Policies that Impact Workforce

Change in Oregon Maternity Care Workforce after Malpractice Premium Subsidy Implementation

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Objectives. (1) To determine the proportion of maternity care providers who continue to deliver babies in Oregon; (2) to determine the important factors relating to the decision to discontinue maternity care services; and (3) to examine how the rural liability subsidy is affecting rural maternity care providers' ability to provide maternity care services.

Study Design. We surveyed all obstetrical care providers in Oregon in 2002 and 2006. Survey data, supplemented with state administrative data, were analyzed for changes in provision of maternity care, reasons for stopping maternity care, and effect of the malpractice premium subsidy on practice.

Principal Findings. Only 36.6% of responding clinicians qualified to deliver babies were actually providing maternity care in Oregon in 2006, significantly lower than the proportion (47.8%) found in 2002. Cost of malpractice premiums remains the most frequently cited reason for stopping maternity care, followed by lifestyle issues. Receipt of the malpractice subsidy was not associated with continuing any maternity services.

Conclusions. Oregon continues to lose maternity care providers. A state program subsidizing the liability premiums of rural maternity care providers does not appear effective at keeping rural providers delivering babies. Other policies to encourage continuation of maternity care need to be considered.

Key Words. Obstetrics and gynecology, malpractice, health policy, physicians' practice patterns, Oregon

BACKGROUND

Many studies have shown that timely and appropriate access to prenatal and delivery services improves maternal and neonatal outcomes (Helton 1997). An important component in access to such maternity care services is the availability of providers willing to perform deliveries. Studies have found that

when the number of maternity care providers falls in a community, the rate of delayed and inadequate prenatal care and delivery complications and costs rise (Piper, Mitchel, and Ray 1996; Nesbitt et al. 1997; Dubay, Kaester, and Waidmann 2001). Rural areas that lack local obstetrical services are associated with less adequate prenatal care, higher rates of preterm delivery, infant mortality, and complications during delivery (Nesbitt et al. 1990; Peck and Alexander 2003).

Access to maternity care is threatened in many states due to falling numbers of maternity care providers (Herbst 1990; Xu et al. 2008). Studies have found that the number of providers has fallen dramatically in Pennsylvania, Oregon, Mississippi, Washington, Florida, Nevada, and many other states (Rosenblatt et al. 1991; Nesbitt et al. 1997; U.S. Department of Health and Human Services 2003; U.S. General Accounting Office 2003; Smits et al. 2004; Menachemi et al. 2005; Hale 2006). States most likely to have problems with declining numbers of maternity care providers are included in the American Medical Association's "Malpractice Crisis States" list. Not only is the cost of premiums higher in such states, but the general malpractice environment in such states probably contributes to provider reluctance to provide high-risk services such as maternity care.

We have previously reported the results of a 2002 study that found a high rate of loss of maternity care providers in Oregon (Smits et al. 2004). In that study, we found that over half of Oregon maternity care providers had stopped or were planning to stop delivering babies. Of particular concern for Oregon was the finding that rural physicians were stopping maternity care at a significantly higher rate than urban physicians (Smits et al. 2004). Oregon is a rural state, with the majority of its land area designated rural by federal and state standards. Rural communities in Oregon often have large distances separating them. When a rural-based physician or midwife stops providing maternity care services, women living in that area may have to drive more than 50 miles to the next community with a maternity care provider to obtain these services, often over difficult roads and challenging terrain. According to the Oregon Office of Rural Health, a large proportion (38 percent) of Oregonians live in rural areas and could be affected by changes in rural health care delivery.

