well, effectively. Someone cancelled plans we'd had for a week because he claimed to be too hung over from partying the previous night.) Instead, I went to see Ocean's 13 with Mali and grumpy\_sysadmin . That Tuesday, I received my second injection of the Gardasil cine. I didn't almost-faint this time, YAY! On Wednesday, tanglethis and I went out. We enjoyed gelatto amid the heat (I chose Butterscotch Bourbon and Turkish Coffee), then we took refuge from the rain on the 'rooftop' of the Continental Midtown (I ordered my favorite 'Hawaii 5-O', vanilla vodka, triple sec, lime and pineapple). On Thursday, there were two

awesome callers at the contra, and they even did some singing squares! Friday afternoon, I had coffee with Mali at the Green Line, and Saturday afternoon, I drove to Lebanon to visit my relatives. Et cetera. That was a week's worth of ways I overscheduled myself... Please note the 'random' tag on this entry, and pardon my scatteredness!

N The pink leaflets are ready, the posters are poised to go up and the advertising slots have been booked both on kids and primetime TV and radio. Tomorrow marks the start of a new academic year. It is also the launch date of a campaign which heralds the introduction of the biggest mass vaccination programme for more than a decade. By the end of September, there will hardly be a Year Eight girl (aged 12-13) in the country who doesn't know that, barring an opt-out, she is shortly to receive three injections of the drug Cervarix, which will offer her 70 per cent protection against cervical cancer. (Article continues below) Later in the year, another 300,000 girls aged 17 and 18 will be vaccinated before they leave school. By 2012, most girls over the age of 12 should have received the vaccine. Made by pharmaceutical giant GlaxoSmith-Kline, Cervarix works by creating an immunity against the two strains of the human papillomavirus (HPV), numbers 16 and 18, responsible for 70 per cent of all cervical cancers. For the Government, the programme - reputed to have cost tens of millions of pounds - has been seen as little short of a community medicine triumph. 'This vaccine could save the lives of 400 women a year,' pronounced public health minister Dawn Primarolo earlier this year, shortly after it was announced that GlaxoSmithKline had won the contract to supply the drug over its rival Merck, who make the more expensive vaccine, Gardasil. Marilyn Smith, 55, a shop assistant from Harrow, Middlesex, has two children Daniel, 15, and Gaby, 11. Gaby is due for the jab in September 2009 but will opt out. She says: Since Gaby suffered a bad reaction to a tetanus jab as a baby I have become much more questioning about the idea of vaccination. I am not against it, but if I am going to agree to something being injected into my daughter I want to make sure it is safe, effective and has no side-effects. Cervarix answers none of my questions satisfactorily. So until there is more long-term data I feel there are better ways of protecting my daughter against cervical



cancer. We already have a good open relationship and I will be rigorous in educating her about the perils of unsafe sex - not just in regard to cervical cancer but also about genital warts, other sexually transmitted diseases and, of course, unwanted pregnancy. Using a condom gives 100 per cent protection against cervical cancer, the cination can only offer 70 per cent at best. I am not particularly impressed by the fact that this cine will be given at school by an anonymous medical team. It should be a matter between the parent, the child and their GP, who knows the child and is aware of her medical history and can watch and record any adverse side-effects. I am fully expecting that both Gaby and I will be put under considerable pressure for her to have the jab and I know in America those who opted out have been made to feel as if they were bad parents, which is outrageous. I don't think the cine will encourage promiscuity, there will always be girls who sleep around, but I do think it will make girls more blase about their sexual health, less likely to use a condom and less likely to go for screening. But my main concern is that we have no idea of the long-term effects of this cine - whether it works, for how long and whether it can harm the immune system. I am not going to expose my daughter to that level of risk and she doesn't want it either.

P Bio: Tim Kaine is a former lawyer and Jesuit missionary who worked his way up from City Council. After being elected Lieutenant Governor fo Virginia in 2001, he made a successful bid for Governor in 2005. In 2006 he gave the Democratic response to Bush's State of the Union, which criticized Bush's tax-cuts as reckless and accused the President of failing to support bipartisanship. As a Catholic, Kaine opposes both the death penalty and abortion. Virginia is a death penalty state, and Kaine has presided over 7 executions in his tenure as Governor. He commuted the sentence of Percy Levar Walton, a 19-year old man who killed an elderly couple and a young man. Percy's IQ is put at somewhere between 66 and 90. Virginia has had some budget problems during Kaine's Gubernatorial run, though I don't know enough about state politics (especially in Virginia) to know how much that was his fault. A great deal of his focus seems to be on the economy, and on gun control, which

is a real problem particularly in Richmond. He also supports mandatory HPV vaccinations for 6th grade girls, and signed a bill to that effect. Tim Kaine on Wikipedia Tim Kaine's Official Site Pros: As a Catholic, he'll probably be a boon to Obama in the Rust Belt, and he'll certainly help turn Virginia from red to blue. His religious convictions may win over traditionally more conservative religious voters who are dissatisfied with McCain. He's older than Obama (50), but not so old that he detracts from the youth of the ticket. He's a white male from a southern state, which is what traditional wisdom says will best help Obama win. The fact that he worked his way up from City Council, and the fact that he's literally not in Washington helps keep him from looking like a Washington insider, so he doesn't hurt the "change" image. He's also got a good reputation without being high profile enough to have a lot of detractors Cons: A pro-lifer will not be attractive to a lot of Democrats, especially the feminists (many of whom are yet to be won over Clinton supporters), but that pales in comparison with the fact that Kaine has no foreign relations experience at all. There are a few interesting governors who are candidates for VP, but they'll have to be a lot more interesting than Kaine to get passed the danger of being the "inexperience" ticket.

P It goes seems to go against reason that I would be in a seminar at the very chic Mi Piace Barolo Frascati room At the Peninsula Manila, much more if the seminar in question was about the prevention of cervical cancer when it is a matter of simple deduction that I do not possess a cervix. That however was exactly where I was last Friday and no, it actually doesn't go against common sense why I would attend such an event. First of all, it's all about preventing cervical cancer or in terms that most of my readers (yes, you three.) would understand, the preservation of poonani. Now tell me, how could I NOT get behind a cause like that? Second reason should be apparent, the seminar would be attended mostly by women. Factor in the rules of probability coupled with my insane luck, I should, and was eventually surrounded by a bevy of beautiful women. Sure, I am one of the most happily married guys you could meet having a wife this hot! (see, I told you I was insanely lucky.) It doesn't of course mean that I do not enjoy the general feminine aesthetic. Anyway, we

also got a free dinner which was absolutely superb. (The veal was to die for!) I mean, when you really think about it, the real question is why WEREN'T you there? Some of the pretty women who were there Anyway, while I may have gone for what can be argued by some as all the wrong reasons, the seminar was actually an eye opener for me. The speaker, Dr. Ricardo Manalastas M.D. of PGH was very informative and was far more entertaining than you would expect anyone who was talking about cervical cancer. Dr. Manalastas, saves lives, sees more punani than I do The most important things that I learned are: every single case of cervical cancer is preceded by an infection of the humanpapilloma virus. (HPV) For over 2 years, an incredibly safe and extremely effective cine has been available in the country. PAP smears save lives, and women should start getting one at least once a year once they become sexually active. Not enough people know about the 3 points above. Here's how it is. If all cases of cervical cancer starts out with an HPV infection and the said HPV infection can be safely and easily prevented by a shot to the arm of cine, then this particular cancer shouldn't be as prevalent as it is today. Figures are sketchy at best, this being a third world country after all, but roughly 10 Filipinas die of cervical cancer every fucking day! That's 70 women a week! Taking probability into account once more, plotting every one of them as either ugly or beautiful, then it follows that at least 50% of those women will be hot. That's 35 beautiful women a week! Yes, like all cancers, cervical cancer does not discriminate against physical attractiveness. Seriously though, the best thing you can do is tell all the women in your life, if you care about them at all, to ask about HPV and getting cinated the next time they see their OB/GYNs and to convince them that the next time be reasonably soon. Why? Because cancer is never a laughing matter. Now get to it! The Mordo wills it!

P Things I learned while making phone calls today: 1. My dentist-to-be's office is closed on Mondays. I guess today is a "dentist Monday" because they were closed today, too, thus I could not schedule an appointment. I miss John F. (old dentist) already. 2. My dental insurance company kept telling me to call them back "in a few days" because my newly purchased plan wasn't showing up in their system. It turns out that they actually

did put me in, but they listed my plan as running from August 22 to September 1... of this year. So I paid \$165 for 11 days of coverage. They say they're fixing this, and to call back "in a few days." 3. Emory's student health web interface thingie only works with Internet Explorer. I can still do stuff, but I have to fill out forms in hard copy instead of online, and call the office to schedule appointments rather than using their web application. Should call them now to schedule my next HPV cine (I got 1/3 back in Boston) and figure out if they want me to see anyone here for my old GI problems and/or my new brain problems (still hallucinating some nights; it's awesome, if by "awesome" you mean "terrifying and sleep depriving"). 4. The IRS lost my copy of Form 8822 (change of address). Checks from the IRS (like my economic stimulus check) are not forwarded, so if you don't correctly submit this form before you move (WHICH I FUCKING DID), the check is returned to sender... assuming whoever lives at my old apartment now bothered to put it back in the mail. In 4 weeks I can call the IRS again (and perhaps sit on hold for another 45 minutes, like I did today) to learn whether the check was returned or someone cashed it. If someone who was not me attempted to cash it, I can complete "signature verification" paperwork and perhaps get my \$600 someday. Yessirree, afternoons "off." They sure are fun. I think my biochem homework will have to wait until after dinner, because F this S for now.

P I wish people would use just a little tiny bit of common sense sometimes. There's enormous hue and cry in the conservative media at the moment about the supposed deadly threat of Gardasil, the cine recently released to prevent 4 strains of HPV most frequently linked to cervical cancer. All of it is complete nonsense. The group primarily responsible for trying to make this an issue is Judicial Watch, who stated "We are not interested in proving causality. That's a scientific question. We are just interested in getting these documents out to the public." Yet, with every public mention they assert causality between the cine and all sorts of horrors including paralysis and death. They have no actual basis for these claims, and in fact, some cases of death they cite happened over 100 days after cination. Got cinated and killed in a car crash 3 months later? Gardasil is deadly! Of course, Fox News and World

Net Daily aren't particularly interested in facts or science, so it isn't particularly surprising that they've jumped on this story, and are presenting these "side effects" as inevitable. Furthermore, is the destructive insistence that this cine is unnecessary, as cervical cancer isn't fatal, that regular pap smears will catch it every time before it becomes more than a minor annoyance (ignoring the fact that often treatment results in a complete hysterectomy, so even if not fatal, hardly insignificant). All of this just makes me so furious, even more so because I know that the majority of the American public is dangerously under-educated when it comes to health and science, and even worse completely complacent when it comes to accepting what the news media says.

