Published in final edited form as:
J Health Polit Policy Law. 2013 April ; 38(2): 345–371. doi:10.1215/03616878-1966333.

Motherhood Preconceived: The Emergence of the Preconception Health and Health Care Initiative

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Abstract

Since the 1980s, maternal and child health experts have sought to redefine maternity care to include the period prior to pregnancy, essentially by expanding the concept of prenatal care to encompass the time before conception. In 2004, the Centers for Disease Control and Prevention endorsed and promoted this new definition when it launched the Preconception Health and Health Care Initiative. In arguing that prenatal care was often too little too late, a group of maternal and child health experts in the United States attempted to spur improvements in population health and address systemic problems in health care access and health disparities. By changing the terms of pregnancy risk and by using maternalism as a social policy strategy, the preconception health and health care paradigm promoted an ethic of anticipatory motherhood and conflated women's health with maternal health, sparking public debate about the potential social and clinical consequences of preconception care. This article tracks the construction of this policy idea and its ultimate potential utility in health and health policy discussions.

Since the 1980s, maternal and child health experts have called for a new conceptualization of pregnancy risk that includes the period prior to pregnancy. In what has been known broadly in the public health and medical literature as "preconception health and health care,"[1] by the 2000s it was deemed accepted knowledge that a woman's health status and behavior before pregnancy could affect the health of her pregnancy and her fetus. The basic idea of preconception care is to advise reproductive-age women about any negative health behaviors or conditions that might affect a future pregnancy. Women are generally urged to get tested (for genetic predispositions and for sexually transmitted infections), take multivitamins, stop smoking and drinking, and get any health conditions such as diabetes or obesity under control before conceiving. Despite the lack of robust clinical evidence for myriad preconception care interventions, in the 1990s women were told by organizations committed to maternal and infant health, such as the March of Dimes, that a healthy pregnancy lasts twelve months. In 2004 the Centers for Disease Control and Prevention (CDC) launched the Preconception Health and Health Care Initiative, which sparked research and public health interest in this new framework. The work of the initiative paved the way for headlines promoting pre-pregnancy thinking, such as "Start taking care of your baby before you get pregnant" (Stephenson 2011) or "You may not be ready to have a baby, but your body's been preparing for years… . You have lots to do before motherhood" (CDC 2009). Since August 1, 2012, as part of the Patient Protection and Affordable Care Act (PPACA), women with private insurance plans are no longer charged a co-payment for a preconception health or well-woman clinic visit.

[1]The public health literature on this matter broadly refers to "preconception health and health care." While "preconception health" and "preconception care" are not completely inter-changeable—with the former being about health status and the latter concerning clinical advice or treatment—I often refer to the knowledge base and initiative around these concepts as "preconception care" for purposes of brevity.

The crux of this analysis is a puzzle posed by the advancement of preconception care. Why did a group of experts promote prepregnancy care in spite of a poverty of evidence? Given the biological fact that gestation lasts nine months, how did we start to think that it should (for individual behavior and policy purposes) figuratively last longer than that? My argument is that the maternal and child health experts behind the pregnancy risk transformation took a "leap of faith" (Larsen 2012) in believing that preconception care could successfully address population health goals and social problems. By moving forward with an ostensibly logical idea that had little scientific basis, the experts were guided by cultural, not biomedical, logics. Moreover, by so changing the temporal definition of pregnancy risk, the preconception health and health care paradigm necessarily had to argue for the conflation of women's health and maternal health, fields long treated separately in clinical and policy spheres. This all occurred in a social policy system that tends to value pregnancy and potential mother-hood, one that exalts women as mothers and not women qua women.

I find that the strategy of maternalism—defining women's needs in terms of maternal needs—guided the development and deployment of this new policy idea. The corresponding entanglement of women's health with maternal health evokes anachronistic ideas about the roles of motherhood and womanhood in contemporary society. Drawing on literature that examines how the cult of motherhood urges both pregnant and new mothers to consult experts and minimize any and all potential risks to their expected or new child (Hays 1996; Lupton 1999; Armstrong 2003; Apple 2006; Wolf 2011), I contend that the preconception care paradigm shifts not only how we think about health care delivery but also how we think about motherhood. I use the term *anticipatory motherhood* to refer to a framework that positions *all* women of childbearing age as "prepregnant" and exhorts them to minimize health risks to phantom fetuses and future pregnancies.

This article shows that over the past three decades the new public health policy focus on preconception care was constructed as a remedy to health disparities, population health failings, and health care oversights. Maternal and child health statistics, especially infant mortality, are often used as proxy measures for the state of a nation's health. In this regard the United States does not fare well, even with the provision of widespread prenatal care. In 2005, the United States ranked thirtieth in the world in infant mortality, falling behind most European countries, Canada, Australia, New Zealand, Hong Kong, Singapore, Japan, and Israel (MacDorman and Mathews 2009: 6). The percentage of preterm births has risen precipitously over the past two decades; compared with Europe, the main cause of the high infant mortality rate in the United States is preterm births (MacDorman and Mathews 2009). Moreover, adverse birth outcomes that lead to infant mortality remain a major US social problem that reveals distressing racial and ethnic health disparities. The infant mortality rate for black women is 2.4 times that of white women (MacDorman and Mathews 2008), and the maternal mortality rate for black women is 3.7 times that of white women (Miniño et al. 2007).