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Our 2002 study found that physicians were stopping maternity care for several reasons, which echoed the reasons found in other states. These include lifestyle issues, such as lack of desire to be on call, an aging workforce, and issues with deliveries interfering with office practice (Smits et al. 2004). The most important reason for stopping maternity care found in our previous study, as well as other studies around the nation, was the rising cost of malpractice premiums (Herbst 1990; Rosenblatt et al. 1991; U.S. Department of Health and Human Services 2003; U.S. General Accounting Office 2003; Menachemi et al. 2005; Hale 2006; Xu et al. 2008). Malpractice premiums were rising sharply in Oregon during this time. Between 1999 and 2003, premiums for obstetrician/gynecologists (OB/Gyns) in Oregon increased 280 percent while premiums for family physicians (FPs) who delivered babies increased 375 percent (Northwest Physicians Mutual Insurance Company 2003). For the mostly small business owner physicians in Oregon, this increase was not fiscally sustainable and supported physicians' claims that malpractice premium increases lay behind their decisions to stop maternity care.

Concern over the implications of falling numbers of maternity care providers, particularly in rural Oregon, led the Oregon Legislature to develop a public subsidy for qualifying rural physician malpractice premiums. The amount of subsidy varies by specialty and by whether the physician delivers babies. The subsidy program pays 80 percent of the professional liability premium for an OB/Gyn and 60 percent of the premium for an FP or general practitioner (GP) if they deliver babies, and 40 percent of the premium of all rural physicians regardless of specialty if they do not deliver babies. To qualify for this subsidy, a physician must practice more than 60 percent of the time in a community designated as rural by the Oregon Office of Rural Health. Midwives and employed physicians (those working for government agencies, hospitals, health systems, etc.) did not qualify for this subsidy. The subsidy legislation was passed in 2003 and fully implemented in 2004; the subsidy was set to sunset at the end of 2007.

The impact of the malpractice subsidy on the Oregon maternity care workforce is important to study for several reasons. First, continuing increases in liability premiums are thought to be leading to further declines in the number of maternity care providers since the 2002 survey; however, this assumption needs to be quantitatively evaluated. Second, these subsidies involve large sums of public money. For the first 2 years of implementation (2004–2005), the average subsidy amount for an OB/Gyn was US\$47,865 while the average amount for an FP who provided maternity care was US\$17,379 (State Accident Insurance Fund, personal communication, March

2007). Before this subsidy is re-authorized, the impact of this public expenditure needs to be re-evaluated. Lastly, while professional liability subsidies have been considered or implemented in several states, little analysis of their effectiveness has been conducted (Anonymous 2003; Liss and Sage 2005; Salganik 2005; Sloan 2005). Given the lack of rigorous study of the impact of public malpractice subsidies, both the general public and state and national policy makers need well-conducted studies to inform them of how effective these policies are in supporting maternity care services, particularly in rural areas.

To study the effects of the malpractice subsidy policy on the maternity care workforce, we conducted a longitudinal cohort study of Oregon obstetrician/gynecologists, FPs, GPs, and certified nurse midwives (CNMs) to determine (1) the proportion of those trained to provide maternity care who continue to provide such services, (2) the important factors relating to the decision to discontinue providing maternity care services, and (3) how the rural liability subsidy is affecting maternity care providers' ability to provide maternity care services in rural areas.

METHODS

The Institutional Review Board (IRB) of the Oregon Health & Science University approved the procedures used in this research.

Subjects

All physicians and midwives trained to deliver babies, defined as OB/Gyns, FPs, GPs, and CNMs, holding an active Oregon medical or nursing license with mailing addresses within Oregon were eligible for the study. Names and mailing addresses were obtained from the Oregon Board of Medical Examiners (OBME) and the Oregon State Board of Nursing (OSBN). Respondents were excluded from analysis if they returned a survey with insufficient data, reported a practice location outside of Oregon, were still in training, were not clinically active, or reported a specialty other than the four target specialties or an obstetrical subspecialty other than maternal-fetal medicine.

Physicians and midwives who left the state between 2002 and 2006 according to OBME/OSBN records were not resurveyed. Physicians and midwives who entered the state after 2002 were included in the 2006 survey. According to OBME and OSBM records, the in and out migration of physicians and midwives in Oregon was minimal during this period.