P School started today, and I'm a busy person these days, so not much from me. On today's to-do list: Write treatment for short zombie film; track down Hollywood producer/director last seen in Michigan. I hasten to add these two jobs are unrelated. And to think I could have been a dental hygienist. (The other day our director called to say, "I called Dan, just to pick his brain." Ha ha ha.) All I'm going to leave you with today is this: Culture wars suck. It's pointless, enervating and takes time and energy away from important matters. And yet, like gorging on potato chips and chocolate-covered peanuts, it's hard to stay away. So when I broke my internet diet and dropped in on Rod Dreher, I wasn't surprised to read this : I'm listening to three young blogger-radio reporters from a lefty Canadian radio program (lots of "about" in the air) talk about their day. They're on the other side of the blue curtain here, so I don't know what they look like. One was just on the phone coordinating with "the Socialist World people." A woman reporter from the site just joined the two guys. She's been out reporting, and said she talked to an Evangelical about Bristol Palin's pregnancy. "She was really beautiful," the woman said. "This pregnancy thing hasn't turned them off. If anything, it's rallying them to embrace her." The reporter said this as if it well and truly was shocking. She wasn't being condescending at all; she was really shocked. She spoke with the amazement of an anthropology grad student on her first dig. Well, of course. Being foreigners, their knowledge of the United States isn't as deep

as ours, and so they assume that when people are willing to spend decades of their lives talking about teenage sluts who don't deserve birth control and HPV cines ("the slut shot" - I'd never heard that charming turn of phrase before this week; thanks, Free Republic!), they might back it up when the chips are down. Stupid foreigners. Spend a little more time in this country, and you might learn a thing or two about the breathtaking hypocrisy of these folks. If Hillary Clinton really wanted to back Barack Obama, she'd cut a very simple 30-second spot right around now, laying out five random facts about Sarah Palin, and add, "Imagine what they'd be saying if I was the one who did these things." Fade out. I am looking forward to seeing the newest Palin son-in-law (almost) tonight, who I understand has now dropped out of high school. This story keeps getting better.

N I would like to point out that this is exactly the reason why I didn't get the cervical cancer cine. Well, that and the fact that it's no longer effective after you turn 25. My point is, I knew this was going to happen. And this was exactly why I was so against it being required for girls to attend school. Yes, let's make an extremely large number of people take a drug that hasn't been on the market for that long. Then let's watch a chunk of them have horrible effects.

P Governments around the globe have been wooed and wowed, rushing to pay for the expensive cine, Gardasil.

P I survived the visits to the doctor and dentist. The doctor gave me a prescription for thyroid medication (I was expecting that) and also something for acid reflux. So hopefully I'll start feeling better. He also gave me a Tetanus booster and started me on the 3 increments of the HPV cine. The HPV cine can only be given to girls/women between the ages of 9-26 so I barely made the cut. Good deal. The HPV shot stung a little when it went in, but that was it. The arm with the Tetanus shot has been a little sore all day today. The dentist was more like torture. I hate the dentist. I got to go through 18 wonderful rounds of x-rays with this thing so giant that it barely fit in my mouth. Whatever happened to the slightly smaller and much less painful slides? Or better yet, the last dentist I went to had this machine that

you put your chin on a little chin rest thing and then it scanned all the way around your head so it could get everything all at once and no pain at all. I want that machine next time. Anyway, they poked and prodded at my teeth and gums and "cleaned" them. Not so sure on the "clean" part. I left feeling gritty and gross. Results were that I have one small cavity and the dentist recommends I replace an old silver "temporary" crown that I've had for 10 years. He also recommended I have a crown put on one of my teeth that has a large filling in it. He said that will just help the existing filling from cracking or whatever. Then they told me if I felt so inclined they could replace all my silver fillings with white ones and I would just pay the difference between silver and white (my insurance only covers silver). As much as I would love to have white fillings, none of the ones I currently have are in any of my visible teeth unless I have my mouth wide open and you're staring in the very back. I don't know if it's really worth it, or whether I could stand to have all those teeth drilled again. Just thinking about it makes me shudder. I asked if they had sedation dentistry, but they said no. I mean, if they could just put me out and do it all at once, I would be all for it. The new O.A.R. album came out today. I really want to buy it, but all the stores I went to either didn't get it or were sold out. Lame.

P I'm getting pretty effing mad. I've refused to side with those traditionally called the "lih-bruhls." I'm also refusing to side with the "Con-serv-ih-tives." These labels don't matter. They shouldn't matter. Why are absolutely stupid ideas given the patina of legitimacy by wrapping them up in the cloth of political persuasion? I think we shouldn't allow young girls to get cinated against cervical cancer because it will cause promiscuity. Effing stupid idea. I think we shouldn't allow any logging since it reduces the amount of trees in a forest. Also effing stupid. Freeing yourself of the label frees you to call shenanigans whenever stupid ideas come up. And trust me, there have been some doozies of late. I'm tired of the "lih-bruhls" with half thought, Polyanna-ish ideas of how the world works and interacts. I'm tired of the petty "con-serv-ih-tives" who refuse to step outside of their limited life experiences as they try to regain some false ideal of a 1950's America. I'm sick of the

refrain, "I'm a loyal ..." Bullshit, you're too effing lazy to think critically about something that's mildly confusing. Maybe mommy and daddy scared you into thinking that you can't question the machine. Whatever, it's time to grow up.

N      When I last went to my doctor she urged me to get a brand new cine called Gardasil to prevent against cervical cancer and HPV. I was very interested, and made the appointments to get it. The Gardasil cine is a series of three shots, each a few months apart. I got my first shot, and unlike other people, had a fine experience. Needles and getting shots doesn't bother me at all. But, I never went back for my other two shots. The earliest literature of gardasil is dated in the early 1990's. There is NO long term studies of what this drug may do to women in the future. Anything that is having to do with only females, and essentially the cervix, can be potentially harmful to reproductive health in the future. Personally I want to have the option to have children in my own womb rather than in someone elses, or in a test tube. I am interested to see what the effects of Gardasil are on my generation of women in let's say, twenty years or so. We'll wait and see I guess.

P      CDC: At Least 1 in 4 Teenage Girls Has Sexually Transmitted Disease " At least one in four teenage girls nationwide has a sexually transmitted disease, or more than 3 million teens, according to the first study of its kind in this age group." The results of this study do not surprise me at all. Of the teenagers and young adults I know, there is an unacceptable level of ignorance and complacency when it comes to sexual activity. I am flabbergasted at just how many seemingly intelligent people will engage in extremely risky sexual behavior. The most common form I see is neglecting (or avoiding!) condom use. Perhaps it's the sense of invincibility folks have in their youth, or maybe they think that such things 'happen to other people, not me'. Either way, it's this lack of concern that contributes to high STD rates. The 'hook up' culture in colleges doesn't help, and I'm sure this has bled over into high schools. I really don't have any problem with people exploring their sexuality and having a good time, as long as they are smart about it an minimize the risks. If one is going to have one night stands, 'hookups', etc., then cover your damn bases!



Part of the problem is males pressuring females to allow them to go condomless. As a male I can understand some of the motivation. But honestly, a properly-fitted condom does not affect quality of experience by more than 5-10% or so (I suspect this may only hold true for circumcised men, though, since they have no intact gliding mechanism to disrupt.). I think the vast majority of dislike for condoms (as well as condom failures/breakage), comes from men who haven't taken the time to investigate which brand and style works best for their particular topography. One size does NOT fit all! Men, take some time to sample the selections out there and find one that fits properly! Bringing along some extra lube will do wonders too. Females, you are shirking responsibility (due to ignorance, apathy, or the heat of the moment overriding one's better sense) as well when you cave in to such pressure. A woman's risk of being infected by an STD from an infected partner is significantly higher than a man's. This imbalance of risk should motivate a woman to be extra-vigilant when it comes to what she exposes her body to. Get the HPV cine series. Sure it costs \$400, but it's worth getting. Save up if you have to. If you have daughters, get it for them before they hit puberty. Even if they aren't sexually active until much later in life, it'll help prevent potential complications that would cost far more (i.e. cervical cancer) than the initial cination price. Never cave to pressure (or the desire) to go condomless unless you are absolutely sure of your and your partner's health status, and have other forms of contraception in use. To put things a bit into perspective as far as one's risk of getting some type of STD when one regularly has unprotected sex, let's do a bit of binomial probability. So, 25% of teenage girls have an STD of some sort or another (usually HPV). Let's assume this is the case for all post-pubescent sexually-active age groups of both sexes. So, 25% of people have some sort of STD. Now, rate of transmission won't be 100%... It'll be disease-dependent, and will differ by gender (as mentioned previously, men have a lower risk of infection than women). Let's assume a 50% transmission rate. This means that one has a 25% chance of encountering an infected partner, and a 50% chance of being infected by that STD each time one has unprotected sex with that partner, making the total risk per random partner 12.5%. Obviously, if one has

repeated sex with an infected partner, the odds will be different. So, assuming one avoids one-night stands (we'll get to that later), one probably has sex multiple times with the same partner. Now, we need to use binomial probability to calculate the chance of getting infected at least ONCE (since with a disease, it only takes a single infection to be infected, of course). 1 in 4 partners will be infected. How many times does one have to have unprotected sex with an infected partner in order to get at least one STD? If a person has sex 5 times with an infected person, given a 50% transmission rate, the chance of being infected is 97%. If one happens to play around a lot and only has one night stands, one would need only 5 partners to have a 50% chance of being infected. At 10 partners this jumps to nearly 75%. Remember that infection rates are higher for women than men. If you're female, you effectively double your infection rate... So, in this little scenario, 5 one night stands becomes a 75% infection rate, and 10 becomes 94%. Those aren't very promising odds. I certainly wouldn't gamble \$5.00 at a casino with those odds, let alone my health. Bottom line... unless one is in a long-term monogamous relationship (and potentially even if so!)... use condoms, have backup contraception, educate yourself and others, get tested for STDs regularly, and know your partners well.