Regardless of its laudable goals of improving maternal and child health in the United States, the preconception care initiative was met with hostility at first, largely because it spotlighted the social roles and behaviors of women. Popular news outlets expressly worried about the public policy effects of treating all women as if they were potentially pregnant. For example, a *New York Times* article titled "That Prenatal Visit May Be Months Too Late" explained, "For years, women have had it drummed into them that prenatal care is the key to having a healthy baby, and that they should see a doctor as soon as they know they are pregnant. But by then, it may already be too late" (Rabin 2006). The *Washington Post*, in "Forever Pregnant," critiqued preconception care: "New federal guidelines ask all females capable of conceiving a baby to treat themselves— and to be treated by the health care system—as pre-

pregnant, regardless of whether they plan to get pregnant anytime soon" (Payne 2006). Sociologists have called the preconception care framework "dangerous" for women (Casper and Moore 2009: 67), and *Ms.* magazine profiled preconception care with the facetious title "Warning: You Could Be Pre-pregnant" (Williams 2011).

None of the critiques leveled at preconception care thus far have captured the complexity of the issue. It is easy to assume that preconception care is a reductionist, conservative strategy aimed at women to further embed biological essentialism in social policy. This article challenges the contemporary framing of preconception care in the popular and scholarly literature that positions it as either essential or utter nonsense. By more closely examining the emergence, context, and ascendance of preconception care advocacy, I reveal that collective action in the initiative for preconception care has been much more fraught, nuanced, and concerned with women's health than has previously been reported. To be sure, we must still worry about unintended consequences, some of which I address here. But to adequately understand the construction and social meaning of preconception care, and the context and complexity of its emergence, this essay is a necessary first step.

The larger project from which this article derives focuses on capturing the ascendance of preconception care as a new field of clinical care, a new object of research agendas, and a new subject of public health strategies. I draw on content analysis of preconception health and health care policy documents as well as articles in medical and public health journals spanning the past century. The few social science critiques of preconception care to date do not analyze data beyond limited print documents and public discourse (e.g., Casper and Moore 2009). I also rely on in-depth interviews I conducted during 2010–2011 with leading national experts ($n = 57$) in maternal and child health.[2] In-depth interviews add an important layer of analysis because they help to distinguish the "contingent" or informal discourse of scientists and experts from the more formal space of scientific publications (Gilbert and Mulkay 1984). The CDC's endorsement and promotion of preconception care in the early 2000s offers a unique and bounded case through which to explore the construction of a new policy agenda. Prior to the 2000s, preconception care lived on the margins of public health and clinical discourse; by the 2000s, with the CDC's involvement, it had become a contested terrain among people interested in women's health care. After launching the Preconception Health and Health Care Initiative in 2004, the CDC convened a national summit that included the Select Panel on Preconception Care in 2005. This activity led to the publication of recommendations for preconception care that were enumerated in a watershed 2006 report (Johnson et al. 2006). In June 2006 the CDC reconvened most of the expert panel's members along with more experts in substantive areas at the CDC's Proceedings of the Preconception Health and Health Care Clinical, Public Health, and Consumer Workgroup Meetings, which took place in Atlanta, Georgia. Most experts interviewed for my study were involved in these meetings.

The full sample of interviews includes forty-three women (approximately 75 percent) and fourteen men. The respondents span the United States geographically and include geneticists, obstetricians, economists, public health specialists, pediatricians, social scientists, epidemiologists, nurses, and policy experts, along with directors of high-profile health organizations, government agencies, women's health programs, and academic medical departments. By focusing specifically on those the CDC deemed national experts, I am capturing the ideas and dialogue of a particular group charged directly with deriving and implementing the new preconception care framework. This purposive sample, selected for its designed composition, is conceptually important for understanding the rise of the preconception care paradigm. Through these sources, I aim to show when and why this

[2]This study was approved by the Brandeis University Institutional Review Board.

public health initiative became a CDC focus and the basis of a new paradigm for women's health. I analyze and discuss why preconception care constitutes a new and tense policy terrain and what it means more broadly for how we think about women, reproduction, risk, and health care in the United States.

Conceiving a New Perspective

While there were mentions of preconception care throughout twentieth-century medical literature, the idea of preconception care took off in the 1980s with the publication of some public health articles, organizational policy documents, and clinical books (see, e.g., Cefalo and Moos 1988). Still, the idea existed on the margins of public health and medicine during a time when prenatal care was vigorously promoted. The CDC's 2006 recommendations report (Johnson et al. 2006) fostered a major change in how pregnancy risk in the United States is understood in the twenty-first century. In this section I set the scene for the emergence of preconception care, including arguments that prenatal care was not doing what experts thought it would do. Out of the questioning of prenatal care, a completely new definition of pregnancy risk emerged.

The Prenatal Problem

The Children's Bureau, established in 1912 as the first federal agency dedicated exclusively to improving the conditions of children in the United States, initiated prenatal care advocacy in the early twentieth century. Yet even into the 1940s most women did not receive clinical prenatal care (Barker 1998: 1068). Such care did not take root as a universal expectation of pregnant women until the 1980s (Armstrong 2000); that decade is known in the maternal and child health field as the "prenatal care revolution" (Atrash et al. 2006). Prenatal care is a topic generally insulated from political vitriol, as it has been deemed important in the United States regardless of the political atmosphere; for example, the country increased the provision of prenatal care services to low-income women through Medicaid expansions during the Reagan administration. Experts during the 1980s, however, remained flustered with reports of adverse birth outcomes. While prenatal care was promoted as *the* answer to infant mortality in the early part of the twentieth century (Skocpol 1992), statistical analyses revealed that twentieth-century improvements in maternal and infant mortality predated the universal utilization of clinical prenatal care (Barker 1998). Progress on health markers stalled during the 1980s, and the United States continued to lag farther behind other developed countries on measures of infant and maternal mortality (Atrash et al. 2008). The United States simultaneously saw high prenatal care use rates and high rates of infant mortality and other adverse birth outcomes. As Rosenblatt (1989: 158–59) noted at the end of the decade, "Something is awry. We have invested billions of dollars in basic research into the mechanisms of maternal and neonatal disease. We have spent large sums of money to set up service delivery programs that try to make the products of this research available to women. Yet, despite these efforts, perinatal outcomes in the United States show signs of deterioration, not improvement."