Survey Procedures

Eligible study participants were first surveyed in October 2002, with a repeat mailing to nonresponders in November 2002. The follow-up survey was sent to eligible study participants in May 2006, with repeat mailing to nonresponders in June 2006.

Survey Instrument

In 2002, a 30-question survey was sent to the physician group and a modification of this survey was sent to the midwife group. A similar survey was sent to both groups in 2006. Surveys contained information on demographics, maternity care practice information, and actual or planned cessation of maternity care and reasons for their decision to stop maternity care if applicable. The 2006 survey added questions about receipt of the professional liability subsidy, amount and type of professional liability premium, and opinions regarding the professional liability subsidy program. Midwives were asked about their supervising physicians' receipt of the subsidy and their opinions of the program.

Other Data Sources

The survey data from the 2006 survey were combined with information from the OBME physician database on physician sex, age, length of time with an active Oregon license, and type of license. Survey data from the midwife survey were linked to the OSBN midwife database for verification of demographic information. One hundred percent of survey data were linkable to these administrative data sets. The combined survey databases were linked to the database of the state administrator of the malpractice subsidy (SAIF). The SAIF database contained information on subsidy amount and geographic location of practice. Linkage was done via medical/nursing license number, which were included in the survey mailing list. One hundred percent of survey data was linkable to these administrative data sets.

Data from the 2002 survey could not be linked to this combined database. Requirements from the OHSU IRB in 2002 did not allow the investigators to maintain identifying information for respondents that would have allowed such linkage.

Data Analysis

Data from returned surveys were entered into an *ACCESS* database. The combined database was analyzed with the *Statistical Program for Social Science*

(SPSS 13.0). Differences between groups were analyzed using χ^2 analysis. The primary outcome measures were inclusion of maternity care in current practice and intention to stop maternity care. Descriptive analyses were conducted to identify statistically significant predictors of current maternity care practice, reasons to quit, and plans to quit. The relationship between subsidy receipt and maternity care practice was also analyzed with descriptive statistics. *p* values of .05 and lower were considered statistically significant.

Variable Definitions

Geographic location of practice was defined as urban or rural based on the Oregon Office of Rural Health definition of rural as "a geographic area 10 or more miles from the centroid of a population center of 30,000 or more." This definition was also used in the liability subsidy legislation. Status as currently or previously delivering babies and specialty were self-designated.

RESULTS

Responses

2002. We mailed 2,158 surveys in 2002. Of these, 29 were undeliverable and 1,232 were returned for an adjusted response rate of 57.9 percent. A total of 163 respondents (13.2 percent) were excluded from analysis: 37 (22.7 percent) provided insufficient data, 43 (23.4 percent) had practice locations outside of Oregon, 17 (10.4 percent) were still in training, 63 (38.7 percent) were not clinically active, and 3 (1.8 percent) due to specialty type. After exclusions, 1,069 surveys were analyzed. OB/Gyns and midwives were more likely to respond than FPs and GPs (62.9 and 63.5 percent versus 56.8 and 39.2 percent, respectively). Demographic data on respondents are shown in Table 1.

2006. We mailed 2,188 surveys in 2006; 1,211 were returned for a response rate of 55.3 percent. There were no differences between responders and nonresponders in age or years in practice. Responders were more likely to be board certified (57.0 versus 47.5 percent, $p = .002$), female (57.9 versus 53.3 percent, $p = .031$), practice in a rural area (60.9 versus 52.5 percent, $p < .001$), and receive the subsidy (68.4 versus 52.6 percent, $p < .001$) than nonrespondents. A total of 105 (8.7 percent) surveys were excluded from analysis. Of these, 22 had insufficient data, 16 were still in training, 53 were not clinically active, 13 were in specialties of obstetrics/gynecology other

than maternal–fetal medicine, and one was a CNM who reported working as a labor and delivery nurse. After exclusions, 1,106 surveys were available for analysis. Demographic data on respondents are shown in Table 1.

