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Facilitators and barriers to adoption of evidence-based perinatal care in Latin American hospitals: a qualitative study

María Belizan[1], Andrea Meier[2], Fernando Althabe[3], Agustina Codazzi[3], Mercedes Colomar[3], Pierre Buekens[4], Jose Belizan[1], Joan Walsh[5] and Marci Kramish Campbell[6]*

Abstract

Selective episiotomy and the active management of labor have been shown by numerous studies to benefit women's experience of labor as well as its outcomes. However, many Latin American public hospitals have not updated their clinical practices to reflect these findings. Limited access to new knowledge, limited time and physical resources and attitudes resistant to change are factors limiting the adoption of new practices in such hospitals. Interviews were conducted with three department heads, and focus groups were conducted with 31 physicians and midwives working in 10 public hospitals in Argentina and Uruguay. All were asked about facilitators and barriers to making changes in clinical practice. In addition, three focus groups were conducted with 16 pregnant women served by public hospitals. Responses were grouped according to stages of change in incorporating new evidence into practice. Numerous facilitators and barriers were identified by participants, as well as potential strategies for promoting change that could be incorporated into interventions. Barriers included limited access to information, negative attitudes toward changes in practice, lack of skills in performing new practices, lack of medical resources and explicit guidelines and a perceived need to practice defensive medicine. Changing long-standing clinical practice is difficult. Interventions must be adapted to translate evidence-based approaches to new cultures and contexts. Improving information access, use of role models, skill development and improved resources and support may be effective ways to overcome barriers to change in Latin American obstetric care.

Introduction

In Latin American hospitals, as in other parts of the world, much of the health care provided to women during childbirth is not evidence based. For example, systematic reviews report either no benefit or worse outcomes to women from the routine use of episiotomy [1]. Although this information is available in journals and online, it is not applied: in one Latin American hospital study, the rate of episiotomies among primaparous women delivering vaginally was estimated at 92% [2]. As another example, the active management of the third stage of labor using oxytocin has been proven effective for preventing postpartum hemorrhage [3]. Despite this evidence, the standard of care is expectant management in a large proportion of Latin American hospitals [4]. To improve women's health in Latin American countries and throughout the world, interventions are needed to promote education and training in evidence-based medicine and adoption

[1]Institute for Clinical Effectiveness and Health Policy, Buenos Aires, Argentina, [2]School of Social Work, University of North Carolina, Chapel Hill, NC 27599, USA, [3]Perinatal Research Unit, Montevideo, Uruguay, [4]Tulane School of Public Health and Tropical Medicine, New Orleans, LA, USA, [5]Department of Maternal and Child Health, University of North Carolina, Chapel Hill, NC, USA and [6]Department of Nutrition, University of North Carolina, Chapel Hill, NC, USA
*Correspondence to: M. K. Campbell.
E-mail: campbel7@email.unc.edu.

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of evidence-based guidelines in clinical obstetric practice [5]. Intervention strategies must be culturally appropriate and regularly evaluated for actual health benefits in these diverse settings.

Theories of implementation emphasize the need for a thorough understanding of the barriers that hinder practitioners from adhering to evidence-based practices [6]. A systematic review of 76 studies classified barriers into those affecting physician knowledge, attitudes and behavior [7]. A number of factors affect where these barriers occur within health care systems and the extent of their impact, including: guidelines to be implemented; characteristics of individual health professionals; patient–provider interactions associated with the specific practice and characteristics of the health care team, the health care organizations and the wider social and political environment [6, 8].

Few studies have examined these barriers in the context of improving evidence-based medicine in Latin America. One recent survey of obstetricians and gynecologists (OB/GYNs) attending a national conference in Brazil found that knowledge and use of evidence-based practice guidelines was low [9]. Physicians' knowledge scores were inversely associated with years since graduation from medical school. Whereas nearly all of the physicians surveyed reported that they considered systematic evidence reviews to be relevant, only 55% reported using them. The authors concluded that: (i) the problem might be worse among physicians not attending such conferences and (ii) there is a lack of effective continuing medical education.

This paper presents findings from a qualitative study conducted during the formative stage of the Guidelines Trial (GT), a cluster randomized controlled trial in Argentina and Uruguay. The overall aim of the GT is to evaluate whether a multifaceted intervention designed to facilitate the development, implementation and maintenance of evidence-based clinical guidelines will increase the use of selective episiotomy and active management of the third stage of labor in Latin American public maternity hospitals. The GT is based on theories of health behavior change, including the stages-of-change transtheoretical model and organizational change [10, 11]. It draws upon previous research on incorporating evidence into clinical practice, including one-on-one information sharing, reminders and use of opinion leaders [12, 13].

Qualitative research with practitioners in public hospitals was used to identify salient barriers and facilitators for changing practices at different levels of change (individual/group and hospital/organization), as well as at different stages of incorporating evidence into practice [14]. The overall GT research protocol is described elsewhere [15]. This paper discusses the qualitative findings and their implications for introducing and adapting evidence-based OB/GYN practice innovations to Latin American public hospital settings.