Notwithstanding advances in obstetrics and expansions in prenatal care provision, it was becoming clear by the end of the twentieth century that US prenatal care was not doing what obstetricians had promised it would do. Expressly because of these realities, public health experts and some obstetricians started to question the ability of prenatal care to combat adverse birth outcomes. Some clinicians viewed the evidence on prenatal care as "equivocal," "flimsy," and "not as venerable as may be supposed" (Cefalo and Moos 1995: 2; Strong 2000: 3; Alexander and Kotelchuck 2001: 306). Maternal and child health experts began to call for a new perspective on prenatal care (Klerman 1990; Merkatz and Thompson 1990). Anxieties around prenatal care were further solidified by studies showing its inefficacy with regard to particular birth outcomes. In 2001, for example, a randomized trial

of augmented prenatal care found no reduction in low birth weight among the intervention group, fueling the notion that there were certain drivers of infant mortality, such as low birth weight, that were particularly resistant to prenatal intervention (Klerman et al. 2001).

Thus by the turn of the twenty-first century, those who were called in to work on the CDC's initiative clearly thought it imperative to look beyond prenatal care to affect health markers. In many ways they were pushing back against the medical establishment's persistent thinking that every potential birth problem could be addressed during pregnancy. One epidemiologist said to me during this research that we have to "stop thinking that [we] can fix everything during that little window of time known as pregnancy. That is ridiculous." An obstetrician explained how he had started questioning the poor evidence for prenatal care in the 1990s and wondered what exactly was being achieved in a five-minute visit with a woman who had spent two to three hours getting to the clinic. Indeed, experts confided that some public health practitioners were starting to give up on prenatal care. Another solution was needed. The prenatal care crisis thus led maternal and child health experts to start theorizing about innovative ways to improve birth outcomes. Experts interviewed in this research all pointed to one scientific finding that helped bolster the new agenda: the effect of folic acid on neural tube birth defects.

Some New Evidence

The classic case of evidence for preconception care proponents is the folic acid research that gained visibility in the 1980s. In 1976, a study in the United Kingdom indicated a relationship between vitamin deficiencies, particularly folate, and neural tube defects (Smithells, Sheppard, and Schorah 1976).[3] Amid contested findings throughout the 1980s about this relationship (see, e.g., Mills et al. 1989), a randomized clinical trial of vitamin supplementation published in the *Lancet* revealed that when women took folic acid supplementation around conception, the risk of neural tube defects such as spina bifida could be reduced (Wald et al. 1991). This led the CDC (1992) to issue a broad recommendation for women to supplement their diet with folic acid *prior to pregnancy* to reduce neural tube defects. The lead author of the *Lancet* study argued in a separate article that "there is necessarily uncertainty over when a woman will become pregnant, and she may seek medical attention only some weeks after her first missed menstrual period, which would be too late for folic acid supplementation to be effective. The general advice to women, therefore, must be to take folic acid supplementation from the time they decide to try to become pregnant" (Wald 1993: 126–27).

This quotation makes clear that the period around conception was deemed newly important. While I am not adjudicating the science behind preconception interventions, I want to stress the temporal reality of this shift in medical thinking—the preconception period was not found to be of unequivocal critical importance but instead was assumed to be because of uncertainty around pregnancy timing. This launched a whole new discourse about preconception that had little to do with the actual preconception period. During this time others argued with similar temporal confusion. Moos and Cefalo (1987: 63), two of the earliest proponents of preconception care in the United States, claimed the following:

> The period of greatest environmental sensitivity for the developing fetus is 17 and 56 days after conception… . It is well known, however, that many women do not have their pregnancies diagnosed until this critical period of development is well underway or completed. In consequence, the rapidly growing embryo is frequently

[3]Folic acid is one of the B vitamins; its naturally occurring form, folate, is found in foods such as leafy green vegetables. Neural tube defects are a class of birth defects wherein the development of the spinal cord or the brain in the fetus is devastatingly or fatally affected, such as in the condition of spina bifida.

> subjected to potentially injurious stimuli during its most vulnerable developmental phase. In an effort to achieve optimal conditions for the earliest embryonic cells, the interrelatedness of maternal health and fetal well-being deserves new emphasis.

The period of intervention in these statements is not preconception but early pregnancy; still, these kinds of arguments set the groundwork for preconception care advocacy. On the folic acid front, the US Food and Drug Administration issued a final rule in 1996 to fortify the nation's grain and cereal supply with folic acid.[4] One government administration official remarked that this rule would presume that "all women are pregnant unless proven otherwise" (Junod 2003: 56). In this particular case we see that pregnancy no longer represented the moment at which women would start to face recommendations or interventions for a healthy pregnancy. Prenatal care was depicted as being too late to prevent one of the most common congenital birth defects. This changed the burden of "pregnancy" and had the social effect of treating nonpregnant women as potentially pregnant.

Folic acid was described by experts in this research as "the precursor to what we're doing today." One physician explained to me that folic acid is "the cornerstone of more concrete intervention" because "you can give a pill to women and see the effects." This is reminiscent of what Dubos ([1959] 1996) called a "magic bullet" approach—folic acid may be a productive preventive intervention, but is it enough to substantiate a whole new approach of preconception care? With the exception of the unique case of folic acid, almost all scientists and experts interviewed for this research conceded that evidence for preconception intervention is not strong. Preconception care was understood as "emergent science" and an evolving area that was still being fleshed out in terms of its potential impact.