P ...that critics say the cervical cancer vaccine, Gardasil, will "encourage promiscuity in young women". Surely that assumes that most young women can actually connect the dots and understand that having lots of unprotected sex can give them HPV and cervical cancer which I doubt most of them do. So yes, let us by all means encourage young women to die of a totally preventable condition just to satisfy the moral certitude of a few pedants. Grrrr.

P I had a bit of a rant a couple of weeks ago about how the SNP had sold out to the Roman Catholic church by agreeing to their demand that no information on how to protect themselves from other diseases should be given to girls in their schools receiving the HPV vaccination. An example of what can happen when teenagers don't have access to that vital information can be found in Ed Pilkington's article on Sarah Palin in today's Guardian:

”Most poignantly, she will not countenance sex education for teenagers, preferring instead to preach that abstinence is the only complete protection against pregnancy or venereal disease. It would be a cheap shot to suggest that this week’s bombshell revelation that her 17-year-old daughter, Bristol, is herself pregnant was Palin’s comeuppance. But it would not be unfair to point out that Alaska has the highest per capita incidence of chlamydia in the country, and that the rate of teenage pregnancies across the US, including within her state, has just risen for the first time in 14 years - a trend many blame on George Bush’s preferment of abstinence-only education. ”It’s frustrating we aren’t doing more to inform our children,” said Brittany Goodnight of the Alaska branch of Planned Parenthood.” So, Shona Robison, this is potentially what you have let us in for - our teen pregnancy rate is already too high and you may have just made it worse.

P One of the things that has bothered me about this recent Stand Up 2 Cancer ads is the perpetuation of the idea that there is such a disease as ”cancer” that might have a single magic bullet cure. In truth, cancers are a diverse collection of related diseases found in very different tissue types throughout the body. There’s a very good article on io9.com discussing the nature of cancer and emerging treatments. I think it is important to point out some of the very good successes that medicine has already had in combating some specific types of cancer. 1. Acute Lymphoblastic Leukemia in children: The survival rate has gone from near zero to approximately 90% in the last forty years. 2. Testicular cancer: the survival rate is over 90% 3. Colon cancer: with regular colonoscopies, this pre-cancerous polyps can usually be removed before they become troublesome 4. Cervical cancer: deaths from this cancer are near zero in women who get regular pap smears. With the new HPV vaccine, even women who don’t get regular screening can be protected, and the need for biopsies will go down.

P Yesterday morning I had a colposcopy, biopsy and loop excision of the cervix (according to the pink piece of paper the doctor at the hospital gave me). So, they took a chunk from my cervix and are going to test it and I am now bleeding black tar from my

vadge and I don't like it and it's apparently going to be doing so for TWO WEEKS! I'm only on day two and I already have diaper rash because pads hate me. Oh, also... the second I got propped up onto the exam table the doctor noticed that my period was starting. Like, juuust started. THANK-YOU, BODY!! ;\_- I don't know how bad it was because they cut a hole in my vadge and now I can't tell if them wiping me up down there afterward was because of peroid or my wound-blood. It's weird though, I have a feeling that me stressin' out might have stopped my period or something because it isn't coming out when I pee like it usually does. I just have black tar showing up on my pad. SICK! Anyway, when they looked at my junk through the camera they found a spot that looks "different" and they're going to see if it's something or nothing or... I dunno. Oh, and they also gave me a pamphlet about the Gardasil cination for HPV incase I want to spend \$500 on a new drug. Nice. I'm sure there are worse procedures to have and that I'm just being a big baby right now... but whatever. Still sucks having some asshole I don't know poke me with a sharp stick in the junk and make me bleed for two weeks. \*shakes fist\*

P To my 5 female readers, Just curious. If you watched a movie in the last 4 months you may have come across this really depressing ad: So have you? It gets the point across though and yeah, I was all set to watch a really funny comedy when all of a sudden, bummer! I'd turn my head to ask my movie buddy, "hey have you been to the OB lately?" but I was watching with my dad. Anyway. It turns out that the ad forms part of a cervic cancer awareness advocacy and HPV prevention being spearheaded by Dr. Manalastas and the PGH. I found this out after being contacted by the good doctor - he's the head of OB in PGH and a faculty member at the UP College of Medicine. On the Internets So BlogBank is helping out PGH and Dr. Manalastas in the cervic cancer awareness campaign. It is, apparently, the second most lethal death by cancer cause in the Philippines for women (the first is breast cancer). What makes it sad is that the awareness isn't so huge because of a social stigma of visiting your OB for reasons other than pregnancy causes people to stare. Is this true?? Sorry, I've never been to an OB. I learned that HPV can be easily prevented

by regular check ups and a cine - even sadder the fact that not a lot of women know this. As for what the cine is - well consult your OB! We launched a series of ads for this month on the awareness campaign, and also held a small dinner ( Peter Juan wrote about this ). Truth is, I feel really uncomfortable talking about such a topic because needles make me weak (I literally lose my grip) and well, I can't relate. The campaign's message to women is to please visit your OB and have yourself checked up. I hear a papsmear is like, what,

N The federal government is considering making Gardasil cination, made by Merk pharmaceuticals, mandatory for female immigrants applying for citizenship. These shots, which cinate against certain types of cervical cancer, are not mandatory for U.S. citizens. So why are they mandatory for immigrants? The two most obvious reasons are: profit - women would have to pay

P I support giving girls the new cine to prevent infections by some strains of the Human Papilloma virus (AKA Warts) that is associated with cervical cancer in women. But at the time the cine was released, it's use almost became a crusade: Some states even mandated young girls receive the very expensive cine, and parents who

P i just spied this on boingboing: US states renamed for countries with similar GDPs seems a little perverse! anyway, in more important news, who wants to help me mobilize an ontario-wide campaign to get OHIP to cover the HPV cine? i'm serious. let's fekin do this thing.

N Manditory cines are my biggest fear of Socilized medicine (along with inssuffi-  
ciant healthcare and horrible government control of our private lives) Manditory cines would be the most dangerous thing to our childrens health. Okay, they is a correlation between cines and autisim, (along with various Cancers, the HPV cine is a hoax) Look at the charts, the Polio cine lines right up with the cancer boom from 1 in 33 to 1 in 3, Autisim has exploded as children have to get more cines, kids havet to take more then 30 cines. Flu shots have not stoped a flu for the past 10 years and three years of injections in a row in elderly

have shown a 1000% increase in risk for alzheimers call me a conspiracy therost but whats worse, a kid getting mumps for a few weeks and devloping a life long immunity OR take a risk on autisim. No offense but the heavy Autisim is a fate worst then death. can you imagine actually having a normal mind but being trapped in your own body like a prison.

P In liveblogging Sarah Palin's acceptance speech, I noted that the ideal Republican candidate is someone who has the ability to lie without shame . Sarah Palin proved within minutes of her speech that she was well-qualified in that regard. The latest McCain-Palin ad reaffirms that the modern Republican Party, barren of ideas and solutions, will effortlessly and shamelessly resort to depraved lies to win. The latest barrel-scrapping effort from John McCain is an ad which states that Barack Obama wants to teach kindergartners about sex before they can read (see details and discussion here ). Barack Obama's response: "It is shameful and downright perverse for the McCain campaign to use a bill that was written to protect young children from sexual predators as a recycled and discredited political attack against a father of two young girls - a position that his friend Mitt Romney also holds. Last week, John McCain told Time magazine he couldn't define what honor was. Now we know why," says Obama spokesman Bill Burton in an emailed statement. It is indeed a remarkably dishonorable act for John McCain to "approve this message." There is no Vietnam scar deep enough and no POW flag large enough to mask the brazen ugliness of this unprincipled and deliberate lie. John McCain has used his five and half years in a cell three decades ago to shield off criticism of years' worth of typical Republican politics. No mantle of honor, though, can hide the hideousness of McCain's latest attack. It is not so much that the ad is a lie. Lies , after all, are the campaign currency of Pinocchio Palin and Mendacious MccCain, used to buy a news cycle there or low-information vote there. It is the type of lie that is presented that speaks more to John McCain's character than five years in a prison cell ever did. The ad accuses Barack Obama, a father of two young girls, of voting to teach kindergartners about sex. In shorthand, it paints Obama as a sexual deviant, one

who thinks it is entirely appropriate to teach your doe-eyed toddler about condoms and contraceptives. The legislation was aimed at teaching children how to avoid sexual predators, but as this campaign season has proven time and time again, a well-sourced fact will wither in the face of an oft-repeated lie that is coddled by the media and echoed on the airwaves as truth. So, welcome to today's Republican Party, where facts are treated like an Rorschach inkblot test. Where the benign is viewed as perverse and the perverse is viewed as benign. Through the prism of this inverted ethical philosophy, it's completely acceptable to laud a presidential candidate who thinks rape is just hilarious and to cheer on a vice-presidential candidate who was mayor of a town that charged victims for rape kits . It's a party where a congressman can state that naked prisoners stacked in a pyramid and tortured is nothing more than "hazing" , where Senators on a D.C. madam's list still are welcomed into the GOP with open arms, and where Representatives soliciting 16 year old boys are allowed to resign rather than be kicked out of the party altogether. What turns the stomach of normal society is not merely tolerated here in the confines of Pervert Central, but it is fully accepted in this circus. Here, above all, the abnormal is normal in the caucus of freaks. But oh, the indignation ! When a Democrat tries to protect children from a world of Mark Foleys, he is painted as a sex-obsessed deviant. When a party seeks to preserve choice, it's portrayed as wanting a society of one-night stands. When rational science supports a cine to prevent cervical cancer, the GOP sees a potion for whores. Yes, folks, it is Democrats who are obsessed with sex and who are insisting on reaching into your bedrooms and your bodies. The Republicans? This Grand Old Party of pervert-protectors and sex monitors? This cadre of prudes who would rather have uninformed toddlers be molested, clueless teens knocked up, and uneducated Americans spreading STDs like fleas? Clearly, they are the honorable ones—the moral compass of our nation. They are nothing more than a parade of faux-Puritans marching back in time, waving banners of lies and singing smear chants along the way, twisting facts in the hot air that billows from their mouths, grinning stupidly from

ear to ear, and reveling in their singular ability to beat the low drums of deceit without shame, day after day, until Election Day dawns.