Methods

Hospital administrators, mid-level practitioners and pregnant women contributed their perspectives to this study. Administrators (all OB/GYN specialists, heads of maternity units in public hospitals and university professors) are henceforth referred to as 'department heads'. Practitioners included OB/GYN physicians, residents in the last 2 years of residency and midwives. Both groups were recruited from seven public hospitals that were not included in the GT, but were similar to study hospitals in geographic location and population characteristics. Department heads and study staff who had knowledge about the local hospital personnel were asked to suggest staff physicians and midwives for focus group recruitment. Local coordinators of the GT invited 10 professionals per focus group, but the final groups ranged from four to seven participants. Some invitees may have declined due to location; focus groups were held outside hospitals because each group included persons working at different facilities. Focus groups obtained opinions and perspectives from homogenous groups of providers (e.g. physicians versus midwives) and benefited from group interaction and group dynamics [16].

Individual interviews, rather than focus groups, were conducted with department heads for several

reasons: the geographical distance between hospitals where these physicians worked, the difficulty in finding a time when they could all meet together and the perception that peer pressure might influence their responses. Two led maternity departments in Argentina and one in Uruguay. Two were men and one was a woman; each had clinical, teaching and administrative responsibilities.

A total of eight focus groups were conducted: three with mid-level physicians specializing in OB/GYN with clinical and teaching duties (two groups in Argentina and one in Uruguay), two with clinical midwives (both in Argentina) and three with pregnant women served by three public hospitals (two in Uruguay and one in Argentina). The three physician focus groups included seven men and nine women, the two midwife focus groups included 15 women and the three pregnant women's groups included 16 women.

The study protocol was approved by the institutional review boards of the Pan American Health Organization, the University of North Carolina at Chapel Hill and Tulane University. All participants gave their written informed consent. All focus groups and interviews followed a semi-structured questionnaire protocol designed for this study and slightly adapted for each target group. Individual interviews were conducted by the first author, a social scientist. Focus groups with professionals and pregnant women were conducted by study team members, including the first author and co-authors as moderators and comoderators.

Each practitioner focus group began with questions about participants' perceptions regarding the availability of scientific information to set policies and routine procedures for perinatal care at their hospitals. Participants were asked to consider selective episiotomy and active management as examples of evidence-based obstetric practices, to comment on potential barriers to changing these practices and to describe the ways that such changes might be initiated and implemented in their hospitals.

The three focus groups with pregnant women explored whether hospitals and practitioners solicit feedback from women regarding perinatal health care decision making. Participants were asked from whom they received information about labor and delivery, their feelings about involvement in decisions and whether they were actually involved in decision making about their labor and delivery.

Data analysis

Interviews and focus groups were transcribed from audiotapes. Data codes were drawn from the interview guide and supplemented by a grounded theory-based approach to capture emergent themes. A 'constant comparison' strategy ensured internal consistency in the coding process [17]. Three members of the study team coded all text segments independently and identified potential new codes for comments that did not fit the existing ones. They then met to resolve discrepancies and determine the relevance of new codes. Coded transcript texts were entered into Atlas-TI Version 4.0, a software program that facilitates the organization of qualitative textual information to elucidate themes (http://www.atlasti.com/index.php). Analysis was conducted in four steps: (i) contextual factors, (ii) within focus group analyses, (iii) within target group analysis, (physicians, midwives, department administrators, pregnant women) and (iv) between target group comparisons.

Results

As shown in Table I, a total of 50 individuals participated in the formative study, including 16 mid-level physicians and 15 midwives from seven hospitals, heads of three different hospitals' OB/GYN departments and 16 pregnant women. All participants were practicing in or served by public hospitals in Argentina (Buenos Aires and Rosario) and Uruguay (Montevideo and Salto). Practitioners were predominantly female and had been practicing between 1 and 33 years. In general, midwives were older than physicians and had longer clinical experience. Pregnant women were in the last trimester of pregnancy and had varying education levels.

Focus group findings were categorized to reflect four stages of change in the adoption of

Table I. *Characteristics of focus group and interview participants*

Participant category	Number of participants and interviews/focus groups	Gender	Age mean (range)	Years of specialty mean (range)	Country	Number of hospitals represented
Upper level heads of OB/GYN departments	Three interviews	Male 2, Female 1	No data	No data	Argentina 2, Uruguay 1	3
Physicians	16/three groups	Male 7, Female 9	35.2 (31–42)	5.9 (1–13)	Argentina 11, Uruguay 5	7
Midwives	15/two groups	Female 15	40.3 (29–57)	13.6 (1–33)	Argentina 15	7
Pregnant women	16/three groups	Female 16	21.6 (16–29)	Education 10.8 years (7–14)	Argentina 5, Uruguay 11	3

evidence-based practices [17, 18]. Stages were adapted slightly to fit the emergent themes and included: introduction of new knowledge; dissemination of knowledge within the organization; implementation of practice changes and maintenance/sustainability of change. In addition, some factors affected change across all stages. Figure 1 summarizes barriers to change across the stages of adoption and at several levels of change, from individual health professionals to hospitals and the broader environment.