The CDC Initiative

In spite of the slow attainment of clear evidence for preconception interventions, medical interest in preconception care grew steadily before the turn of the twenty-first century. As documented by Cefalo and Moos (1995), the Institute of Medicine's 1985 landmark study *Preventing Low Birthweight* was one of the first major medical publications to advocate changing the traditional point of obstetric care to the prepregnancy period. The report addressed risk factors at the prepregnancy stage and stated that "numerous opportunities exist before pregnancy to reduce the incidence of low birthweight" (IOM 1985: 15). The 1989 Department of Health and Human Services publication *Caring for Our Future: The Content of Pre-natal Care* adopted and expanded the concept of preconception care to include risk assessment, health promotion, and intervention follow-ups, explaining that "the preconception visit may be the single most important health care visit" in terms of pregnancy and health outcomes (US DHHS 1989: 26). Some medical and public health articles during 1980–2000 were concerned with specific preconception-related topics, including the control of diabetes, nutritional status, and screening for genetic traits (e.g., cystic fibrosis) in individual women prior to conception. Also during this time, major agencies and organizations such as the American College of Obstetricians and Gynecologists lent credibility to the idea of preconception care, and the *Journal of the American Medical Association* featured research by early proponents of preconception care (Jack and Culpepper 1990).

Despite the growing attention to preconception care, the concept was widely disseminated when the CDC adopted it as one of its priorities. An obstetrician and maternal and child health specialist at the CDC, Hani Atrash, identified preconception health promotion as a

[4]Compliance with this rule became mandatory in 1998, and fortification has had a positive impact on reducing birth defects at the population level (CDC 2004).

critical public health measure. In 2005 the CDC organized the Select Panel on Preconception Care in which top researchers were charged with developing a comprehensive strategy for the preconception care initiative.

The Discovery

Atrash had served since the 1980s in the CDC's Division of Reproductive Health (DRH), where he was a steward of the Safe Motherhood movement. Facilitated in part by the UN Decade for Women (1976–1985), this movement highlighted safe motherhood as a human right and promoted women's health before, during, and after pregnancy (Wilcox 2002; Abou-Zahr 2003). When Atrash moved from the DRH to the National Center on Birth Defects and Developmental Disabilities, he saw an opening for preconception care to bridge women's health and maternal health. He pulled together the CDC initiative without much initial funding and brought in Kay Johnson, a renowned strategic consultant in maternal and child health policy. They drew on the earlier work of clinical advocates who had established a literature for preconception care (e.g., Moos and Cefalo 1987; Moos 1989; Jack and Culpepper 1990).

The leadership of Atrash and Johnson can be seen as an example of moral entrepreneurship (Becker 1963). Atrash and colleagues purposefully assembled the initiative to include a group of scientists, medical experts, and public health specialists to form an elite collective to disseminate new claims about risks to pregnancy outcomes, risks that would be persuasive both scientifically and rhetorically (Aronson 1984; Best 1987). Those involved in the initiative then served as scientific and biomedical entrepreneurs (Rosenberg 1976; Armstrong and Abel 2000) for improving birth outcomes and health care access for women in the United States.

The work of the interdisciplinary expert panel on preconception care and the national summit on preconception care, both convened by the CDC in 2005, culminated in the widely disseminated work byJohnson et al. (2006). That document argued that progress on health measures in the United States, such as preterm birth and low birth weight, had "slowed, in part, because of inconsistent delivery and implementations of interventions before pregnancy" and that "for certain conditions, opportunities for preventive interventions occur only before conception" (2). The report paid attention to interventions at the individual level, but it also went into detail about how preconception care would benefit population health in general. For example, it called for greater health insurance expansion to low-income women so that pregnancy would not be the only time those women received comprehensive health coverage. The report argued that approximately 17 million women did not have health insurance and that those women were more likely to postpone necessary health care (19). Preconception care had been rebranded as the fix to multifactorial causes of adverse pregnancy and birth outcomes in the United States.

This new conceptual framework for improving health outcomes focused on providing interventions and screenings for all women of reproductive age to reduce risks to future pregnancies. Rather than an isolated visit to a physician, preconception care was envisioned as part of routine health care and preventive visits (Johnson et al. 2006). It was recommended that primary providers and obstetrician-gynecologists use an approach of "every woman, every time" in practice, whereby all women of reproductive age are asked about their reproductive plans at every health care visit (Atrash et al. 2008). This report and the CDC's initiative garnered widespread public attention, precipitating a significant spike in medical journal articles about preconception care. Stemming directly from the work accomplished in the CDC initiative meetings, three academic journals devoted issues to preconception care: *Maternal and Child Health Journal* (September 2006), *American Journal of Obstetrics and Gynecology* (December 2008), and *Women's Health Issues* (November–

December 2008). In essentially inventing preconception care as a major public health concern and priority for the CDC, Atrash and those involved in the initiative revived the older literature on preconception care, galvanized the growing literature on preconception health measures, and set in motion a whole new wave of research and collaboration on the topic. Preconception care was depicted as the new and best way to refocus health care on the moral and comprehensive treatment of women and babies.