Respondents in 2006 were significantly more likely to be female and work slightly shorter hours than respondents in 2002. The average of respondents had significantly increased, which was expected given the passage of time between the two surveys.

Current State of Maternity Care in Oregon

A summary of the number of respondents currently or previously including deliveries in their practice in 2002 and 2006 is shown in Table 2. Between 2002 and 2006, significant declines in proportion of providers performing various maternity care services were seen for all types of services (see Table 3).

In 2002, 47.7 percent of Oregon trained maternity care providers delivered babies in their practice. In 2006, 36.6 percent of trained maternity care providers reported providing maternity care, a 23.3 percent drop over 4 years. The proportion of clinicians trained as maternity care providers actually performing deliveries dropped in both rural and urban areas and in all specialties (see Table 4).

Table 1: Demographics of Included Respondents in 2002 and 2006*

	No. (%)		<i>p Value</i>
	2002	2006	
Total	1,069	1,106	
Specialty			.087
Obstetrician/gynecologist	261 (24.4%)	228 (20.6%)	
Family physician	650 (60.8%)	727 (65.7%)	
General practitioner	52 (4.9%)	44 (4.0%)	
Certified nurse midwife	106 (9.9%)	107 (9.7%)	
Female	435 (40.7%)	487 (44.0%)	.013*
Rural practice	421 (39.4%)	426 (38.5%)	.666
Solo practice	188 (17.6%)	183 (16.5%)	.519
Average patient-care hours per week	37.7	35.6	.035*
Average on-call hours per week	39.5	39.0	.609
Average age (years)	46.6	48.3	.001*

*Statistically significant.

Table 2: Status of Respondents' Delivery Practice in 2002 and 2006

Status of Pregnancy Care Practice	No. (%)		p Value
	2002	2006	
Total sample	1,069	1,106	
Undetermined pregnancy care status	15 (1.4%)	14 (1.3%)	
Never delivered babies	176 (16.5%)	244 (2.1%)	
Previously delivered babies	367 (34.3%)	443 (40.1%)	
Stopped < 1 year ago	42 (11.4%)	8 (1.8%)	
Stopped 1–2 years ago	31 (8.4%)	47 (10.6%)	
Stopped > 2 years ago	292 (79.6%)	369 (83.3%)	
Unknown stop date	2 (0.5%)	19 (4.3%)	
Currently delivering babies	511 (47.8%)	405 (36.6%)	> .001
Plan to stop in 1 year	56 (11.0%)	24 (5.9%)	
Plan to stop in 1–5 years	40 (11.0%)	63 (15.6%)	
Plan to stop in > 5 years	61 (11.9%)	49 (12.1%)	
No plans to stop	354 (69.3%)	260 (64.2%)	
Unknown plans to stop	0 (0%)	9 (2.2%)	

Important Factors for Stopping Maternity Care

2002. Among the 511 providers who performed deliveries, 157 (30.7 percent) indicated plans to stop delivering babies in the next 1–5 years (see Table 2). χ^2 analysis of providers planning to quit performing deliveries within the next 1–5 years compared with providers with no plans to quit indicated that providers planning to quit were significantly more likely to be male ($p = .001$), own their own practice ($p = .001$), pay their own liability insurance ($p = .001$), work longer hours ($p = .001$), and be in the eldest age group ($p < .001$) compared with providers with no plans to quit. Specialty and

Table 3: Maternity Care Services Provided by Respondents in 2002 and 2006

	No. (%)		p Value
	2002 N = 1,069	2006 N = 1,106	
Prenatal care	585 (54.7%)	439 (40.5%)	< .001*
Spontaneous vaginal delivery	553 (51.7%)	388 (36.8%)	< .001*
Instrumented delivery	417 (39.0%)	307 (28.3%)	< .001*
Trial of labor after cesarean	409 (38.3%)	193 (17.8%)	< .001*
Cesarean section as primary surgeon	295 (28.0%)	197 (18.2%)	< .001*
Assist at cesarean delivery	479 (44.8%)	323 (29.8%)	< .001*

*Statistically significant.