Table II lists by stage and source the barriers that were discussed, illustrated by relevant quotations.

Stage 1: introduction of new knowledge

Facilitating factors

Most informants reported that practitioners in their hospitals obtained clinical practice information from a variety of sources. In physician and midwife groups, participants relied primarily on informal 'word-of-mouth' communication from peers. Physicians had access to some printed journals and OB/GYN textbooks in their hospital libraries and attended OB/GYN conferences for updating. Midwives reported that professional meetings were their most important sources of information. They also received updates through newsletters from professional associations and through distance learning programs. Practitioners mentioned the internet as a source of information, but said that its use was not widespread. They reported that physicians with internet access retrieved research articles from Web-based health research databases.

Study participants stated that hospital physicians varied in how well informed they were about current clinical practice standards, as well as in levels of motivation and interest in improving practices. Subgroups of professionals within each service were interested in practice improvement, and these staff members were the ones who initiated changes. This was usually an informal process rather than a result of planned analyses of clinical problems or decisions by heads of OB/GYN departments.

In all three interviews and in all but one practitioner focus group, participants described residents as more receptive to new practices than other physicians. At hospitals with residency programs, professional staff had more opportunities for training and better access to updated information. All agreed that departments staffed by motivated doctors and supportive administrators influenced the attitudes of residents about the value of new knowledge, and that practitioners were spurred to study because they had to teach the residents:

> Having a residency program in a hospital tends to push all the doctors to be better informed. In public hospitals with no residency programs, it's much less organized. (Physician focus group)

Barriers

Various factors were cited that inhibited awareness and receptivity to practice innovations. Participants noted that their attitudes about practice changes were set in medical school. Many were not trained to view medical knowledge as dynamic or provided

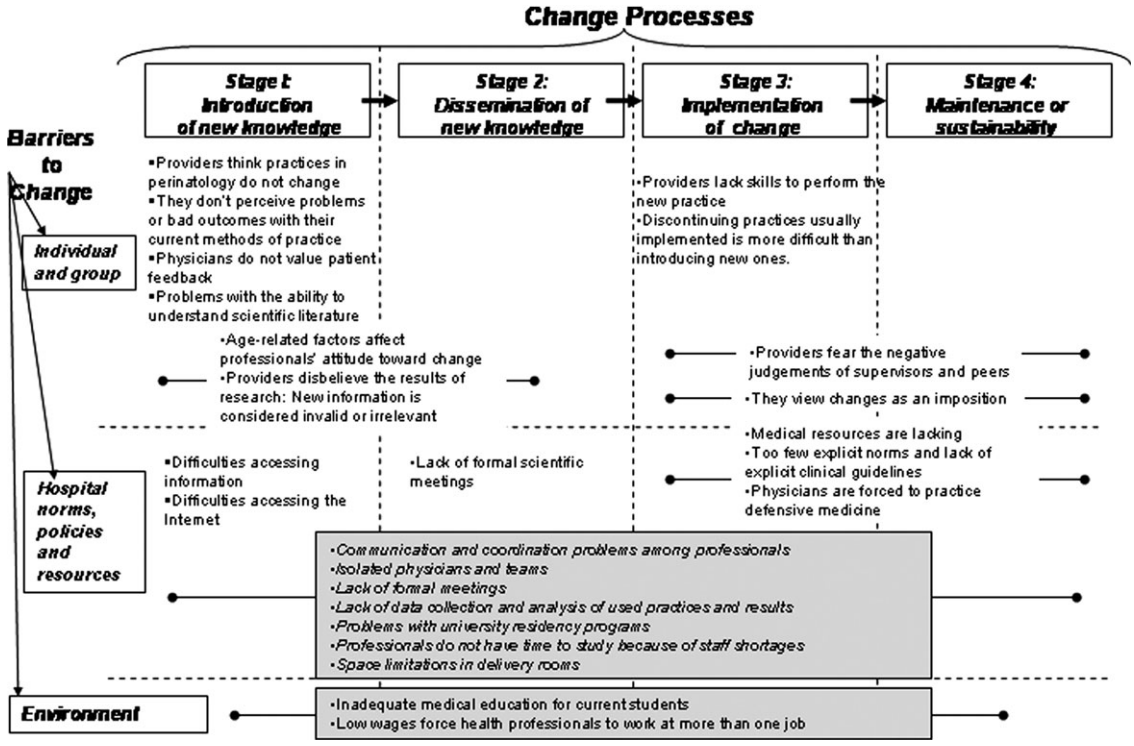

Fig. 1. Multi-level influences affecting barriers to changing clinical practice.