In sum, by the time the CDC's initiative was launched, there was a documented crisis in prenatal care and an understanding of its limited effect on health statistics. There had been some scientific ideas about intervention around conception, and the initiative had the stewardship of a few entrepreneurial leaders. How did those involved in the initiative think about crafting this new idea? How did they envision the need for preconception care? How did they discuss women's health and maternal health in a prepregnancy health strategy? Moving forward on the idea of preconception care relied on two beliefs and strategies: first, amid the seeming scientific failure of prenatal care and the temporal ambiguity of the extant preconception science, the experts took a leap of faith (Larsen 2012) about the scientific promise of preconception care; second, amid a potent understanding of the undervaluation of women in health care and social policy, the experts argued for women of childbearing age to be treated as potential mothers.

The Leap of Faith

It is one thing to understand that there is a crisis with prenatal care but entirely another to argue for extending that care backward. Preconception care found support from obstetricians who believed that this approach intuitively made sense, that "early prenatal care is not enough, and in many cases it is too late" (Atrash 2009). Experts argued that during the first weeks of pregnancy, which includes integral fetal central nervous system and cardiac development, women often are unaware of their pregnancies and unintentionally forgo best health practices (Lu et al. 2006; Atrash 2009). The solidified belief that prenatal care was ineffective at the population level and that the early pregnancy period was vulnerable led experts to believe that the boundary of care needed to be pushed farther back. In describing why prenatal care is not sufficient, an obstetrician replied:

> Why isn't prenatal care enough? Simply because we know that most of those conditions that cause adverse pregnancy outcomes—whether it's obesity or smoking or HIV or whatever—you don't manage them and cure them and successfully change them overnight. It takes time. It takes months or years sometimes. And the other thing is if the woman is using drugs or is not taking folic acid by the time she knows she's pregnant, it's too late.

By the time the CDC launched its initiative, it was clear to respondents in my study that clinicians were "starting off well behind" with prenatal care. One public health scientist argued: "Waiting for prenatal care was already after the horse left the barn, and … we need to be focusing on … women's health, more on preconception, and interconceptional health, in order to make a difference in pregnancy outcomes."

The theme that "the horse has already left the barn" resonated in many of the responses I received during this research. One preconception care specialist explained that by the time a woman presents at a prenatal visit, most of the poor outcomes "are already in place," forcing clinicians and patients to "end up playing catch-up." This expert asked, "What do [clinicians] do at the first prenatal visit? We take a history, we get lab tests, and we provide education… . And where is it written that that has to occur only after conception?" While searching for ideas beyond prenatal care, experts remained aware that there was a dearth of scientific evidence for preconception interventions, prompting the leap of faith:

> A lot of [preconception care] is just based on common sense. [Data] show that controlling your blood sugar prevents birth defects if you're a diabetic. [Data] show the benefits of folic acid to prevent certain kinds of structural birth defects. But, there are almost no prospective randomized trials to look at other aspects of health care; [for example,] does losing weight make a difference? I mean, it would make sense that it would, but there really aren't scientific studies out there showing it. And … in terms of behavioral changes, there are almost no data on [that]. So a lot of what we advise is just based on common sense.

Like this speaker, many scientists and clinicians expressed their conviction that preconception care was worth pursuing by using terminology such as "logical," "obviously," "no brainer," "makes sense," and "common sense" to explain their belief in it despite the lack of much evidence. One epidemiologist further intimated that we should not focus too much on the "science" of preconception care because all science "is biased, based on the participation of volunteers… . there's flaws all over science; there's flaws all over the place." Many others protested that they have never had good evidence for prenatal care, so why would we need good science for preconception care? As another scientist reminded me, "Science does not drive policy."

Maternal Positioning

Part of the leap of faith included not only the belief that extending prenatal care made logical sense but also that this new framework could counter the social problem of a widespread undervaluation of women during their childbearing years. The significant political underpinnings of preconception care came to the fore in this explanation, because the promotion involved a strategy of defining expectant motherhood as a state inhabited by all reproductive-age women. A public health specialist explained this policy reality: "[Legislators] have very little support for uninsured women until they get pregnant because then it's about the baby. It's not about the mother… . But, you know, there's just no general primary care money for women … because [women] don't have value unless they got a belly."

In expressly seeking to redefine what maternity care means, those involved in the preconception care initiative defined all reproductive-age women as potential mothers, thus conflating women's reproductive health care with maternity care and, by extension, I argue, womanhood with motherhood (essentially creating "a belly"). Here is an obstetrician explaining the problem with Medicaid and health care coverage for low-income women: "If you walked into my clinic, told me you're pregnant … your services are covered. You can have coverage instantaneously. Why? Because you're pregnant. You know, you're special." The obstetrician expanded on the problem by giving a hypothetical situation:

> You come into my emergency room, you're twenty-four, you have such heavy periods that you're anemic and you need a blood transfusion and I have to give you four units of blood, and I'm going to send you out the door and you: A) can't pay for the hospital bill that you incurred with those transfusions, and B) you can't pay for the medications that I want to give you so that you don't keep having those heavy menstrual periods, and C) you don't have any insurance of any sort, so you're not going to follow up with anybody later on. And guess what? I'm going to see you again in about ten months with the same problem. But the state doesn't value that woman. Why? She's not pregnant.

This quote nicely illustrates the problems that many clinicians see with health care coverage in the United States. Across the board, women get more health care attention and more coverage when they are pregnant than when they are not, indicating the social value we place on women as expectant mothers. Thus those involved in the preconception care

initiative decided to play on the social and cultural valuation of women as mothers rather than of women as women. One pediatrician revealed the tension of thinking of women both outside and within the box of maternity:

> We have been so reluctant in the United States to really elevate the importance of the health of women. And every time we even speak to do it, it's always in the context of pregnancy. No one [seems] to really care about a woman's health unless she is pregnant. I mean if you examine, historically, the policies, once you become pregnant you get a lot of help but prior to that you're sort of out there on your own. And that's a very poor way of looking at it, because I believe that a girl is a mother from the time of her own conception.