Table 4: Change in Proportion of Maternity Care Providers Who Are Actually Performing Some Type of Maternity Care between 2002 and 2006 by Urban/Rural Practice Setting and Specialty Type

	2002 (%)	2006 (%)
Total maternity care providers	47.7	36.6
Practice location		
Urban	49.0	36.8
Rural	45.8	36.4
Specialty		
OB/Gyn	84.7	74.6
Family physician	31.5	21.9
General practice	9.6	0
CNM	75.5	71.0

CNM, certified nurse midwife; OB/Gyn, obstetrician/gynecologist.

rural practice location were not associated with planning to quit deliveries (U.S. General Accounting Office 2003). The major reasons cited for future plans to stop performing deliveries among current maternity care providers are shown in Table 5.

In 2002, 367 respondents (34.3 percent of total) indicated that they had stopped providing maternity care. These respondents were significantly more likely to be male ($p < .001$), unaffiliated with a residency program ($p < .001$), practice outside of the Portland metropolitan area ($p < .001$), and be in the

Table 5: Current Delivery Providers Planning to Stop Performing Deliveries in the Next Year to Five Years Citing a Reason as "Very Important" for Stopping Deliveries in 2002 versus 2006

	No. (%)	
	2002 N = 157	2006 N = 136
Liability insurance cost	93 (59.2)	75 (55.1)
Lifestyle issues	31 (19.7)	66 (48.5)
Professional change	31 (19.7)	29 (21.3)
Experience with lawsuits	20 (12.7)	21 (15.4)
Low reimbursement	28 (17.8)	16 (11.8)
Office practice conflicts	7 (4.5)	5 (3.4)
Low OB patient volume	20 (12.7)	6 (4.4)
Back-up issues	16 (10.2)	3 (2.2)
Concern with skill level	8 (5.1)	2 (1.5)
No interest in OB care	6 (3.8)	1 (0.7)

OB, obstetric.

Table 6: Former Delivery Providers Citing a Reason as “Very Important” for Quitting Deliveries in 2002 versus 2006

	No. (%)	
	2002 N = 367	2006 N = 429
Liability insurance cost	186 (50.7)	249 (58.0)
Lifestyle issues	154 (42.0)	164 (38.2)
Fear of lawsuits	151 (41.1)	116 (27.0)
Professional change	69 (18.8)	60 (14.0)
Office practice conflicts	64 (17.4)	44 (10.3)
Experience with lawsuits	33 (9.0)	43 (10.0)
Low OB patient volume	54 (14.7)	42 (9.8)
Concern with skill level	39 (10.6)	40 (9.3)
Low reimbursement	28 (7.8)	34 (7.9)
Back-up issues	57 (15.5)	29 (6.8)
No interest in OB care	20 (5.4)	16 (3.7)

OB, obstetric.

oldest age group ($p < .001$) compared with providers who continued to provide maternity care. The most common reasons cited by former delivery providers for stopping deliveries were cost of liability insurance and lifestyle issues (see Table 6).

2006. Among the 397 current delivery providers, 87 (21.5 percent) indicated plans to stop delivering babies in the next 1–5 years. χ^2 analysis of providers planning to quit performing deliveries within the next 1–5 years compared with providers with no plans to quit indicated that providers planning to quit were significantly more likely to be older (41.9 percent of those 45 and older versus 28.4 percent of 35–44-year-olds and 15.8 percent of under 35-year-olds, $p = .002$ for trend) and in solo practice (43.8 versus 27.8 percent, $p = .001$) compared with providers with no plans to quit. Specialty, practice location, gender, hours worked, and receipt of the liability premium subsidy had no association with plans to quit deliveries in the next year to 5 years. The major reasons cited for future plans to stop performing deliveries among current maternity care providers are shown in Table 5.