P Finally got myself over the health center today to get the HPV cination. I know that this cine can't protect me from all causes of cervical cancer (the handy info sheet they gave me said as much, plus I've been researching online), but man—a cine that can protect me from the most likely causes of a fatal cancer? Sign me up! I hope that this is a cine that becomes mandatory, like tetanus (speaking of, mine was out of date. Oops! So I got that, too). Something like 3,700 women in the US die every year from cervical cancer, and it's the second cancer-causing death among women worldwide. And there's a cine! (Side note: that's why all those who are arguing against this cine for girls make me mad—as Carrie and I were discussing, parents can have their daughters cinated early, but use the opportunity to either just say "hey, here's another cine like all the others we make you get!" or if they decide, they can say, "here's a cine and we want you to know what it can protect you against and what it can't" and so on. Saying that this cine will make girls more promiscuous and is therefore bad and shouldn't be given, even though it could save their lives, is only about controlling women, not protecting them. Carrie's analogy: if there were a cine for skin cancer, would people protest that giving it would enable the cinated to go tanning and therefore shouldn't be given?) The lady at the health center who gave me these shots was the absolute best shot giver ever . I learned that if you lean back slightly against something, let your arms hang loosely and wiggle your fingers a bit, the shot doesn't hurt pretty much at all. The point is that shots hurt only if you are tense, and that the real trick is the finger wiggling, an action which prevents the muscle in the shoulder (whatever it's called; Leslie would know...) from tensing up. !————— Kitchen Nightmares (the UK version is much better than the US version, btw, but TWoP only recaps the US ones) After talking to Q, a cook, Ramsay learns that the microwave is Sebastian's best friend. Q is of the opinion that they should be making way more stuff from scratch. What I don't understand is why Q doesn't just snap



his fingers and summon up homemade meals, an adult Wesley even more dorky than the actual, and a moment of pure laughter for Ramsay.

N Dear Senator McCain and Senator Obama: As parents of children who we believe, as well as many of our doctors believe, were injured by cinations, we have a question for you. We would like to know where you both stand on selective cination/immunization. It has come to our attention that Senator Obama is against selective cination, and we would like to confirm this. We have not yet heard from Senator McCain regarding his position on the issue, and would like to confirm that as well. What we are not interested in is what either of you plan to do about autism. We have already heard from both of you, and do not wish to receive a response covering this topic, or any other response that does not specifically address this question. Our question has to do solely with selective cination, and nothing else. You see, we believe that parents should have the right to decide what is injected into their children. We are not anti-cine, rather pro-cine safety. The fact is, none of the cines on the current schedule recommended by the CDC have been tested with one another. This is why we consider this recommended schedule to not only be reckless, but extremely irresponsible, and in some aspects, criminal. cines like the Hepatitis-B cine, are fundamentally unnecessary for pre-pubescent children. The high risk groups for Hepatitis-B are health care workers, and those who engage in homosexual activity. There are others on the schedule that have not been proven to be effective for the masses, and in some cases, there are cines on the schedule with several reported adverse affects like Merck's Gardasil. (adverse as in death) Nearly all of the cines on the schedule have toxic ingredients such aluminum, formaldehyde, and unfortunately some still contain thimerosal. It is for the reasons stated above that we desperately need to know where both of you stand on this issue, and are requesting formal statements. As it stands now, Senator Obama's campaign has lost a lot of support over this issue. Senator McCain is risking the same thing, because if it becomes a case where both of you are against selective cination, it then becomes a non-issue for us as voters. This is

turn would send a lot of votes back to Senator Obama by default. What say you both?  
Respectfully Yours,

P Well, Sara got her cinations. That was an ordeal. You would have thought she was five. Oh well. She has to go back in two months for the second HPV dose. After leaving the dr.'s office, we went around the corner to Backyard Burger and got some chicken fingers. Then, we went to Downey's General Store to look at their fabric (finally!). My grandmother was right. They are much less expensive than the other places. Sara still seems to have her heart set on that green fabric at another store, so I will probably get that and get the rest of it at Downey's. I found a trim there I really like. It's black with pink rose buds and green leaves. If I can find a green fabric to match those leaves, it will look very nice. :)

N ... or rather Gardasil v Cervarix Something just does not sit right with me about the way these HPV cines have been promoted. It's totally not related to Seroxat other than children being targeted once again by corporate companies who are going to make billions of pounds/dollars. This needs investigating and awareness needs to be raised. Something is sticking in my throat about the way both these cines are being promoted. The NHS are promoting it on their webpage and answering questions like politicians. Is the cine safe? NHS: The cine has undergone rigorous safety testing as part of the licensing process required in the UK and other European countries. Didn't they say that about Thalidomide ? In America Merck were pushing for the cine to be mandatory, in fact, in the state of Texas it IS now mandatory. This stinks! I'll post soon on this matter Fid

N DON'T GET THE GARDASIL CINE! Don't believe the lies Big Pharma tells you to make a buck. The Gardasil cine is a huge cash-cow for Merck who experienced great losses after the whole Vioxx thing. Don't put yourself, your daughter, your sister, or your friend in danger. Spread the word, the Gardasil cine is NOT SAFE! But don't take it from me, just watch this instead:

P I take my last post back. I wrote it at an emotional time. I like Obama too, but it would be really cool if we had a woman president. my decision is as simple as that. From now on, I'm not going to talk about politics ever. que mas? My preceptorship is going well. There were times last week when I wanted to cry out of frustration (and my stethoscope falling into a dirty commode? the icing on the cake!) but overall, I'm feeling more comfortable with things. I went home for a couple of days. spent valentine's day cuddling with MacKenzie and shopping at Walmart. I had a doctor's appointment. of note, I got the HPV cine (yay!) and had my first-ever pap. went to the dentist—Jessica T cleaned my teeth. no cavities! I'm being a bad friend again—I haven't had much time to do anything fun. I've been closing a lot at the store lately, so when I do have free time it's in the morning. I'm schedule for 28 hours this week, I'm not really sure why. Sumi and Angela stopped by tonight, though! I miss them so much. also, I gave up facebook and myspace for lent. there's more, but I have a paper to write

N My 16 year old daughter has been given the option to be given the cervical cancer cination.... HOWEVER, where did this drug come from, why is it, it has just came out in the media recently.. if it has been under study for years, why are we just hearing about it in the last few months... my daughter has asked me for my opinion and to be honest I am very scared to give it in case I give the wrong one.... This drug has just been introduced to women of a certain age and why can they give a prevention drug when they don't have a cure?????? Any response welcome!!!

N My twelve-year-old daughter came home from school this week with a letter urging me to give my consent for her to have the new HPV cine. The cine will protect against cervical cancer which is said to be caused by the human papilloma virus (HPV). This virus is spread during sexual activity and as you can probably imagine, it's very difficult for me to contemplate the future sexual activity of my twelve-year old daughter who still wears pig-tails and plays with dolls. And it's even harder for us as parents to consider that our kids might have several sexual partners and that they might not fully protect themselves

every time. But of course, reality dictates that our children will one day have a sex-life and it's up to us as parents to guide them towards responsible and safe relationships. There's been some controversy over this cine. Some believe it effectively gives consent for our kids to become sexually active, that it even encourages this. Or at best it will make them less responsible. Well I don't go along with the notion that it will encourage them into sexual activity at all. Most teenagers do not wait for parental consent. They will have sex whether we tell them they can or not. I'm realistic enough to know that most kids are not likely to abstain. One only has to look at the failure of the ridiculous abstinence programme to know this. I can however accept that the cine might give them a false sense of protection which does worry me a bit. I mean the cine only protects against cervical cancer. It won't protect against Chlamydia or other such STD's. And that isn't my only concern. The experts tell us that most of the time, the virus doesn't cause cancer because the body's immune system kills it off, so I have to ask, is the cine really so important? Also, the cine is untested in terms of future side-effects. And hell, our kids are immunised to the max throughout their childhood. Is this one really necessary if for most of the time, the virus doesn't cause cancer. And crucially, is it hugely beneficial to public-health? Or is it just a case of the pharmaceutical industry being the main winner once again? Yes, I am very cynical about the pharmaceutical industry. Of course, I wouldn't let my cynicism prevent my daughter from being protected but I can't help questioning the value of this cination programme apart from it making huge profits for the pharma's. If there was a major public health risk . . . if it was a communicable disease that was airborne or transmitted by other casual means, then I wouldn't hesitate. The decision for my daughter to have the cine is legally hers to make. Parental consent is preferred but not essential. We've discussed it a little and although she says she would rather have it because she doesn't want to get cancer, I really feel that she doesn't fully understand the wider picture and she is simply repeating what her peers are saying. That's not to mention the pressure her teacher has probably placed on her to have

it during their school discussions. Should I say yes anyway . . . just in case? I probably will. But with some reservations.

P I have the HPV virus that can cause cervical cancer. I have a low grade form of this. My colposcopy reveals that my cervical cells are normal and that my body is fighting this so-called "vaginal common cold". My next test will be a year from now, and there's an 85% chance that my body will have rid itself of this thing. The aggravating issue is that I was vaccinated against HPV last year and it is possible that I contracted the virus before getting the shots, and it just hadn't shown up on any of my pap smears until now. It's even possible that I contracted it as far back as two years ago, which means that between 2006 and August of 2007 one of those fuckers I rubbed uglies with gave this kiss of possible death to me. Also, what sucks ass is that HPV is dormant in men. A man can sleep with 1,000 women, never use a condom, contract HPV and never know it, nor ever have any symptoms, nor is there a way to test for it in men. It is also possible to get HPV with a condom, and 80% of sexually active young women have or will have this virus if they are not vaccinated before ever beginning to have sex. So what's the moral of the story here? There is none. I probably won't get cancer, and I probably will never know who gave it to me, and there's no point in changing my sexual behavior because this apparently was inevitable. But I must say, sex and I are really not on good terms as of late. A second virginity is sounding appealing right about now.