with the skills needed to understand research literature. Chronic staffing shortages limited time to seek information. When they tried, inadequate hospital libraries and lack of internet access were deterrents. Beliefs persisted that no significant progress in perinatology has been made and that contemporary clinical management of delivery is similar to techniques learned many years ago:

> There have not been many changes in the use of drugs during labor. Management has been much the same for years …. (Midwife focus group)

Stage 2: dissemination in the organization

Facilitating factors

After new practice information is introduced in hospitals, its fate depends on who disseminates it. Practitioners felt that new knowledge is best disseminated by physicians recognized by their peers as well informed. When departmental authorities disseminated information, they used more formal communication channels, including printed materials (e.g. clinical guidelines) and discussions in formal meetings or clinical rounds. One department head reported that changes are taking place at her hospital through training in the development and implementation of clinical practice guidelines.

Barriers

Practitioners linked greater physician age and longer time since medical training with increased reluctance to adopt new practices or drop familiar routines. In all physician focus groups, participants reported that some of their peers considered new scientific information—and recommendations based on it—invalid or irrelevant to the situations

Table II. *Barriers to changing practice identified in professional focus groups*

Stages of change	System levels	Barriers	Total number of data sources	Illustrative quotations
Barriers to introduction of new knowledge	Individual and group	HPs do not perceive that they are having bad outcomes with their current practice.	5	Even before the discussion of episiotomy began, I was practicing it …. I have a high number of episiotomies, as do the majority of the obstetricians in this country. However, I don't have complaints or complications in general …. I can't say that my practice is correct. But I can tell you that I am not dissatisfied with this type of practice. Still, I am very open to modifications, if they show me that the other practice is better. (Director of Service)
		HPs do not have the skills to understand medical literature.	5	… it can happen that you are looking for the updated information, and you find an article … you read it and it says that it is advisable to do such and such a thing; that is our method of updating. The author says that, but I share it and I interpret it in the context of what I am living, based on personal experiences. (Physician focus group)
		Providers think practices in perinatology do not change.	2	There have not been many changes in the use of drugs in the monitoring of labor. Management (of labor) has been much the same for years …. (Midwife focus group)
		Chronic staffing shortages leave HPs little time to study medical literature.	7	The physicians see more patients each day because we have lost many staff members and we haven't replaced them … we try not to reduce the number of patients because in the current situation, people who come here go through an enormous sacrifice because they do not have any money, no jobs. So, we cannot send them back …. (Director of Service)
	Hospital	HPs have difficulty accessing up-to-date information.	6	Access to information is still limited for professionals. Access is very expensive and the newest edition of the bibliography that the majority of people have access to is from 2000 or 2001, or CDs that one can get from RHL (Reproductive Health Library PAHO/WHO), or the Cochrane. We have a library that is fairly up-to-date, with a medical database that we, the professionals, maintain because we don't have a staff, and it doesn't have the financial support. (Director of Service)
		HPs do not have internet access in their hospitals.	5	I don't know how many of my physicians log in to the internet. I know that many do because they comment: 'I found these things' … but others use the computer only for word processing and very little for other things. (Physician focus group)
		HP age and time since finishing medical school affect dissemination negatively.	5	It will be hard for you to implement this … at a center where there are a lot of senior professionals; you will have to struggle against them. Those people are usually distant from the university and they are not prepared for change, because they were trained for something different …. (Physician focus group)

Table II. *Continued*

Stages of change	System levels	Barriers	Total number of data sources	Illustrative quotations
Barriers to dissemination	Individual and group	HPs consider new scientific information invalid or irrelevant.	6	There are studies that suggest that sometimes laceration is better than episiotomy. But experience should be taken into consideration. (Midwife focus group)
		Scientific meetings are of poor quality.	3	on the other hand, let's admit that in OB/GYN at least you can attend update meetings every year, but you don't learn anything new. (Physician focus group)
Barriers to implementation	Individual and group	HPs' lack skills to perform new practices.	3	One of the things that could influence change is how personally comfortable you feel with the new technique. If I am shown that a certain medical technique is 10 times better for the patient, but if I feel unable to do it, and if I feel uncomfortable and insecure carrying out the procedure, I probably won't implement it. (Physician focus group)
		Physicians have an 'interventionist' orientation: a preference for adding new practices, not dropping familiar ones.	4	Medical training teaches one to be an interventionist. You can change many things, but not from doing to not doing. It is more difficult to tell a resident 'for such a thing you need to do such a procedure. (Director of Service)
				It's easier to incorporate than to drop the routine … the problem is habit. If you have the habit, it's more difficult to drop a routine. (Physician focus group)
Barriers to implementation and maintenance	Individual and group	HPs fear negative judgments by peers and administrators.	3	If I did something that was not routine, then I have the chief of the labor and delivery room and the director of service telling me 'no' and 'why did you do it,' and I have to give explanations. (Midwife focus group)
		HPs view pressure to change practice as an imposition.	3	I think it should be part of the information, but not to impose it as a practice. It's happened to us many times … we arrive to a shift and we are told to impose some measures: 'from now on, you need to fill out this form; you need to deliver like this; you need to do it like that.' Give me an explanation … we would always come back to the same thing, a dogmatic practice saying that you need to do it this way and that is it. (Physician focus group)
	Hospital	There is a shortage of professional staff and of needed materials, and physical facilities are sometimes inadequate.	11	The barriers are basically financial. We pay a high cost for any financial crisis, or for decisions made by the ministry, for example. We have a lack of personnel; it's more noticeable among nurses … and we have difficulty supplying materials. We are left with no monitors, and occasionally with no medications, for example. This is a great barrier to the practice, because one wants to implement clear conduct, but knows that one can implement today, but it can be suspended the next day because of lack of resources …. (Director of Service)