While this clinician worried that many women do not get comprehensive health coverage unless they are pregnant, the answer was to envision a policy that would understand that "a girl is a mother from the time of her own conception." This approach assumes that all women will get pregnant and become mothers, and it diverts a discussion of comprehensive women's health to the realm of maternity. By evoking an ethic of anticipatory motherhood, the experts called on women of childbearing age to envision themselves as potential mothers. Indeed, women as a group are solicited by this framework to maintain a healthy lifestyle before conceiving; as Wolf (2011: 76) put it, "Women are repeatedly advised to act with an eye on their maternal future." The refrain of maternity as normative served as a potent argument for the strategy of anticipatory motherhood. Another quotation explained the social imperative of this reality:

> Well, the problem with just saying "women's health" is then you're losing the focus on the social interests in pregnancy, whereas preconception health helps say that society does have an interest in having healthy children because that's the future of the country. That sort of [message] can be a motivating factor of addressing women's health. That's why we need to invest in women's health—so we'll have healthy children. But some people [argue that] that's just treating women as if … all they're only worth is producing children.

The cultural trope that "healthy women make a healthy country" emerges in this statement. This scientist believed that we need to invest in women's health *in order to* invest in children. The argument forestalls a discussion about social investment in women's health for women or investment in children for children. Women and children are deemed inseparable in the preconception care framework, thereby conflating maternal health and women's health (as well as motherhood and womanhood). This respondent noted, as did many, awareness of the feminist argument that preconception care could potentially revert back to thinking of women as baby-making machines, but they nevertheless overwhelmingly and ultimately argued for a "pragmatic" approach to women's health that sees all women as potential mothers.

One epidemiologist expressed allegiance to the need for preconception care but simultaneously found the framework troubling: "I do agree that you have to look at the health of the mother before she gets pregnant. I just felt the term was kind of degrading to women almost because it just kind of assumed that … your life should be spent thinking about getting pregnant." Many of the experts were attuned to women's health and feminist concerns vis-à-vis this new definition of pregnancy risk and were surprised by the backlash in the popular media. Despite this, they rehashed the political problems associated with promoting women's health care. One public health clinician explained that the preconception care agenda was formulated to highlight babies because "legislators could easily turn up their nose at women… . we know if [support is] linked to the baby we have a better chance of [garnering support] than talking about women's health or—shudder!—

reproductive health." This quote reveals the political silencing that takes place around reproductive health. As a result, maternalism was viewed as an expedient policy strategy.

Discussion

Over the past several decades, as this article documents, we have witnessed the emergence of a new framework of prepregnancy care. While there were mentions of "preconception care" in the medical literature before the 1980s, it was the prenatal care crisis and advances in scientific knowledge regarding the period around conception that propelled a new line of thinking. Clinicians advocated for a new perspective as early as the 1980s. But not until the 2000s, with the involvement of Hani Atrash and the CDC, did the concept take off in a major way. The new framework's purpose was to challenge the persistent adverse birth outcomes plaguing maternal and child health in the United States.

I argue, though, that it was not simply that clinical and population health problems shaped the invention of preconception care but rather that social problems around health care provision were also at issue in the initiative's development and deployment. Namely, this new framework challenged the long-held categorical burden of pregnancy as the entry point into comprehensive health care for US women. The leap of faith that was required to believe in the promise of preconception care was accompanied by maternalism as a political strategy. I contend that this set up a discourse of anticipatory motherhood whereby the new categorical imperative for maternity care is not "pregnant" but "potentially pregnant." The ethic of anticipatory motherhood exhorts women to minimize health risks in anticipation of inevitable pregnancies. This is a framework that envisions *all* women of childbearing age as maternal bodies. We see this operationalized, for example, in the folic acid ruling, where one administration official argued that it changes how we see women—as pregnant until proven otherwise (Junod 2003).

The reality is that the United States has a long social policy undercurrent of focusing on women as potential mothers. Maternalism, or defining women's needs or social and political status in terms of their maternal status, has been used as a political strategy throughout US history. In the late nineteenth and early twentieth centuries, social and political arguments linked maternity and women's needs in order to expand state welfare services and health care access to women and children (Skocpol 1992; Gordon 1994). During the first two decades of the twentieth century, numerous labor protections and social regulations were legislated by states and by Congress to "help adult American women as mothers or *as potential mothers*" (Skocpol 1992: 2; emphasis added). For instance, the famous 1908 Brandeis Brief in *Muller v. Oregon* restricted the number of hours women could work partly on the basis of their social status as future mothers. But probably the best example in the context of this article is the Sheppard-Towner Maternity and Infancy Protection Act of 1921, which established the first federal welfare program in the United States. Provision of prenatal care was a major component of assistance during this time, and since the time of Sheppard-Towner maternal health needs have been seen through a lens of prenatal care, thus medicalizing maternalism (Barker 1998, 2003).

To be sure, the status of "expectant" and "potential" motherhood has long been part of policy and medical strategies related to women's health care provision. In an analysis of women's health care in the United States, Weisman (1998: 195) writes that "a distinctive feature of many of the enacted gender-specific public policies related to women's health is a focus on maternity, that is, on the health of women as mothers or potential mothers." In efforts to improve maternal and child health over the past century, women have often been deemed the party responsible for fostering improvements in birth outcomes. Women as mothers are usually depicted as keepers of the nation's health (Yuval-Davis 1996) and

responsible for social order in addition to birth outcomes (Armstrong 2003). Maternalist health strategies, in how they couch women in terms of their maternity function, may have positive or adverse consequences on women's social status. Maternalist policies and politics also highlight important contradictions in debates over women's agency in society (Brush 1996). The maternalism inherent in the preconception care initiative is especially interesting given the advances of feminism and the women's health movement in the 1960s and 1970s, when women fought against the trope of "women as baby vessels." While the women's health movement provided new and positive perspectives on issues of reproduction, such as pregnancy and birthing, feminists still recognized the problem with promoting any sort of "mandatory motherhood" (Umansky 1996).