In 2006, 429 respondents (39.5 percent of total) were former delivery providers. These respondents were significantly more likely to be older (13.6 percent of <35-year-olds, 34.2 percent of 35–44-year-olds, and 61.4 percent of over 45-year-olds; $p < .001$ for trend), male (66.7 versus 34.8 percent,

$p < .001$), in solo practice (59.0 versus 44.8 percent, $p < .001$), and FPs or GPs (69.6 versus 23.8 percent of OB and 17.4 percent of CNM; $p < .001$) compared with providers who continued to provide maternity care. Number of patient care hours, rural practice location, and receipt of the malpractice subsidy were not associated with stopping maternity care. Of the providers who previously delivered babies but had quit, 12.8 percent quit in the last 2 years. As in 2002, the most common reasons cited by former delivery providers for stopping deliveries were cost of liability insurance and lifestyle issues (see Table 6). Additionally, in 2006, 90 (21.0 percent) of respondents indicated that they stopped deliveries due to their group stopping. This question was not asked in 2002.

Malpractice Subsidy Effect on Maternity Care Provision

The malpractice premium subsidy was put into effect in 2004, midway between the 2002 and the 2006 survey. Among the 405 physicians who reported currently providing maternity care in 2006, 83 (20.5 percent) rural physician respondents received the professional liability premium subsidy. Of note, six (7.2 percent) of these physicians reported being unaware of receiving the subsidy. Seventy-four (18.3 percent) rural physicians did not receive the subsidy due to disqualifying factors such as being employed by a hospital or health plan (51.0 percent), working for a state- or government-sponsored clinic (16.0 percent), or lack of knowledge about the plan (31.7 percent). An additional 248 (61.2 percent) respondents did not practice in a rural area and thus did not qualify for the subsidy. The 83 maternity care physicians who received the subsidy felt that the subsidy was very important to their ability to continue providing maternity care services (see Table 7).

Receipt of the subsidy was not associated with continuing maternity care between 2003 and 2006, among all physicians and among rural physicians. Subsidized physicians were as likely as nonsubsidized physicians to report plans to stop providing maternity care services (24.1 versus 20.9 percent, $p = .693$). Subsidized physicians who were currently providing maternity care but planned to quit were more likely to cite the cost of liability premiums as the reason for quitting compared to unsubsidized physicians (82.3 versus 54.8 percent, $p = .010$) perhaps reflecting the fact that unsubsidized physicians were more likely to have their insurance paid for by their employer or group. No other reasons for stopping maternity care were significantly different between the subsidized and nonsubsidized groups.

Table 7: Importance of Subsidy to Physician Continuing Various Types of Maternity Care Services among Subsidized Rural Physicians Who Provided Maternity Care and Are Aware That They Were Receiving the Subsidy ($N = 77$)

<i>Service</i>	<i>Subsidy Is "Very Important" to Continuing This Service</i>	<i>Would Stop Service without Subsidy</i>
Prenatal care	75.3%	51.9%
Deliveries	77.9%	71.4%
Back-up surgical services	NA	39.0%

NA, not asked.

DISCUSSION

The number of trained clinicians providing maternity care in Oregon is continuing to fall, despite the implementation of a liability premium subsidy designed to slow this rate of decline. Only 36.6 percent of responding clinicians qualified to deliver babies based on their specialty training were actually providing maternity care in Oregon in 2006, significantly lower than the proportion (47.8 percent) found in 2002 using identical survey methodology (Smits et al. 2004). This decline is most prominent among FPs and GPs, but it is also present among OB/Gyns and CNMs. Similar declines have been reported nationally (Rosenblatt et al. 1991; Sloan 2005). The continued decline of maternity care providers has concerning implications for women's access to timely and appropriate maternity care services in Oregon.