Table II. *Continued*

Stages of change	System levels	Barriers	Total number of data sources	Illustrative quotations
		There are conflicting clinical norms.	6	It can be difficult in certain issues, for example conduct regarding episiotomy or active management; it is difficult for a service to follow one clinical norm, because in reality we are three people per team, a total of twenty-one different norms, and each physician bases his/her norms on his/her personal experience. (Physician focus group)
		There is a lack of explicit clinical guidelines.	5	I don't think there is any policy inside the clinics. It just depends on personal positions. (Physician focus group)
		HPs fear malpractice suits.	5	Sometimes, a very demanding person will come once or twice with a very demanding family, and they don't leave, and you admit them as pre-labor even though she isn't in labor. You know, this is becoming a culture. With the first minor complication, you are judged. (Midwife focus group)
Barriers affecting change across all stages	Hospital	There are chronic communication and coordination problems between HPs.	3	There are department chiefs who already have clashed with the director of service, the director of service clashes with the chief of unit, the chiefs of unit clash with the interns on call. You can imagine what that is … well, it's a battle! (Midwife focus group)
		Departmental meetings are infrequent.	3	It's difficult to establish norms and to impose them in a place where there is no opportunity to meet and discuss them with everyone. (Director of Service)
		There is a lack of systematic feedback on practice.	3	What affects us is that we need more complete information. For example, the neonatologist never completes (the data) … and many times I need them to complete information about the delivery …. (Physician focus group)
		Physicians are isolated.	2	I think every shift is its own world, and a physician establishes a change or not … for example, giving prostaglandin: not everyone is doing it … it's not a formalized procedure in my practice. (Midwife focus group)
		There are some problems with university residency programs, but these are offset by advantages.	2	Negative impact of university residency programs: We have hospitals in the region that are specialized in teaching how to use forceps … a patient who goes there ends up with a forceps (delivery) because they are the best school of forceps in the region. This is terrible, to use a forceps so that someone can learn. (Midwife focus group) Positive impact of university residency programs: The fact that there is a residency program in the hospital activates all the physicians to inform themselves. But in public hospitals with no residency program, it is fairly anarchical. (Physician focus group)

Table II. *Continued*

Stages of change	System levels	Barriers	Total number of data sources	Illustrative quotations
	Macro-level	Medical training of current students is inadequate.	5	I think today in the University, although we live in the time of computer technology, there is nothing written in basic education to teach premedical students to have an open mind about change, to let them know how much to change, to know when a change is beneficial, and to know when the studies that support these changes have been well-designed. (Physician focus group)
		Poor working conditions for HPs exist countrywide.	2	That is another factor built into the difficulties that we have: the multi-employment … to be running from one place to the next, to be very tired, or to be thinking of the problems that one has in one place (while working in another) keeps one more worried than what one is doing here. (Physician focus group)

HP, health professional.

in their hospitals. Some participants also complained that OB/GYN conferences were repetitive and offered only low-level information, leaving them unmotivated to seek new practice knowledge:

> In the hospital, the last time that they updated OB/GYN (guidelines) was in 1994. (Physician focus group)

Stage 3: implementation of practice changes

Facilitating factors

Practitioners reported that practice changes in OB/GYN departments occurred through the leadership of motivated physicians and by administrative mandates, but never as a result of patients' preferences. Scientific evidence alone was usually insufficient to convince physicians to change their behavior. Physicians considered research evidence more convincing if the studies used patient populations similar to those with whom they worked. Studies conducted in their own hospitals were most persuasive.

Motivated doctors modeled new practices within their services. 'Later adopters' assessed the efforts of their 'early adopter' peers in terms of treatment outcomes, as well as the relative costs and benefits to patients and physicians. In all the practitioner focus groups it was noted that, even with good clinical outcomes, 'later adopters' were unlikely to adopt the new practices as 'routine.' Physicians were more likely to accept changes if this would not increase their workloads and if consensus was achieved among staff members that the change was worthwhile.