This article shows that maternalism remains a guiding policy theory and cultural logic in health strategies, because women's health care needs were positioned in the preconception care initiative as maternal health care needs for the purpose of political traction and health care coverage arguments. Before making concluding remarks about the implications of conflating womanhood with motherhood to forge a contemporary maternalist population health strategy, I want to first theorize about some broader trends to which the emergence of preconception care speaks.

Individualization of Public Health

The preconception care initiative aimed to combat population health and social problems, but its rhetoric remained focused on individual behavior change. By concentrating on preconception health or care, this new paradigm obviates bigger discussions about factors that influence general reproductive health or which social factors, such as poverty or education, might put women at risk of adverse birth outcomes (see Link and Phelan 1995). We can view this approach in light of the transition to lifestyle prevention strategies in public health that have taken off since the Lalonde report (1974), a Canadian document that called for a broader vision of health policy to account for individual behaviors and choices (Larsen 2012). Preconception care corresponds with the contemporary public health trend toward the individualization of health problems and risk that has been on the rise since the 1980s (Petersen and Lupton 1996; Susser and Susser 1996a, 1996b). The movement has been toward not only individualizing health problems but also individualizing and medicalizing social problems (Conrad and Potter 2000; Clarke et al. 2003; Conrad 2005, 2007)—in this case, adverse birth outcomes, health disparities, and women's health care access. This trend is perhaps not limited to the individualization of public health writ large but also extends to the ascendant social policy focus (especially with welfare reform in the 1990s) on personal responsibility for health and social outcomes.

Failure of National Insurance

While the preconception care experts expressly argued for expanded care coverage for women (and, in limited cases, men), the framework can be seen as a broader trend in public health policy that served as a workaround strategy to expand health care access and combat insufficient coverage and access. The health literature on preconception care includes a number of articles that engage policy considerations and argue for comprehensive Medicaid expansion—for example, to the prepregnancy period—because of the putative potential health benefits it could bring to all women and future babies (Salganicoff and An 2008). Given the lack of political priority for and/or success of comprehensive health coverage (until the current administration) and the fact that low-income women in particular usually receive comprehensive health care coverage only when they are pregnant, it made sense for maternal and child health experts to advocate funding for the preconception period.

Demographic Changes

The emergence of preconception care also dovetails with broader demographic trends in the United States. One of the strategies used by experts involved in preconception care argues that maternity is a normal part of a woman's life course trajectory, thus easing the discussion of women's health needs as maternal health needs. A consistent 80–90 percent of women in the twentieth century had at least one birth (Kirmeyer and Hamilton 2011). However, motherhood is no longer seen as the sole purpose of a woman's life, and women's reproductive health is generally viewed in a much more expansive frame than simply maternity care. Age at first birth has increased steadily over the past several decades, and women are having fewer children than in the past (Mathews and Hamilton 2002). This means that while many women do indeed give birth at some point in their lives, the length of time they spend in a so-called prepregnant phase is much greater than ever before.

Moreover, we tend to view contemporary fertility as occurring within a "calculus of conscious choice" (Coale 1973)—that is, with the availability of contraception and family planning techniques, women and couples usually have the option to plan and space births according to their individual desires. Yet half of US pregnancies are unintended (Finer and Henshaw 2006), and the preconception care literature and rhetoric expressly worry about the fact that women often forgo behavior changes because they do not know they are pregnant. Preconception health experts have argued overtly for preconception health programs to combat unintended pregnancies as part of the overall platform (Moos et al. 1996).

Reproductive Health Politics

This discussion cannot be divorced from the reality of reproductive health politics, and especially abortion politics, which grew with vehemence starting in the 1980s. Women's health and reproductive health have become profoundly politicized in the past few decades. The preconception care framework simply argues that women need to be healthy when they get pregnant. This framework, I argue, strategically avoids a discussion about abortion and women's reproductive choices once they get pregnant. The political desire to circumvent abortion fits well with a strategy of maternalism and viewing women in terms of potential maternal status; it also fits well with a political environment that is hostile to women's choices if they do not fit a maternalist or pronatalist agenda. By not mentioning abortion in their publications or the in-depth interviews for this study, the experts were, in my assessment, recognizing the political land-mine that is abortion. In theory, if preconception care succeeded at the population level, fewer abortions would be necessary. If women planned their pregnancies and engaged in prepregnancy care, the framework presumes, pregnancies would be desired and healthy. This of course ignores the many complicated and nuanced reasons that women need abortion and reproductive care.

Women's Health and Maternal Health Politics

Another trend that preconception care speaks to is the stubborn distinction in the United States between health funding for maternal health and women's reproductive health. Maternal and child health and women's health have long been treated as distinct arenas in reproductive care and policy. Conceptually and practically, the former focuses on pregnancy and infant outcomes, while the latter is associated with family planning and nonpregnancy-related women's health topics (e.g., breast cancer). Some respondents in this study referred to the maternal and child health camp as the one "for babies" and the women's health camp as the one "for women."[5] This is an oversimplification, of course, as there is overlap between the two. Because the development of preconception care spoke to both women's health and infant health outcomes, it had the potential to cross established boundaries. In the early CDC select panel meetings, a significant point of contention was how to label

preconception care—as a pregnancy-related agenda or as comprehensive women's health (Posner et al. 2006).