N From USCIS : U.S. Citizenship and Immigration Services (USCIS) announced today a revised list of vaccines required for applicants seeking to adjust status to become legal permanent residents. This revision follows guidance from the Department of Health and Human Services, Centers for Disease Control and Prevention (CDC). CDC's revised Technical Instructions to Civil Surgeons for vaccination Requirements require the following age-appropriate additional vaccinations to adjust status to legal permanent resident: \* Rotavirus \* Hepatitis A \* Meningococcal \* Human papillomavirus \* Zoster The requirements for these new vaccines went into effect on July 1, 2008, however CDC approved a 30-day grace period

for any medical exam conducted before August 1, 2008. At that time the new cinations, if appropriate, must be administered in order for USCIS to approve the applicant for adjustment of status. Now this is kind of a curve ball. Jill hit on most of the important points here, about how ANOTHER barrier to citizenship status is the last thing we need, particularly when that barrier can cost upwards of \$300. People tell me that this isn't particular action isn't actually a Merck ploy to get more people to get the cine, but rather a Bush administration immigration barrier. Like we need another one of those. Ironic, considering that conservatives were a big part of the campaign to block the cine mandates last year, for mostly anti-sex reasons. I guess they don't care about these things when it comes to immigrant women. My main problem with this is that it adds another significant financial barrier for immigrant women, since the cine is seriously expensive and there is little funding for it. WOC PhD talks more about the history of medical abuses against women of color and her fears about the cine . Thanks to Raquel for the links

N I first heard a week or so ago that the United States is going to require the HPV cine (when age-appropriate) among the mandatory cines for those seeking legal permanent residency. I have not been opposed school systems making the cine mandatory - with the caveat of generous opt-out provisions - because this action often triggers coverage of the very expensive cine which many families could not otherwise choose because they could not afford it. However, requiring the cine for immigrants troubles me. There is no opt-out provision that I'm aware of, and as far as I know there is not then the same assistance with the cine price as there would be for U.S.-born schoolchildren. The woc phd blog has a much lengthier discussion of vulnerable populations, but I will add that I am concerned that people who may be at a language disadvantage may not be appropriately informed about this new cine. Even if they are adequately informed, they still have no chance to refuse (which U.S. citizens do have - the cine is not mandatory for all U.S. residents), and have an additional \$300 barrier between themselves and legal residency. Even when cines are mandated for schoolchildren, there is choice involved - parents can get the facts, and then decide. In this case, there

is no choice, and a vaccine is being required for a disease that does not pose a tremendous public health threat if immigrants are not vaccinated. I'm not someone who believes all vaccines are bad, but I'm very wary when the requirements go this far, on something so new, and so expensive, and in the targeted population of immigrants. Feministe also has discussion. woc phd distills concerns down to a profit motive for the vaccine maker and sneaky human subjects testing - give that a read for an interesting perspective. I do still think that many of the concerns about Gardasil (the one currently approved HPV vaccine in the U.S.) have been blown out of proportion by reporters and others who don't understand the VAERS system (and how to interpret adverse event reports) or the realities of postmarketing surveillance, and I can understand a motivation to improve the health of underserved immigrant populations by potentially preventing a cancer that requires ongoing, reliable access to healthcare for early detection. However, something about requiring this vaccine in order to gain legal residency just gives me the willies.

N I'm going to be writing a new blog with a friend of mine from Canada regarding this HPV debacle. I smell one huge rat that has been once again let loose via the sewers of Pharma and the regulators. I will keep you posted once the new blog is set - up. Meantime, Do yourself a favour and research these two vaccines and the whole HPV history. You owe it to your daughters... and if Pharma get their own way, your sons too! Fid

P With the start of the school year, debate has heated up again about Gardasil, Merck's vaccine against human papillomavirus. Since writing my series of four articles on The Politics and PR of Cervical Cancer last year, I have continued to track the developments and have noticed some interesting trends. While Gardasil has not been the financial jackpot that Merck was hoping it would be, there is still a steady push for vaccination and even still for mandates. Even though it has not played out as positively as Merck planned, it is too early to turn our attention away from their efforts to sell their so-called "vaccine against cancer." Merck's obvious corporate steamrolling has generated a public backlash and has also faced general concerns about possible health risks from vaccinations, along with conservative opposition to

the idea of government health mandates. These reactions slowed the company's money train but didn't bring it to a full stop. [read more](#)

N      Lola's Land is a fun, interactive site that will advise, inform, entertain and inspire girls aged 9 to 13. [Lolasland.com](#) is fresh, inspirational, positive and content rich. It's a land that girls will love and parents will happily embrace. On their 'Love Yourself' page, 9 to 13 year old girls and their parents can learn about HPV (Human papillomavirus) They are told that HPV is a very common sexually transmitted infection and is the main cause of cervical cancer. What they are NOT told is: The FDA has, for four years, known that HPV was not the cause of cervical cancer. Why HPV infections are self-limiting and pose no real danger in healthy women. Here is the FDA document. Who are behind this promotion on Lola's Land? Well according to this article, it's GlaxoSmithKline and the British Government. Nothing like using children for promotion of a product. I hope the MHRA read the raw data on this one because if they didn't and kids start dropping down dead or developing cancerous lesions later in life then someone will have to be held accountable! If Cervarix does not actually prevent cervical cancer then why is it being marketed as a long-lasting cancer prevention? Can GlaxoSmithKline's HPV vaccine, Cervarix, increase the risk of precancerous lesions? If yes, then why are patients or the parents of patients not told this? Is this Cervarix promotion underhand? Is it legal? It would be awful in ten or twenty years time to learn that the public had been duped again. It's a very tough decision for any parent to make but they must be given the facts. If Glaxo or Merck are once again hiding data or manipulating numbers then they do so at the expense of our children. All I am saying is do your research before you consent to your daughter having this vaccine. Don't believe that GlaxoSmithKline and Merck are in this to save children, young women. They are in this for the money and both companies have a history of paying out claimants in the courts for defective drugs they have manufactured. Here's a good place to start your research regarding Gardasil and HPV HPV vaccine Hoax Exposed: FDA Documents Reveal HPV "Not



Associated with Cervical Cancer” I’m glad I have no daughters... I’m glad I no longer put my trust in GlaxoSmithKline. Once bitten you see. Fid

P My aunt gave me a Cervical Cancer cine Sunday night. Two follow-up shots to go. One next month and one in March. Goodness gracious. Arm’s still kinda swollen and hurts like the beejezus. Don’t think this is normal. Also, nose running all over the place and slight fever. Normal after cine? Maybe. Arm giving me more grief than everything else put together. Work really sucks (more) without the old team. Might not last my ”one-year” and resign early. Still thinking about 13th month though. Shame not to wait for 13th month pay. 3 more months, yes? Maybe. I’ll get back to you on that. The new Nano is whack. Colours are cute, but that’s it. Seriously, ” spoken menus ”? WTF, Apple.

P I was struck by a story in the local paper this morning. Our county supervisors rejected a recommendation by the civil grand jury to begin a ”needle exchange” program. Apparently they were unanimous in their decision to reject the program, and were swayed by the reactionary (and) flawed arguments of our District Attorney, and Sheriff. If you exchange a needle for a clean one, they say, you are condoning the behavior and the addiction. What struck me about this story was not that the county refused to create this program, but that it didn’t have one in the first place . I was a college student in 1991 in New Haven, CT when that city rolled out a controversial and innovative needle exchange program. The same arguments were voiced then. But you know what, it worked. It reduced the number of contaminated needles on the street and slowed the spread of HIV. The program was successfully replicated in every state of the union and federal studies commissioned by the Surgeon General of the United States found the program effective in reducing the transmission of disease without creating new addicts. But here I am twenty years later, on the opposite coast (most trends move west to east, not the other way around...) listening to the same stupid debate. This is a health issue, not a law enforcement issue. Recognizing that drug users are not risk averse people - it is ridiculous to assume that the availability of clean needles determines whether to inject poison into their veins. Many of these addicts are selling their bodies and engaging

in extremely risky criminal behavior in order to feed their habit in the first place. A dirty needle is not a deterrent. An exchange program at least reduces the riskiness of the behavior that is going to occur anyway. (Recognizing reality is not the same as "condoning" reality. You hear the same arguments from those who think cinating our daughters against cancer causing HPV is going to somehow encourage them to have sex. ) The exchange program would also bring intravenous drug users into contact with health care providers who might be able to save a few lives along the way. And finally, a financial argument. This program might cost around \$500,000. What are the health care savings of preventing the spread of HIV and Hepatitis. If this program saves three or four people, the county is in the black. I don't really see a down side.

N I really like what Jill has to say here regarding mandatory HPV cines for immigrants: "our goal as reproductive justice advocates should be to give women as many options as possible, and to situate those options in a broader context that takes into account our individual and collective histories within a system that treats us differently based on our race, class, physical ability, and other factors" Now that's the kind of nuanced opinion I can get behind. I was getting really tired of the myopic pro-Gardasil arguments coming from the feminist corner of late. This perspective is better focused true feminist values: freedom and opportunity for all women. I have a problem with mandatory cines. I've always just gone along with the flow anyway and gotten the cine, but not without misgivings. Aside from the vegan/animal rights issues, I'm afraid of side-effects. And, as you may have noticed, I really don't like being told what to do ;)

P Hey K, I got your email and thought I would give you some insight on my personal experience with cancer HPV. This is so you'll know what to expect, if you have something similar. By choice and during a big transition, I practiced abstinence for 3 years prior to having sex with the long time ex. In the beginning, shortly having sex with him, I felt a warm sick flush. Some time later, I noticed I had spot bleeding when I wasn't on my period. I was lucky that my annual papsmear was due. They told me I was infected with a

high risk HPV strain and needed a specialist. I emailed my ex bf, since he was deployed at the time and have kept him up-to-date on my progress, even after his return. He didn't know he was a carrier, since there aren't any popular cancer HPV tests available for men. It's rare for them to get penile cancer, unless they haven't been circumcized. Which is probably why uncut cocks tend to carrier more HPV strains. I got an OBGYN/cervical cancer specialist doc, who has performed surgeries for cervical cancer patients for over 25 years. There are over a 100 different strains of HPV. The most aggressive strains are 16 and 18 and a few others, depending on how well your body fights the virus. I was told I had one of those high risk HPV strains that cause cancer. A colposcopy was scheduled, where the doc uses a special magnifying device to look at your vulva, vagina, and cervix. I had precancerous lesions in several areas on my cervix. A biopsy was performed, so he could test the tissue. During that time, I also had small chunks removed from infected areas. I was scheduled to come back every three months after healing, only to find more precancerous lesions had reappeared... going through the same, to include using a chemical to burn off the lesions. I'm very healthy and rarely get sick for many years... my body didn't even have a chance with this aggressive strain. I'm thankful that I caught this early. Once the doc gets the virus under control, he'll ask for 6 month follow ups. If you've had 2 consecutive 6 month clearances, you can return to your annual paps. It took 2-3 years of treatments/follow ups, before I could go back to regular paps. The lifetime virus is dormant and rarely reactivates itself unless you're under tremendous stress... or when your immune system get compromised. This specialist has seen repeat cases of the same many years later, where the patient doesn't sleep around. So it's important to get routine papsmeears. If you caught the HPV at a later time, it's possible they would need to freeze parts of your cervix to remove the infected areas. If left untreated for years, the lesions will progress to more advanced stages of cancer. My last annual papsmear was clear, so I now have this virus under control - dormant. Unfortunately, during my full panel of std tests w/bloodwork, also discovered I had dormant genital herpes - HSV-2. I would never have known I was a carrier, since I've never experienced any visual breakouts.