Practitioners disagreed about the best ways to implement change. Many thought that staff would be more motivated if changes were negotiated rather than imposed from above, saying that they valued participation in planning and consensus building when new actions or practice changes were considered. However, they also said that the quickest way to change clinical practice was for a department head to mandate the change. One physician offered an example of how his department changed procedures for cesarean section in cases of breech presentation. The department head's directive to change procedures was disseminated using posters, hospital press releases, and presentations in formal meetings. The participant noted that, when a directive is posted in his department, staff members assume that it is an order, so they adopt the change:

> In the teaching institution, there was a big sign in the hall that read: 'Every breech needs to go for

a cesarean, signed: The Chief.' Later, we discussed why and they explained the reasons. (Physician focus group)

Barriers

At the individual level, health professionals' competencies and skills affect their receptiveness to new clinical practices. In one physician group and one midwife group, participants agreed that health professionals may reject new practices—specifically, selective episiotomies—because they feel more comfortable with familiar procedures or do not have the skills needed to do new ones:

> One of the things that could influence change is how personally comfortable you feel with the new technique. If I am shown that a certain medical technique is 10 times better for the patient, but if I feel unable to do it, and if I feel uncomfortable and insecure carrying out the procedure, I probably won't implement it. (Physician focus group)

These participants further believed that doctors tended to be 'interventionists,' preferring to incorporate completely new practices, such as those involving new technologies, new drugs and new surgical interventions, rather than to fine-tune existing routines. Thus, selective episiotomy was a less attractive option because it involved fewer procedures. In contrast, midwives reported that they preferred not to use any technical interventions, thereby keeping deliveries 'as natural as possible'.

In addition, practitioners reported that physicians did not seek feedback from patients about practices or outcomes. There was consensus that very few female public hospital patients expressed desires concerning procedures or treatment. Physicians attributed patients' unwillingness or inability to offer input to low socioeconomic status, lack of information and family problems. Practitioners also reported that women may request inappropriate care based on unreliable or inaccurate information from friends, relatives and the mass media. Some physicians worried that poorly informed patients would be less willing to comply with recommendations. Finally, physicians did not want to feel constrained by a patient's preferences if her status changed after labor started.

Practitioners all agreed that physicians' behavior depended entirely on what they considered 'adequate' or 'correct', without input from patients. Despite the fact that many OB/GYNs were not informed about evidence-based practices themselves, they set their own standards for what information was reliable:

> It's a great idea to provide information, but there are things that people can't understand. It's like someone asking me about the construction of a building. I can say I like it, but …. (Physician focus group)

Stage 4: maintenance/sustainability of change

Facilitators

Participants agreed that it was a challenge for clinical staff to sustain any practice changes over the long term. Most agreed that written guidelines are necessary. In order for integration to occur, the head of the department has to approve of the changes and the professional staff must reach consensus about the value of the change:

> It's because not everything can be done using the top-down approach. Some things need to happen through persuasion of every single one (staff members). There is no way to think that everything can be absolutely vertical, that you give an order and people will comply. That always fails, systematically. Therefore, it takes time. (Director of Service interview)

Participants also believed that changes were more likely to be sustained if staff received frequent reminders and if their behavior was closely monitored by department administrators.

Barriers

Social relations between professional staff in OB/GYN departments also affected motivation to implement and maintain new practices. Peer pressure was an important factor. In two focus groups, doctors

and midwives admitted fearing the negative judgments of their colleagues or authorities if they used a new procedure. The potential sources of these negative judgments appeared to vary by profession. Doctors were more concerned about the judgments of their department heads. Midwives reported that they were wary about changing to selective episiotomy because they believed that their patients' physicians would be angry with them if it resulted in bigger tears:

> If I did something that was not routine, then the chief of labor and delivery and the director of service would be telling me: 'no' or 'why did you do it?' and I would have to explain. (Midwife focus group)

There was widespread agreement among practitioners that implementation and maintenance were subject to disruption due to lack of medical resources. Practitioners reported frequent frustration because a lack of supplies or medicines limited their ability to do correct clinical management. They said that if a new clinical practice required different supplies or equipment, fluctuations in availability could determine whether the practice was sustained over time.

Practitioners reported that, at the hospital level, clinical norms were often in conflict. Hospitals had strong, but implicit, norms that physicians should be allowed to make independent decisions. Physicians' decisions were often influenced, however, by their fear of malpractice suits, leading them to use practices such as unnecessary diagnostic tests or cesarean sections. Physicians tended to retain familiar practices that they believed were 'safer'. Team members who endorsed the idea of evidence-based practice often felt that they could not change the behavior of their peers. Although practitioners generally valued formal clinical guidelines, they felt such guidelines were not sufficient to maintain practice changes without staff consensus.