Not only are practicing physicians and midwives stopping maternity care, but it also appears that clinicians who are leaving training are less likely to start providing maternity care in practice. In 2002, 16.5 percent of respondents reported never delivering babies outside of training; by 2006, this proportion had increased to 22.1 percent (see Table 2). Other studies have found that fewer OB/Gyn and family medicine residents plan to deliver babies in practice. A recent survey of OB/Gyn residents by Becker, Milad, and Klock (2006) found that 35 percent were considering a fellowship or a gynecology-only practice after residency. Several studies of family medicine residents and recent graduates found that only 16–23 percent intended or were actually practicing maternity care (Godwin et al. 2002; Ringdahl et al. 2006). Furthermore, the loss of current providers is not likely to be replaced by older physicians resuming maternity care. Several studies have found that once a

physician stops providing maternity care, he or she is highly unlikely to ever provide maternity care again (Greer et al. 1992; Nesbitt et al. 1992).

The Importance of Malpractice Premiums

The increasing cost of professional liability premiums continues to be a commonly cited reason for cessation of maternity care. Both the 2002 and 2006 surveys found that 58–59 percent of respondents cited the cost of premiums as a “very important” reason for quitting. Other studies have found that high malpractice premiums are having a major impact on the number of maternity care providers nationally (U.S. General Accounting Office 2003).

Surprisingly, we did not find a statistical association between subsidy receipt and the high level of importance placed on the subsidy by recipients nor was there a statistical association between receiving the subsidy and continuing maternity care. Clinicians receiving the subsidy were equally likely to report plans to stop delivering babies and more likely to report the cost of malpractice insurance as a major reason for stopping deliveries than physicians not receiving the subsidy. However, clinicians receiving the subsidy reported that it was a very important reason for their ability to continue maternity care and a large proportion threatened to quit maternity care if the subsidy program was discontinued.

The subsidy program has several features that may have contributed to lack of significant impact on maternity care found in this study. First, the qualifications for the subsidy make systematic differences between subsidized and unsubsidized physicians. Physicians not receiving the subsidy worked in urban environments, with very different economic and other practice factors compared with rural environments, or worked in rural areas as employed physicians or in government clinics. These systematic differences between the subsidized and unsubsidized groups make caution necessary when analyzing the impact of the subsidy. Second, the program is funded through a mechanism with questionable long-term viability. If this subsidy is discontinued, physicians will receive a sudden increase in liability premiums. One insurer estimates that an OB/Gyn will have a US\$55,661 premium increase if the subsidy is discontinued at today’s market rates (CNA Insurance 2006). The threat of subsidy discontinuation resulting in such dramatic rate increases may contribute to physician decisions to stop delivering babies. A third issue with the program is the surprising lack of awareness among physicians that they are receiving the subsidy. Seven percent of subsidized maternity care providers receiving the subsidy were not aware that they were receiving it. For a subsidy

program to work to affect physician practice behavior, the physicians receiving the subsidy must be aware that they are receiving it. A fourth issue is that stopping maternity care generally is a 1–2 year process, with the clinician phasing out new pregnant women over this time. It is possible that the subsidy has not yet had a measurable impact but may start to do so in the future.

Another cause for the lack of statistical difference in maternity care continuation between subsidized and unsubsidized physicians may have been the very stable malpractice premium rates in Oregon during the study period. One of the two remaining major malpractice carriers in the state converted from occurrence-based premium writing to claims-based writing. Many Oregon physicians saw temporarily stable or even falling rates in their premiums due to this change. The lack of upward pressure on premiums during this time may have led unsubsidized physicians to not stop maternity care at the rate that would have been expected under the previous higher rate increases, thereby decreasing any difference detected between the subsidized and unsubsidized groups. Additionally, the subsidy program used a direct subsidy to physicians and midwives. Such a direct subsidy may have less impact on practice decisions than a subsidy program that provides coverage for catastrophic losses.