We continued to see one another after our breakup and sometime during got a really bad case of the flu for 3 weeks. Yep, got back together and broke up again. If you share the same strain of HPV, it doesn't ping pong back and forth. I never miss my annual stds exams and have had them since highschool. I'm positive I got genital herpes from the same ex during our 5 yr relationship/LTR. All HPV and Herpes I & II are lifetime STD viruses. It doesn't go away but can be controlled by the body, to go dormant. There's no cure out there for carriers. There is a cination for teenagers and very young adults to prevent cancer HPV... but from what I hear, most of them are already sexually active or it's too late to give them the cine. It's still fairly new without a lot of history to it. Skin-to-skin stds can be passed via oral (throat), anal and vaginal. Genital warts (low risk HPV), Cancerous HPV (high risks strains), Herpes I (oral, cold sores), Herpes II (genital) Condoms do not protect you - uncovered areas/skin contact. Also, you need to ask for specific tests/bloodwork or may be an asymptomatic carrier and not know it Good luck on your treatments I hope this helps

N The following is a summary of selected women's health-related blog entries. "Immigration authorities Add Gardasil to List of Required cines," Feministing: The U.S. Citizenship and Immigration Services on Monday announced it has added the human papillomavirus cine to a revised list of cines required for applicants looking to become legal residents, a Feministing blog entry says.

N I recently let my employer know that I would not be returning to work after my maternity leave. Since then, a lot of people have said things like: "It's great if you can do that." I think that the implication is that either my husband is in a lucrative career or we have money stashed away somewhere. Either of those situations would be lovely, but in reality, it just doesn't make sense for me to go to work all day so that I can channel three quarters of my non-profit salary into daycare for Mackenzie. Besides, the word daycare conjures up terrible images of a million germ-covered toddler hands, babies sleeping unsupervised on their tummies, and Barney—all of which I never want my child to encounter. Furthermore, most daycare programs require children to have up-to-date cinations. I literally tremble at

the thought of injecting my kid so full of aluminum, formaldehyde, and baby cow's blood that she smells like an embalming chamber and develops a funny green glow. Seriously, the American Academy of Pediatrics/CDC vaccination schedule is a blatant, in-your-face reminder that it doesn't matter who gets elected president this year because pharmaceutical companies run the nation. Lucky for us, the latest addition to the Sears Parenting Library (my one stop shop for all things baby) is The Vaccine Book, which provides objective, practical information on vaccines, as well as alternative and selective schedules. We're following the alternative schedule, which means that Mackenzie will get her DTaP and Rotavirus shots this Friday. Rotavirus is a fairly common disease that causes fever, vomiting, and diarrhea. After receiving the vaccine, babies often experience fever, vomiting, and diarrhea. Right there is the definition of irony. I spent nine months avoiding everything that makes life worth living (alcohol, soft imported cheese, espresso, and sushi) so that I could have a healthy baby, and now I'm supposed to turn her itty-bitty immune system over to the forces of darkness?! The CDC has funded some research ("research" is quite a euphemism for the crap they've generated) that contradicts the notion that vaccines and autism go together like hamburgers and french fries. No matter that there is little to no autism in countries and communities (e.g., the Amish) that don't vaccinate babies. Also, let's not forget that the CDC is pushing the Gardasil vaccine for girls, despite the fact that it's been studied for all of five minutes (Merck tested Gardasil on fewer than 1200 girls (!!!) under age 16 before the drug was approved) and numerous previously healthy recipients of the vaccine have experienced serious neurological mayhem following the shot. This is why I pay little attention to the CDC's recommendation against co-sleeping. The same agency that wants to make a syringe pin cushion out of my baby says she shouldn't sleep in our bed with us. Baby-haters...

N I ran across this on TruthSerum Blog and it STILL surprises. HPV is now one of the mandatory vaccines for immigrants EVEN THOUGH CERVICAL CANCER IS NOT A COMMUNICABLE DISEASE and EVEN THOUGH US CITIZENS DO NOT HAVE TO TAKE THE VACCINE

Pro-choice blogging for choice In honor of Roe V. Wade, here are four good reasons for voting pro-choice and vocally supporting the pro-choice movement: 1. Anti-choice foreign policy does a great deal of harm to women worldwide, often in the most impoverished nations with the worst records for childcare and child survival. The Global Gag Rule (officially known as the Mexico City Policy) denies United States funding to any organization which lobbies for the legalization of abortion, supplies abortions to women who seek them, or even so much as informs women that abortion is an option. Many of these organizations also provide AIDS testing, sex education, and child care; denying them funding denies help to the women who need it the most, and ultimately leads to more suffering. 2. Pro-choice means just that: pro-CHOICE. I'm not advocating that every woman who has an unplanned pregnancy undergo abortion. What I \*am\* saying is that should a woman decide that abortion is the best option for her at a given time in her life, that decision should be respected and obeyed. Ultimately, if God dislikes abortions, then it's between the individual and God and should have nothing to do with the government. 3. Laws restricting access to abortion disproportionately impact poor women, young women/girls, and women of color. Cumberland County, NJ has one of the highest teen pregnancy rates in the nation (seriously- we're in the top 25 counties nationwide- look it up) and not a single Planned Parenthood clinic to be seen. The closest one is in Camden, quite a distance from Millville or Vineland and a long trip for a frightened, pregnant fifteen-year-old with no money. Again, this isn't to say that a fifteen-year-old pregnant girl should have an abortion, but all possible options should be made available to her. 4. Many anti-choice politicians vote against things like federally funded childcare, Welfare, WIC, and Head Start programs- programs which help mothers feed, clothe, and care for their children. Many also vote against laws that would make hormonal contraception more widely available, which has the potential of decreasing the number of abortions performed annually. Several of these politicians also opposed legalizing the cervical cancer vaccine because the cancer is caused by a virus that can be transmitted sexually, and they thought it would encourage young women to have more sex (if you're saying "What the FUCK," I'm right

there with you). I'm pro-choice because I believe my body and my life decisions shouldn't be controlled by anyone but me: not my parents, not a boyfriend, and certainly not a fiftysomething rich male politician. Women deserve access to education, contraception, and proper medical treatment. Abortion should be safe, legal, and rare— let's work together to make it that way!

P So I'm done with gymnastics at Trevino's for this summer. I have the next two semesters though at A&M. Only \$100 for both. Went to the Ranger's game tonight because my mom got 3 tickets. The game was boring (baseball is like golf to me), but the food was great. We got free meals at the "Diamond Club," so we had to sit with the ritzier of the business people... but like I said, the food was good. Oh and uh, the Rangers lost. So I decided I would get the Gardasil cinations because, well why not?, and the first one of the series of three made me nauseous to the point that I was unable to ride in a car for a couple of days. So, I'm due for the second one, but after keeping my eye on the number of deaths it's caused so far, I'm not so sure I want to go through with it. My doctor said she would prescribe an anti-nausea medicine, but what the hell is that going to do, except get rid of the warning sign before I fall off the bridge? Watched the first three episodes of Darkly Dreaming Dexter. It's been pretty good, although once through will be enough. It's not as much fun when there's no mystery. I've always thought that the psychopath is as close as reality can get to a superhero. It seems to take a lack of sanity for the average person to be motivated to go out on his own, seek out those that do wrong, and be willing to rid the world of them. Finished Spanish classes. Studying for the GRE.=/ I don't think I will do so well.

P When I got my first Gardasil injection two months ago, I was warned it would be painful. However, I wasn't at all impressed by the pain. It was a basic cination. In fact, having gotten the Pap Smear From Hell on the same day, getting jabbed with a needle was pretty much a high point. Okay. So I've now revised my opinion. I got jabbed for the second time today, and HOLY MOTHER OF GOD AND ALL HER WACKY NEPHEWS. I think

it was the first time since I was a little kid that I needed to express pain during a shot, and I've gotten some special shots over the years. Ouch!!! Things to take away from this experience: HPV = not good. Cervical cancer = can kill your ass. Gardasil = expensive and painful. Merck = tool of the patriarchy (see previous posts on the medical establishment and how it hates women).

N Female immigrants are now required to receive the Gardasil cine before they can become legal permanent residents of the U.S. We've been over this ground before . The cine assumes sexual promiscuity. It hasn't been tested very long, people are reporting scary side-effects, and its protective effect lasts only 5 years. First we were experimenting on our own children, now on immigrants. Whatever. It's only women.

