Social Science & Medicine 101 (2014) 155–165

Contents lists available at ScienceDirect

Social Science & Medicine

journal homepage: www.elsevier.com/locate/socscimed

The pharmaceuticalization of sexual risk: Vaccine development and the new politics of cancer prevention

Laura Mamo [a,*], Steven Epstein [b]

[a] Health Equity Institute, San Francisco State University, 1600 Holloway Ave, HSS 358A, San Francisco, CA 94132, USA
[b] Northwestern University, USA

ARTICLE INFO

Article history:
Available online 21 November 2013

Keywords:
Pharmaceuticalization
Sexualization
Sexual risk
Vaccines
Cancer prevention

ABSTRACT

Vaccine development is a core component of pharmaceutical industry activity and a key site for studying pharmaceuticalization processes. In recent decades, two so-called cancer vaccines have entered the U.S. medical marketplace: a vaccine targeting hepatitis B virus (HBV) to prevent liver cancers and a vaccine targeting human papillomavirus (HPV) to prevent cervical and other cancers. These viruses are two of six sexually transmissible infectious agents (STIs) that are causally linked to the development of cancers; collectively they reference an expanding approach to apprehending cancer that focuses attention simultaneously "inward" toward biomolecular processes and "outward" toward risk behaviors, sexual practices, and lifestyles. This paper juxtaposes the cases of HBV and HPV and their vaccine trajectories to analyze how vaccines, like pharmaceuticals more generally, are emblematic of contemporary pharmaceuticalization processes. We argue that individualized risk, in this case sexual risk, is produced and treated by scientific claims of links between STIs and cancers and through pharmaceutical company and biomedical practices. Simultaneous processes of sexualization and pharmaceuticalization mark these cases. Our comparison demonstrates that these processes are not uniform, and that the production of risks, subjects, and bodies depends not only on the specificities of vaccine development but also on the broader political and cultural frames within which sexuality is understood.

Introduction

Two sets of preventive "cancer vaccines" are currently on the medical marketplace: vaccines targeting the hepatitis B virus (HBV) to prevent a common form of liver cancer and vaccines targeting human papillomavirus (HPV) to prevent cervical and other HPV-related cancers. These interventions targeting the HBV and HPV viruses constitute part of a body of scientific work in recent decades that has established causal connections between various infectious agents—which are transmissible person-to-person, including through sexual contact—and the subsequent onset of specific cancers. Several additional viruses that can be transmitted sexually and are causally linked to cancer, but that so far are not preventable by vaccines, include hepatitis C, human herpesvirus type 8, human T-cell lymphotrophic virus type 1, and Epstein–Barr virus. Together with HBV and HPV, research on these viruses references an expanding approach to apprehending cancer that focuses attention simultaneously "inward" toward the molecular level of the agents causally linked to cancers and "outward" toward the worlds of sexual practices, cultures, and identities that may be causally connected to the risk of infection. This new way of conceiving of cancer as linked to sexual transmitted infections (commonly termed STIs) straddles the conventional explanatory divide between biological/endogenous and social/environmental causes of cancer, shaping both knowledge about cancer and approaches to cancer prevention.

By juxtaposing the cases of HBV and HPV and their preventive vaccines, we seek to analyze how this new way of knowing and doing cancer prevention contributes to what sociologists term "pharmaceuticalization" (Abraham, 2010a, 2010b; Busfield, 2006; Conrad, 2005; Williams, Martin, & Gabe, 2011) and anthropologists describe as a "pharmaceuticalization of public health" (Biehl, 2006, 2008; Petryna, 2006; Whitemarsh, 2008) while simultaneously "sexualizing" the field of cancer prevention. Pharmaceuticalization refers to biomedical processes by which social, behavioral, or bodily conditions are defined and deemed to be in need of treatment with pharmaceuticals (Abraham, 2010a). In examining the global, political dimensions of health and illness, pharmaceuticalization reveals the ways various institutions, including the pharmaceutical industry, NGOs, and state and local actors, cooperate or collide to transform the right to health into the right to treatment (including prevention) with pharmaceuticals (Biehl, 2006). This pharmaceuticalization of public health variously

* Corresponding author. Fax: +1 415 405 2541.
E-mail address: lmamo@sfsu.edu (L. Mamo).

0277-9536/$ – see front matter © 2013 Elsevier Ltd. All rights reserved.
http://dx.doi.org/10.1016/j.socscimed.2013.11.028

produces and reflects an uneven distribution of not only pharmaceutical drugs and devices, but also health and illness among and within groups and regions. We conceptually conjoin pharmaceuticalization with processes of sexualization to understand how ideas about sexual transmission, sexual practices, and sexual cultures are implicated in and constitutive of (or, at times, in tension with) pharmaceuticalization and specifically, how these promote health first through individualized risk prevention and later as a population health strategy.

To draw out these dynamics, we analyze the sociotechnical trajectories of HBV and HPV vaccines segmented into three moments: from the time that viral causes are identified and thus a new knowledge of cancer is asserted, to vaccine implementation as a new way of doing cancer prevention, and to the stage of expanded vaccine distribution. At each stage, we examine the ways sexual and scientific meanings and categories are constituted, and once seemingly settled, incorporated into organizational and clinical practices. We analyze the interactive dynamics of biomedicine, including its political-economic context, key players, sexual risk production, invisibilities produced, and other preventive strategies offered. We conclude by asking whether vaccination is indicative of larger biomedical shifts in which the right to health has become the right to biomedical prevention (Biehl, 2006; Dumit, 2012).