Barriers to change affecting all stages

Institutional factors

For every stage, health professionals cited chronic communication problems within their hospitals. Many physicians practice in relative isolation. They are hired for only one shift in a hospital and have little contact with professionals on the other shifts. Departmental staff meetings are infrequent, and each shift team has its own standard procedures for delivery care that may not coincide with those of other shifts. Practitioners also reported that varying decision-making procedures between physicians and teams contributed to conflicts. While participants agreed that more collaborative work was needed on their units, they also pointed out there were no institutional incentives or resources for working in teams.

Lack of systematic feedback on practice exacerbates staff problems with communication and coordination. Physicians reported either that practice data were not routinely collected in the public hospitals or that, when data were collected, there were no protocols for analyzing them and making hospital staff aware of clinical outcomes. In the rare instances when hospital staff did receive statistical reports about their practices, discussions about these findings rarely led to improvements in care.

Whereas university residency programs had many benefits, they had some disadvantages for clinical practice changes. In one interview and one physician focus group, participants observed that residents were motivated to learn as many procedures as they could and practice them as much as possible. Consequently, residents may not follow recommendations that episiotomies should be used less often or that forceps should be used only when necessary:

> We have hospitals in this region that specialize in teaching how to use forceps … a patient that goes there ends up with a forceps delivery because it's the best school of forceps in the region. This is terrible, doing a forceps delivery just so that someone can learn. (Midwife focus group)

In one interview and two focus physician groups, participants pointed out that the physical design of the delivery room itself could constrain practice changes. For example, women could not choose the positions they wanted for delivery and family

members could not be allowed in the room to support women during their delivery.

Macro-level factors

Two macro-level factors impeded change. The first involved inadequate training for medical students. In both physician and midwife focus groups, participants agreed that medical students were not encouraged to think critically about practice. Furthermore, medical students still lacked access to and experience with computers and information technology, making it difficult for them to learn about practice innovations. There was doubt whether adoption of evidence-based practice would occur without addressing these deficiencies.

A second, pervasive factor had to do with poor working conditions for health care professionals in Uruguay and Argentina. Low wages in both countries have forced many to work at more than one job in order to earn an adequate income [19]. Participants in two of the physician focus groups described working in public hospitals for only one shift per week and spending the rest of the week working in private hospitals or their own private practices. Participants in these groups believed that having doctors spending so little time in their public hospital units made it difficult to develop consensus about existing routines and impeded adoption of new practices.

Perspectives of pregnant women

In the focus groups with pregnant women, participants reported that they did not ask questions or participate in the decisions about labor and delivery, other than requesting to have their husband or mother present in the delivery room.

Women varied in the amount of information they received and their level of interest in the information. The most important source of prenatal information came from family members (mothers, sisters) and friends; however, some of the women recognized that this information might be inaccurate and 'full of myths and legends':

> I have my mother to ask, how it was for her—but hers was another time, different things, different education, and that comes with a different mentality too. The information they provide gives you doubts and fears. (Focus group with pregnant women)

In all three groups, women mentioned that they read books or magazines about childbirth. Many women said that they found information about specific pregnancy-related problems such as contractions, back pain or vomiting. Universally, women obtained these books and written materials from family and friends rather than from the clinics:

> I read an encyclopedia that my mother's friend gave her.
>
> I got (a book) from my mother-in-law.
>
> My sister-in-law loaned me (a book). (Focus groups with pregnant women)

Women were uninformed and relatively uninterested regarding the clinical practices that were the focus of the current study (episiotomy and active management):

> … for me personally, I don't give much importance to the placenta (active management can prevent retention of the placenta) …. For me the most important thing is from the first contraction until the birth, until the baby is born. The contractions, the labor, the birth, it's all important, right?
>
> (When asked whether they believed that episiotomy was necessary:) The doctor doesn't talk about that. (Focus groups with pregnant women)

Few women attended prenatal classes. Some women said that such classes were not available at their hospital. A number of women who did not attend birth preparation classes justified not doing so by saying that they felt less worried by not knowing too much in advance about the experience of delivery:

> Sometimes, yes (it's important to be informed about birth) …. However, sometimes birth classes make you more nervous. (Focus group with pregnant women)

On the other hand, the women who did attend classes valued them because they felt calmer and more prepared for delivery:

> … because if you don't know, you will be afraid. If you don't have information you don't know what to … expect. It's my first pregnancy and (in the prenatal classes) you can talk about your fears …. They give you such complete information that you are left with very few personal doubts. (Focus group with pregnant women)

Women said that physicians and midwives provided credible information, but some expressed dissatisfaction with the amount of information they received from their health providers and reported that they were left feeling uncertain and confused about what would happen to them in the birthing process. However, other women expressed satisfaction with the amount of information they received, as well as their relationship with their health provider and his/her ability to alleviate fears and respond to concerns. Women recognized that in the public hospitals the situation was difficult due to many patients waiting all day, and that the midwives and doctors were trying their best:

> The doctor doesn't have time to sit down with you and explain things to you. (Focus group with pregnant women)