N Doctors say Perry's cine mandate for girls is premature Gov. Rick Perry's order requiring schoolgirls to get inoculated against a sexually transmitted virus linked to cervical cancer may be unpopular with social

P I'm trying very hard to understand the opposition to this cine. My question is actually aimed more at the parents and in particular the ones who oppose it. I cannot understand why so many parents are objecting to their daughters having this cination. In the UK alone up to 400 YOUNG women a year die from cervical cancer, which is a silent cancer. Surely if there is a chance, that your child can be saved from the sheer pain and misery this cancer would give, it's worth the very minor risks of this cine? Do you think there could be a certain element with regards to your opposition because this cine is to protect against a sex related virus? And do you perhaps feel that this is making you bias in your judgment? The Mary Whitehouse brigade seem to feel that this cine is in some way encouraging their child to have sex or lead their child to sexual promiscuity! I fail to understand this attitude. Basically my question is, if this cine was say, to immunize against another cancer that was not sex related, would you still feel so strongly against it or is this the main reason for your opposition? (I mean no offense to anyone by the way, we are all entitled to our opinions, it's just a simple question. This question isn't intended to cause an argument or offend. There



are teenage girls who oppose this cine too, but I feel the majority of their views are based on what their parents have said and the fact many teenagers are apprehensive regarding needles and this could be their main concern rather than the cine itself)

N Merck's Gardasil cine is supposed to prevent young women from getting cervical cancer. Now the FDA has approved a claim for two less common cancers as well. But whether it will actually prevent any kind of cancer is unknown. As of July, the federal government's cine Adverse Events Reporting System has received over 9,700 reports of problems since the cine's introduction in 2006. These include paralysis, seizures, and miscarriage. Twenty deaths have been reported, although the government has not acknowledged a link yet. cines were originally developed to protect the public from extremely contagious diseases. Now dangerous and unproven cines are being mandated in the hope they will guard against diseases that require very intimate contact to transmit. Where will it end?

P today i went to the doctors to get my HPV cination and papsmere test. when i got there i found out i had to apply for the cination first to get permission from my insurance company. it's always about the money. so, i just ended up getting the papsmere. it wasn't as bad as everyone made it out to be. it was more uncomfortable than painful. i hope the results are normal. i'm REALLY scared. i wish i never had sex, even if it means never meeting allan. i registered to vote today! i feel so . not political. i honestly don't know anything about mccain and obama. i definitely want to be more educated before voting day rolls around!

N my wariness of the HPV cine (brand name: Gardasil) is more than semantic squeamishness about all things needle-y. Recently the Food & Drug Administration announced it's allowing for Gardasil to be used to prevent against vaginal and vulva (vulvic-ular?) cancers. My skepticism hummms

N emily sent my mom/family a letter she thinks that chris probably died from her gardasil cine she also sent a copy of this photograph. it makes me so upset, she was such a good person im still just shook up & in shock. you're missed lady.

N Hello, ladies. This one is for you. I received an email via today from a 23 year old woman's mother DESPERATE for help for her daughter who is suddenly having severe muscle spasms and severe chronic pain after having received the 2nd of the three gardasil shots. Those are KNOWN and ACKNOWLEDGED possible side effects of gardasil. I know some of you have been told to get cinated for HPV. Take this series of 3 shots and you'll be able to HPV free forever, the doctors and nurses tell you. Check out this mom's story: "My daughter received the Gardasil cine on October 16, 2007 just 3 days before her 14th birthday. Within minutes of receiving the cine, her face drew blank and her lips turned blue then she proceeded to have a seizure. She fell from the chair to the floor in the examination room. she then had a second seizure. It took her over 2 hours to become coherent enough to leave the doctor's office. Later that evening she was lathargic and complained of numbness and tingling in her lags and feet. With in a few day she began having severe knee pain and weakness in her knees and hips. She has been experiencing chronic knee pain for over 9 months now. Currently she suffers from the chronic knee pain, periodic numbness and tingling on the left side of her body, dizziness when she stands up, diminished short term memory, diminished vocabulary, moodiness, irritability, and periods of being zoned out." – from. I want you to know that Gardasil is a dangerous mofo. There are thousands of reports of severe adverse reactions to this drug. I could go into the details of HPV and whether you really need to be protected against it, but I will keep it short and say DON'T BOTHER. It isn't worth the risk. The risk of your getting HPV is probably way lower than the chance of getting a severe adverse reaction to this f-ed up drug. Because I care – DON'T GET CINATED. And if you already have and you haven't had any adverse reactions, whew. You're probably in the clear!

P Char! I jogged for another hour straight today! ... granted, I had some pie and ice cream earlier, so that factored in, but... I still did it! I'm training! FOR US! FOR THE MARATHON! :) In other news, I had my first shot in the round for the HPV cination today. One less!

N Judith Siers-Poisson writes that the Gardasil HPV cine has not turned out to be the shot in the arm that Merck hoped it would be.

P " ... my dear friends, I have invited you to this group because I feel it is a great concern for us all. young girls will soon be forced to take the HPV cine in school... I feel that everyone should inform themselves fully about this product. " ... and with those words I was invited me to join a group that exists solely to spread FUD against the HPV cine. They're requiring young girls to get dosed with this cine? Not a moment too soon if you ask me. They required everyone at my high school to get dosed with cines against hepatitis and my elementary school required us all students to be cinated against everything else before admission. I don't see that this is any different. Obviously the inviter has never met anyone who actually caught said virus. I have. You know what? The idea of having genital warts on one's naughty bits was enough to scare me into looking into taking the cine myself. As soon as there's an HPV cine for men, I'll be the first one in line to shoot up.

P I didn't really think it was possible but I've found another sensationalist news group. And now that I've read that sentence, I'm not sure why I didn't think it was possible. It's called "Team 5 Investigates" - the local ABC affiliate. I see where they are going with the stories that they make, but really, the way they do it leads to panic and/or misunderstanding. Caffeine consumption requires you to call Poison Control! If you get into an accident in Massachusetts, you will DIE! Now, let me repeat, I understand what they are trying to say with each story. I just have a problem with the one-sided aspect of the stories. The caffeine one makes it sound like the caffeine that is present in chocolate will do you serious harm if you eat chocolate right after coffee (never mind a mocha). The trauma center one is also valid, trauma centers are nice, but for crying out loud people, I can save your life if you are

hurt in an accident, and if you land in the back on my ambulance, I'm driving you to the closest hospital, and then we'll figure out where to put you after you are stable. A more important story that they could be running is the fact that Massachusetts will be ending hospital diversions - THAT'S a story. That might end up being a big problem. I started looking at this because I saw a promo the other night for a story that I believe they are running on Thursday - how the Gardasil cine can kill you. And I know that I'll probably be pissed off watching it, but I got to. Got to know what they are saying. I'll probably rant about it later. :)

P A Catholic school has banned the cervical cancer cine from being given on its premises. It cites possible side effects as its reason. I don't believe that for one minute. How dare they deny their young women the right to life saving cinations? That doesn't sound very Christian to me.

P A Roman Catholic high school in Bury, Greater Manchester, has decided to not permit its students to be cinated against the papilloma virus on its premises. Now the report (from the Manchester Evening News ) is purely about a letter, not yet sent to parents, about the decision, and nobody from the school has commented directly on the report, so it is only preliminary. Now I would defend, vehemently, the right of the school to make this decision. It is the school's property, and parents have the choice whether or not to send their daughters to the school. Furthermore, as the cine is taxpayer funded, there should be other options to obtain the cination if parents so choose. I do not object to the right to withhold it. This is a libertarian stance - asserting private property rights. However, as an objectivist, I find the stance itself based on irrational and immoral grounds. It has been reported that the letter announcing the reasons for withholding permission " points out that the cine protects against only 70 per cent of cervical cancers, and gives details of possible side-effects to the jab ". Only 70%!! As opposed to all those cinations derived from the Vatican, which has done wonders in fighting cancer over the years. Now the side effects are logical to advise about, but that should then be a question of rational trade off. The real problem the school

has is with sex. ” Morally it seems to be a sticking plaster response. Parents must consider the knock-on effect of encouraging sexual promiscuity. Instead of taking it for granted that teenagers will engage in sexual activity, we can offer a vision of a full life keeping yourself for a lifelong partnership in marriage ”. So dramatically reducing the risk of a cancer that at best could mean a lengthy period of medical treatment, at worse death, is ”encouraging sexual promiscuity”. Well then by extension there should be NO cinations, indeed there shouldn’t even be any drugs or treatment for people with STDs or HIV should there? The threat of cancer discourages sexual promiscuity. So presumably the school and the church regards those girls who get cervical cancer as sinful, and deserving of their fate - because after all, they should have not sinned because, somehow, that protects you completely from the papilloma virus and cervical cancer. As usual, the wisdom of celibate men on these matters Is anyone delivering the message that ”get this cine and you can shag without protection happily”? Of course not. The message is more a case of, here is a cine that could possibly save your life. Nobody is saying that the risk of pregnancy has gone or the risk of HIV or other STDs. Who thinks that girls go ”hold it, I might get the papilloma virus, I will wait till I’m married”. Most who do wait do so for a host of reasons which are emotional and rational, none of which celibate men are really in a place to understand well. Much as they understand a ” full life keeping yourself for a lifelong partnership in marriage ” - an ideal I think is rather lovely, if it is sustained genuinely rather than by altruistic sacrifice. However it is more serious than that. Women can get cervical cancer from the papilloma virus without having been sexually promiscuous. Indeed people can get HIV without having been sexually promiscuous as well. Yet the school, and by implication the Roman Catholic Church cares not about that. Death apparently isn’t so important that the achievements of medical science should be as widely available as possible to delay it. Moral? Hardly. It is one thing to frighten young girls into fearing an eternity of agony and damnation if they dare wander off a certain path, it is another to deliberately deny them a means to prevent the onset of a fatal disease, so that the threat of that disease can be hanging over them if

they wander off that path. So not only do they risk being punished in this life, but having that life shortened as well. The school has every right to do this, but that does not make it immune from criticism for its apparent motives. RSS feed for this site ATOM feed for this site

N HPV vaccination forced in DC and Virginia. I find that absurd, disturbing, and disgusting. Merck's fear based ads were bad enough. What happened to choice? Education? Celibacy? Monogamy? What about the

P The logic of religious scum: A Catholic school has become the first in the country to block a project to educate girls against cervical cancer. Governors of St Monica's High School in Bury - who have previously criticised the jab...

P Catholic school to block cervical jabs I find this incredibly short sighted. It's a good thing that the papilloma virus can't be transmitted by married sexual intercourse. .Oh wait, biology doesn't work like that. Blair 'God Squad' to tackle malaria Malaria will apparently wither in the face of determined religious opposition. Maybe mosquito nets or a cone would be a better idea. Just a suggestion. Dog welcome at mosque It looks as if the historical "rough" treatment of dogs under Shari'ah law is finally under review. Zoe Heller 'There's something heroic about battling off the forces of scepticism' I really hope that she's been misquoted because it's a bit of a silly statement otherwise. 'There's something heroic about battling off the forces of scepticism' 'There's something heroic about credulity' 'I was starting to think sceptically but then I pushed the idea away and kept thinking magical thoughts' Good grief.