We argue that these two cases follow paths similar to those of pharmaceuticals more generally: They produce risk as well as risk markets, and offer treatments that resemble not so much the vaccine markets of the early twentieth-century as the pharmaceutical markets of the twenty-first century. In these cases, individual risk, not disease, becomes the object of intervention and the terms upon which immunization practices are deployed. Yet we found that the marketing success of these vaccines, to some degree, hinges on the suppression, management, or "taming" of sexual dynamics related to that risk. In particular, individualized sexual risk becomes at least partly desexualized first by the redescription of that risk under the banner of cancer prevention and then through a range of pharmaceutical company, biomedical, and policy practices that follow. While much distinguishes the cases of HBV and HPV, the comparison demonstrates how the situationally contingent production of risky subjects and risky bodies depends not only on the specificities of viruses, diseases, and vaccine development but also on the broader biomedical, political-economic, and discursive frames within which sexualities are understood.

Theory and methods: analyzing pharmaceuticalization and sexualization processes

We conceptualize viral agents with cancer causing properties as nodes in a network of molecular biomaterials, sociocultural discourses, and material practices. We situate these in the context of processes of biomedicalization to capture biomedical, institutional, and knowledge-making processes following a post-WWII expansion of medicine that includes shifts from the "clinical gaze" to a "molecular gaze" (Clarke, Mamo, Fishman, Fosket, & Shim, 2010; Rose, 2007), shifts from illness to health as the object of biomedical intervention, and an increasing de-emphasis on social, structural, and behavioral approaches to health and illness. And, we draw on the anthropological concept of the "pharmaceuticalization of public health" (Biehl, 2006; Petryna, 2006; Whitemarsh, 2008) for two purposes: first, to apprehend how the pharmaceutical industry has become a key source of not only treatments and interventions but also information, education, health-promotion and prevention practices; and, second, to study how this industry conjoins with other socio-technical organizations and practices in ways that affect the distribution of health and illness.

Two conceptual assertions guide our analysis. First, contemporary biomedical processes very often produce *and* target personalized risk (Aronowitz, 2010; Clarke et al., 2010), pre-symptomatic illness (Fosket, 2010; Lock, 1993), and what Stefan Timmermans and Mara Buchbinder (2010) term "patients-in-waiting." As historian of medicine Robert Aronowitz (2010) asserted, the HPV vaccine Gardasil, developed and marketed by the pharmaceutical company Merck and Co., is less a traditional vaccine preventing a disease than it is a drug aimed at reducing individualized risk. This vaccine, like other pharmaceuticals more generally, is marketed to consumers using appeals to personal choice, the promise of alleviating suffering, and a call to individual responsibility. Women and girls are offered freedom from worries of future cervical cancer and sold a sense of personal satisfaction, girl empowerment, and self-care engagement (Aronowitz, 2010; Mamo, Nelson, & Clark, 2010).

Second, the concept of a "pharmaceutical nexus" examines the meeting of pharmaceutical industries with clinical medicine, NGOs, and patients producing individual well-being as a commodity and a distinct achievement for some, while leaving others in either clinical ambiguity or outside treatment (Biehl, 2006; Busfield, 2006; Petryna & Kleinman, 2006; Whitemarsh, 2008). At times, individual inclusion can be accompanied by de-marginalization, as groups previously stigmatized appear to be seamlessly re-integrated into the social (Ecks, 2005). This, as well as the overall success of vaccination in reducing and alleviating suffering from disease, is welcome news. Yet when vaccines are marketed to some, who will be included in disease prevention? That is, how will social, structural and behavioral challenges to equitable access and utilization be addressed? Following Bell and Figert (2012), we seek to capture the local and global dynamics of health inequities and analyze how risk reduction as a public heath strategy might simultaneously produce uneven outcomes: some people are positioned as self-regulating consumers, as targets of public health strategy, and as consumers of corporate growth markets, while others are missed by the complexities and challenges of health intervention and remain subject to the persistent power of structural vulnerabilities.

Finally, we employ theoretical perspectives on sexual politics to capture the political-economic and sociocultural aspects of the discursive and material positioning and regulation of bodies, practices, and beliefs concerning sex, sexuality, and sexual identity. Vaccines variously carry matter and meaning (Haraway, 1997; Pollock, 2008, 2012) and, thus, allow discursive analysis of sexual transmission claims in these virus–cancer associations as well as the ways sexual meanings and practices are produced in and through networks of biomaterial-social processes. Drawing on Foucault's (1980) general contention that modern societies are characterized less by simple repression of sexuality than by a proliferation of discourses and practices relating to sexuality, health, and the body aimed at managing populations in the service of multiple social goals, we examine the ways the appearance of sexuality provokes aggressive attempts to banish it from view. As sexual matters and health concerns become intertwined, "vital" life processes as well as so-called lifestyles, behaviors, and beliefs increasingly come under the biomedical gaze. In the case of vaccines, questions emerge regarding how these form and produce bodies and biologies at-risk; how issues of sexuality are variously deployed and resisted; and how sexual transmission stands in for or effaces causal explanations that allow simultaneous bi-directionality, inward to molecular processes and outward to social-structural contexts and lives (Shostak, 2003). In our analysis we use the term *sexualization* to refer to the varied processes and attributions that infuse a domain with overt sexual meaning, and *desexualization* to describe the processes by which domains become disassociated from overt connections to sexuality.