Discussion and recommendations

Individual barriers to change were found to cluster into three groups: those involving access to and evaluation of up-to-date information, those involving negative attitudes toward change or lack of new skills and those involving interprofessional social dynamics such as leadership and peer pressure. System-level barriers include the physical and financial realities of the Latin American medical education and public hospital systems, in addition to the broader economic situation in these countries. Given these seemingly intractable barriers, promotion of more evidence-based practices presents a real challenge. However, facilitators of change exist as well. These include the presence of innovators, especially younger physicians and residents, and the importance of word-of-mouth communication to disseminate and persuade others to adopt a new practice. Participants stressed the importance of having models and seeing results in their own setting as opposed to reading evidence of studies conducted elsewhere. Top–down decisions were seen to promote rapid change in practice, but collaborative decision making was generally preferred.

This study had a number of limitations. As with all qualitative research, the findings may not be generalizable to the larger population of practitioners in these countries. For example, the physician participants may have been younger than average. The study was conducted in primarily urban hospital settings due to convenience and access to participants, possibly missing issues relevant to rural public hospitals. Findings were based on opinions and self-report rather than observation of actual hospital practices. In addition, this research was conducted in 2002, during a time of particularly serious economic crisis in Argentina. Economic barriers may have been more prominent due to this possible historical bias.

Findings confirmed that the evidence-based practices selected during the GT protocol design stage (episiotomy and active management of labor) were appropriate, pertinent and acceptable to health care providers. Activities tailoring these practice changes to the characteristics of the providers were identified, including some strategies not considered in the original protocol. The following strategies were implemented:

(i) Improved information access: computers with access to a project website and links to the Cochrane database and other on-line resources were installed in all hospitals where feasible, and all hospitals received a copy of the Pan American Health Organization/World Health Organization Reproductive Health Library [20] and access to the Cochrane Library in Spanish. Hospital personnel were trained to use these resources. Due to the economic situation in Argentina,

many hospitals were without internet access. In those sites, the computer resources were provided via CD-ROM.

(ii) Seminars and presentations at the hospitals: based on the cited need to increase updates and continuing education/training opportunities, each hospital held seminars to present new information to all physicians and midwives.

(iii) Use of role models—opinion leaders or facilitators: practitioners agreed that it was essential to have someone in the motivator role, particularly later in implementation, when novelty wears off and 'the excitement starts to fade'. The GT protocol had included the use of opinion leaders; however, based on participant input, they were called 'facilitators'. Facilitators received training in clinical guideline development, and disseminated this information to others in their hospital.

(iv) One-on-one informational sessions: practitioners cited word-of-mouth communication as the most effective means of dissemination. Personal visits from facilitators were scheduled with each physician and midwife on the perinatal service.

(v) Skill development: hands-on workshops were held to teach skills and demonstrate delivery without episiotomy and using active management of the third stage of labor [21]. Facilitators were encouraged to provide additional opportunities for staff to observe and practice these skills.

(vi) Resources: plans included establishing clinical guidelines, posting reminders issued at the departmental level and conducting practice audits and feedback. Monthly reports provided feedback to each hospital on rates of episiotomy and active management. Economic issues, especially regarding the availability of oxytocin, were considered in light of the focus group findings. However, the research team decided not to supply oxytocin kits because this would not be sustainable over the long term.

(vii) Continued support: to keep facilitators motivated and active as program 'champions', monthly meetings with regional project coordinators were added to the intervention protocol. At these meetings, facilitators would discuss progress and issues of concern and review and update their information and skills.

(viii) Integration of new guidelines: participants felt that ongoing administrative support would be necessary for maintenance of change. Establishment of the new practice as a formal hospital clinical guideline would be important for long-term sustainability. The study's process evaluation will assess the extent to which each hospital integrates the new practices into policy.

Many of the barriers identified in this study generalize to other countries and medical practice issues [22]. Findings enabled tailoring of a set of evidence-based intervention components to address the specific barriers that were most relevant to these providers at each stage in the process of change. Analysis of study outcome and process measures, currently underway, will provide more insight into the effectiveness of the resulting intervention strategy.

Lastly, the focus groups with pregnant women were conducted to triangulate information obtained from practitioners, as well as to determine whether a component of the intervention should focus on patient education. Many women's health programs in various parts of the world include a focus on education and empowerment in decision making, although there are cross-cultural and within-culture differences in societal norms and women's preferences for involvement [23]. The findings from this study, however, indicated that a patient empowerment component to the GT would not necessarily influence physician behavior or change clinical practices in the public hospitals. There may be reluctance on the part of public hospital patients in Argentina to question their providers or appear demanding because their care is provided free of charge (Maria Belizan, unpublished). Future research should examine these issues more extensively and consider strategies to promote the education and empowerment of Latin American lower socioeconomic status women as part of the promotion of evidence-based clinical guidelines.

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Conflict of interest statement

None declared.

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