P Okay, so President Bush's approval rating is sitting at 28%, and his disapproval is at 71% . This isn't good for him obviously, but to put in perspective exactly how bad it is: 70% of Americans back a human papilloma virus vaccine . Yes, that's right. President Bush is now polling worse than venereal disease. OH! AND! At 28%, we're just one point off from the official Kung Fu Monkey Crazification Factor theoretical floor of 27%.

P The news that a Catholic high school in Prestwich is refusing to allow its girls to be vaccinated against cervical cancer is all over the mainstream media, so it is unlikely to be news to Freethinker readers. No 'moral considerations' at St Monica's R.C. High School. But the extraordinary thing about this case is not the fact that members of the governing board of Saint Monica's Roman Catholic High School appear to be putting their own moral/sexual squeamishness above the health of the girls in their charge. It is the fact that they are denying it. Of course, it could be entirely irrelevant that one of the Governors, a Monsignor John Allen, said of the HPV vaccine, Morally it seems to be a sticking-plaster response. Parents must consider the knock-on effect of encouraging sexual promiscuity. Instead of taking it for granted that teenagers will engage in sexual activity, we can offer a vision of a full life keeping yourself for a lifelong partnership in marriage. And it might be true that, as it says on their website, Moral considerations such as those reported in the Manchester Evening News for 24th September did not form any part of the Governors' decision. But it does seem to be a strange coincidence that the only school in the country denying its girls the opportunity to have this potentially life-saving jab administered on its premises - for vaguely stated reasons of parental choice and clinical hygiene - just happens to be run by an organisation notorious for its unhealthy obsession with sex in all its forms.

P I do not believe the reasoning given by the Calgary RC School Board in refusing to make HPV vaccine available through their schools: Calgary Catholic school board members voted Wednesday night not to make the human papillomavirus (HPV) vaccine available in schools. Trustee Mary Martin said Calgary Bishop Fred Henry didn't want to appear to be condoning pre-marital sex. "The bishop felt it was a moral issue." When will idiots like Bishop Henry get it through their thick skulls that preventing disease has exactly NOTHING TO DO with premarital sex? This meme about providing the vaccine "might give the impression that ..." is completely specious. It's like saying that sex education is giving license for people to engage in extra-marital sex. It's completely devoid of any anchor in reality. Using the

Bishop's logic, we shouldn't provide treatment for Syphilis - because the afflicted must be involved in immoral behaviour.

P I have been wrestling with this damn cination. I have done some research on it and this is in my mind what have found out. HPV is a sexually transmitted virus that can lead to certain types of cervical cancer and genital warts. It can only be cinated against prior to coming in contact with it - so prior to sexual activity is best. I agree that it is a VERY valuable cination to have my daughter recieve - I am simply concerned about long term side effects that no one know about. That is something that only time will tell. SO . . . here is what I have choosen to do. . . I am not getting the cination done this year. I am going to wait a year. Ceridwyn is still full in the boys are completely icky stage. I also discussed the cination with her - it is her body after all. I explained to her how the virus is trasmitted and that it can cause cancer. I told her that we still have time to cinate her in a year or two once I have been able to do more research on side effects and see if any new and unexpeced ones come out. I am not naive - I am not a parent who thinks their kid will never have sex. My kid thinks she will never have sex and told me she didn't need that cination. I explained to her that one day she will have sex . . . to which she replied - "oh yeah, good point" I need to feel more comfortable with the procedure. I just simply don't right now. I would love to hear from parents who have had to make this decision or are in the process with making this decision.

N This is why I don't agree with the HPV cine Those symptoms sound just like the ones that 3000 US girls reported as they slowly became disabled to the point of Locked-In Syndrome. 11 died. This whole cine pisses me off. We'll ignore the health concerns I have over it for now. The company that made it had suffered a terrible financial loss and needed to make money quickly, so it played on our fears that we might be ill some day, it had a marketing campaign to that end, sending out literature to GP practices and even directly to parents of teens to scare them into having it done. There's way more cash in stuff your don't need to prove for years than cancer drugs that need to work now. Has the MMR



with its possible links to autism taught us nothing? Put nothing in your body unless you've researched it thoroughly. Even 20 years ago, there was concerns that the BCG was pointless, because it only gives limited protection for a short length of time and we cinate too late anyway - other countries do it at three, as children are most at risk. We do it at 13. I found that out at college, 12 years ago, reading some article for studying. You could even make the argument that in a country that has modern amenities and free public access to them, if the risk groups are those who are immuno-impaired - junkies, cancer sufferers, transplant patients, immigrants from really poor countries- do we even still the cine at all? Maybe the reason TB is largely confined to those groups in the present day in the EU because of universal healthcare and utilities. (I happily agree that the reason that TB was eradicated as an epidemic was because of the cine and penicillin, but even that took a good twenty years to accomplish. It was also a disease that affected everyone, was very contractible) The same can't be said of the HPV cine. And why is it always girls who bear the brunt of these cines? They get HPV from somewhere? By not treating males, we run the risk of infecting females again when the viral protection runs out. HPV has links to various cancers of the penis. Don't boys count? (Not that I'd give it to Stewart anyway) (And yes I do wear a seat belt in my car. But one's health tends to be dependant on ones' own actions, whereas being in a car leaves me at the mercy of others) But it's your body - if you think the risks are enough, you've got every right to do it. Just PLEASE, ensure you know the risks and the benefits before you do.

P For the first time in over a year and a half, I've actually found a physician I like. Hurrah! She's new, but she works at the place where my last good doctor worked (years and years ago), so I think the vibes rubbed off on her. I walked into the building and it actually felt like a doctor's office, instead of a hole in the wall with terrifying people in it. (Madeline: I'm going to schedule a pap smear, and she's going to start me on the HPV cine at that time.) I have anti-biotics for a UTI, so hopefully that will go right away. Re-reading The Chronicles of Narnia , as it's been years. The books are a little dry for my taste, these days,

but still fun reading. Quick, certainly. My only issue now is that I'm constantly looking for religious allusion, which was not something I was concerned with at ten. It is February 1st. As per my decision to not submit scholarship applications to Evergreen, it's been decided I'm not going. Monetarily, it would be a very stupid decision. Unfortunately, the smart thing would have been to take care of my math credits when I was actually going to school. But my brain went "haa! I'm not gooing to a regular school, why would I take math?" So now, in the event that I am most likely going to a UC/CSU, I need to take at least two math courses. The good thing is: I don't have to stay here to take those classes. The internet is for yay! I'm not positive what I'm doing just yet, but I can't say how relieved I am that I have time to figure it out. I just couldn't handle having to re-figure out my life and commit to spending large sums of money. My consolation to myself for feeling so lazy and like I'm taking forever is that this now gives me the opportunity to go abroad for grad school without major debt. Chances are also higher that I'll enjoy whatever it is I end up doing. Am going to make a list of every career I could possibly be interested in, and investigate. I already made the mistake of being too confident, and now I'm at a loss. I don't want to do that again, in a few years, when I've got a BA in something I don't like anymore.

P Today my doctor told me that lesbians have a reduced chance of getting HPV/cervical cancer! And just so you know, the rumor that gay women have an increased risk of HIV/AIDS is completely untrue. HOWEVER, every chick 9-26 years old should still get the HPV cine. It is by far the most painful/soreness-inducing shot I've ever known – even the nurse said it was pretty bad. Seriously, I'm having a hard time \*typing\* right now. But I'd rather have that than genital warts or cancer any day! Indianapolis Pride Festival: June 9th. Sexiness (in case the above info wasn't enough to bring you over to the dark side)

P According to my good friend, the Professor, the main side-effect of the human papilloma virus (ie the cine the NHS are now giving to 12 and 13 year old girls to protect them against cervical cancer) is, wait for it, hysteria. It's obvious really. Get a group of 30 girls together, try to inject them and, of course, much fainting and general drama will

follow. This would be funny, if it wasn't for the inevitable pressure group that will form as a result. How long before some parent in Hampsted, hearing that their daughter fainted and so did some of her class mates, organises a campaign, to be followed by a public enquiry, the results of which will completely exonerate the cine but which the campaigners will refuse to believe, ever? Ah well. I think it's a good thing. The cine that is, not the campaign, which I'm opposed to, even before it's launched.

P       Where I live, girls in school are receiving a vaccination for HPV (a common STD that can cause cervical cancer). All the school boards are accepting this except for the Catholic School board. They think it promotes pre-marital sex and therefore refuse to give it to their female students. We live in an increasingly non-religious world, so even if these little girls stay virgins until marriage (which lets face it: is extremely rare these days)...who's to say their husband has not had other partners? Do you think the Catholic School Board is putting these girls at risk, or are they doing the right thing?

N       According to the NHS Immunisation information website , You get HPV by being sexually active with someone else who has it. It is very common and over half of all women who have sex will get infected with HPV at some time in their lifetime. Therefore it would seem that if young girls were not to have sex until they are married, they would not need this vaccine. If they have any doubts about the man they want to marry, they can ask him to go for test and, should he test positive and she still wants to marry him, she can then go for the vaccine. It seems to me that there is no justification for a Catholic school - or any school - to be involved in administering this vaccine. HPV is not like chicken pox or measles/mumps which cannot be controlled by human behaviour and where there is a clear public health issue involved. A Catholic school should teach the young boys and girls about chastity as a virtue, necessary for both their spiritual and physical well-being, and the best form of protection from sexually transmitted infections. To allow the administration of this vaccine in schools is pretty much admitting - and condoning - sexual activity amongst its pupils. I also think a good school should remit this matter to parents. I applaud the decision of

the governors of St Monica's RC High School in Prestwich, Greater Manchester, not to have the cine administered on its premises. See Catholic Commentary , Catholic Mom of 10 , Fr Ray Blake , and Mulier Fortis . The same website also points to the ineffectiveness of condoms in protecting from the virus: Using condoms does reduce the risk of getting HPV. However it doesn't mean you can't get HPV because some areas of the body are not covered by condoms. Remember you can get HPV through sexual contact. So, what about condoms and AIDS? Is this an official admission of the condom's lack of effectiveness in prevent the spread of HIV/AIDS?

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