Still, while respondents pointed to contention between these groups, they also revealed that preconception care was intended to bring the groups together for the purpose of expanding health care access for all women. Respondents varied considerably with regard to their maternal health/women's health professional backgrounds and also on whether they personally adhered to a maternalism ideology. One expert said, "You can hear that the two worlds are just suspicious of each other. Preconception, however, is a topic that both of them could get behind." The preconception care initiative, then, harbored acute boundary tensions but also served as a facilitating boundary object (Star and Griesemer 1989) to promote common goals between disagreeing factions. As one renowned maternal and child health expert told me, it remains "an uneasy alliance" for women's health. The CDC's initiative, while it initially faced backlash from feminists, eventually enveloped experts who specialize in the arena of women's health. The second (2007) and third (2011) national summits on preconception health, which convened top experts in the field, deliberately included more women's health program leaders, seemingly organizing a "united front" for women's reproductive health. In today's political climate, in which even contraception has become a controversial topic, this unity can perhaps be seen as a policy necessity.

Conclusion

The impetus for a new definition of reproductive risk and pregnancy was forged with the emergence of preconception care, the idea that clinical care prior to pregnancy might result in improved pregnancy outcomes. The preconception care agenda began its ascendance in the 1980s and built momentum as rates of adverse birth outcomes in the United States, especially low birth weight and preterm birth, remained doggedly high despite increasing rates of pregnant women receiving prenatal care. The US prenatal care paradigm entrenched a promise in taking care of women when they are pregnant, which also meant that women (and men) could be effectively ignored outside pregnancy in terms of their contribution to reproductive outcomes. This analysis finds that preconception care experts characterized women's health as prepregnancy health in part for political expediency, understanding that women are often deemed worthy of care and attention only when they are seen as reproductive vessels. In this process, the experts positioned *all* women of childbearing age as potential mothers. Thus those who forged the preconception care paradigm attempted a contemporary maternalist welfare success. This maternalism is of course not new in a historical sense, but the clinical focus on the health status of all reproductive-age women to ensure the health of any future fetus is a novel phenomenon. Health experts, as my research shows, recognize the problem of treating women in a frame dependent on motherhood. As reproductive health politics dictate, respondents argued, it is most efficient to use a strategy of maternalism in promoting women's health status.

The clinical and social obsession with conception and women's behavior status matters for how we view women in society (see Daniels 1993). Women have long fought for the freedom that comes with "voluntary motherhood" (Gordon 1973), and we need to think about whether women can ever be free from the expectation of motherhood when motherhood is the default social and clinical strategy in women's health care. Indeed, this paradigm matters for thinking through how we approach women's health and reproductive

[5]Maternal and child health funding is usually supplied through state block grant funds for maternal and child health programs established by Title V of the 1935 Social Security Act. Women's health funding, with a focus on reproductive health planning, is generally provided through Title X of the 1970 Public Health Service Act. This includes funding for family planning clinics such as Planned Parenthood.

health from a programmatic and health promotion standpoint. It is no longer pregnant women but *all* women, from menarche to menopause, whose health is positioned in relationship to what I call "phantom fetuses." The ethic of anticipatory motherhood, or the idea that all women of childbearing age are potential mothers and should act accordingly, hinges on the putative inevitability of pregnancy. By promoting anticipatory motherhood, this public health policy promoted womanhood *as* motherhood, potentially setting up womanhood and motherhood as "a battlefield" (Oakley 1984: 254).

It is an open empirical question whether women have internalized or resisted this new messaging. Some clubs and bars now display signage that warns women not to drink if they are *considering* pregnancy (presciently previewed in Armstrong 2003). Tabloids now report that celebrities are *potentially* planning a pregnancy if they are seen refusing alcohol. This trend comes out of the preconception care framework, and it shifts the conversation from who is pregnant to who *could be* pregnant and opens up the possibility of positioning women as bad mothers before they ever conceive. As a maternalist health and social agenda, preconception care has infiltrated not only popular discourse but also health policy. Under the PPACA, a co-payment is no longer required for a preconception health visit. Moreover, preconception health is a major category in the blueprint for Healthy People 2020, a document that outlines ten-year objectives for improving health in the United States. With this policy visibility in mind, we need to interrogate how health agendas intersect with social agendas regarding women's status in society, paying particular attention to agendas that harbor the potential to influence the lives of women who want to be mothers and women who do not.

Is it advantageous to view all women as potential mothers in order to expand health care access and improve population health? Is it necessarily wrong to treat and define all women as prepregnant when most women do become mothers at some point in their lives? The depiction of women as prepregnant might seem at least unduly one-sided when an ethic of anticipatory motherhood is at work in reproductive policy strategies without a concurrent ethic of anticipatory fatherhood, especially given the fact that most men also become fathers.[6] What Weisman (1998: 198) calls "gender-specific policymaking" has the advantage of "offer[ing] special benefits to women, but it may also perpetuate gender-based disadvantages." Future research that assesses the form, function, and consequence of contemporary reproductive health policy strategies should be attuned to this sentiment.

Acknowledgments

I wish to thank Elizabeth Mitchell Armstrong, Susan Markens, Peter Conrad, Rene Almeling, Elizabeth Chiarello, Joanna Kempner, John T. Waggoner, and two anonymous reviewers for helpful comments on previous versions of this manuscript. I am grateful to Lorraine V. Klerman, Kay Johnson, and Hani Atrash for facilitating this project and to the health and policy experts who took time to participate in this research. This work has received funding from the National Science Foundation and the National Institutes of Health.

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[6] I thank Rene Almeling for this point.

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