Other reasons for the lack of subsidy impact, which were examined but found to be nonsignificant, were birth rate variations and Medicaid reimbursement. The birth rate in Oregon remained stable during this period. Some rural communities saw declines in births, but others saw increases. Medicaid reimbursement for maternity care remained stable or had slight increases with certain managed care plans during this time period.

Other Factors Important to the Provision of Maternity Care

The Oregon Office of Rural Health convened a meeting of physicians and hospital administrators in April 2007 to try to better understand why subsidized rural physicians were as likely to stop maternity care as unsubsidized rural physicians and more likely to cite malpractice costs as a reason. The focus group participants indicated that lowered malpractice premiums were very important to their ability to continue to provide maternity care services but were not sufficient. Participants who were able to continue to provide maternity care services indicated that they needed a combination of three things: low overhead (including malpractice premiums), reasonable reimbursement from payers including Medicaid, and a large enough pool of providers in their community to minimize the stress and frequency of maternity

care call duties. Additionally, the ability to provide cesarean deliveries was found to be important, but not vital.

Interventions aimed at maintaining the maternity care workforce should focus on all three required areas. Overhead costs can be decreased through subsidy programs and reimbursement increases can be sought through insurance providers and Medicaid managed care plans. Additionally, it is important to provide support for these physicians in ways that ease the lifestyle stress of providing maternity care. For example, Kansas has a locums tenens program, which sends physicians into small communities to provide call relief and vacation coverage for clinicians. Such programs should be implemented in addition to financial policies such as malpractice subsidies.

Limitations

This study has several limitations. As with any survey research, this study may be affected by respondent bias. Respondents tended to be those more likely to be affected by malpractice issues or the subsidy, which may have affected responses. We could have improved response rate via follow-up phone calls or small incentives in the survey mailings; however, our relatively small budget did not allow such methods. Additionally, the survey was quite long. A shorter survey may have improved the response rate at the expense of explanatory information. Despite these methodological shortcomings, we achieved a relatively high overall response rate, which reduces the probability of respondent bias in this study. In addition, we estimate using self-reported delivery figures that the respondent group performed 86.3 percent of the deliveries in Oregon in 2001, increasing confidence that this study captured a very large proportion of the delivery providers in the state. The probability of respondent bias is further reduced by the close correlation of the respondent sample for this study with other statewide databases in age range, geographic distribution, and other characteristics (data not shown).

Another possible limitation of this study is reliance on self-report of intentions to and reasons for stopping performance of deliveries. It is important to note that in our 2002 study, we found that 18.8 percent of respondents indicated that they planned to stop deliveries in the next 4 years. In 2006, we found that the actual reduction in the maternity care workforce was very similar to predicted, at 23.3 percent decline. This finding indicates that physician self-report can be a reliable method for determining future practice changes.

This study is limited by its restriction to a single state, due to the unique nature of the policy under study. The findings of this study may not reflect how

physicians in other areas would respond to similar professional liability insurance subsidies. Further studies could also be done examining physician attitudes and behaviors in other states that implement variations on this type of policy.

In this study, we compared the findings of two surveys, one in 2002 and one in 2006. Analysis of our mailing lists found a very small overall change in the FP workforce in Oregon over these years, with few physicians and midwives starting or leaving practice in the state. While we cannot ensure that the same physicians responded to both surveys, this stability in the surveyed population allows us reasonable certainty in the validity of comparing responses of these two cohorts.

CONCLUSIONS

The loss of maternity care providers in Oregon is continuing. A state program to subsidize the liability premiums of rural maternity care providers does not appear to be effective at keeping rural providers delivering babies. Other policies to encourage maternity care providers to continue delivering babies need to be considered, such as increasing Medicaid payments for deliveries and providing innovative supports for maternity care providers such as a state locums tenens program.

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SUPPORTING INFORMATION

Additional supporting information may be found in the online version of this article:

Appendix SA1: Author Matrix.

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