

# The Perinatal Patient Safety Project: New Can Be Great!

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## Introduction

Although in 2000, the frequency of birth injury claims filed in the Kaiser Permanente Northern California Region (KPNC) had remained stable for years, their cost had risen dramatically. In response to this trend, the KP Board of Directors assigned Bruce Merl, MD, Director of The Permanente Medical Group (TPMG) Medical-Legal Affairs, and Julie Nunes, KPNC Regional Risk Management Director, the task of reducing the cost of these claims. Also assembled to address this problem was an expert group consisting of Susan Smarr, MD (obstetrician and Assistant Physician-in-Chief

for Risk at the KP Santa Clara Medical Center), Robin Field, MD (perinatologist at the KP San Francisco Medical Center), Sonia SooHoo, MD (obstetrician and Chief of Medical-Legal Affairs at the KP South San Francisco Medical Center), and Mary Parks (KPNC Senior Counsel for Professional Liability). They performed an in-depth analysis of both the literature and the KPNC experience regarding perinatal events. Risk strategies developed from these efforts were highlighted at a *Medicine Today* broadcast in 2001. A theme that emerged from this analysis was the integral role of communication and teamwork in successfully managing obstetric emergencies.

from these industries included drills for emergencies; understanding human error; a flattened hierarchy during emergencies; human factors techniques that focus on interpersonal communication and shared responsibility; focusing on the problem and not the person; and theories such as normalization of deviance (acceptance of lower standards of performance over time because "you got away with it"). With these new tools, Ms Nunes obtained a Garfield Grant to implement these approaches in the KPNC perinatal units. The resulting project was the Perinatal Patient Safety Project (PPSP), whose Principal Investigator is Julie Nunes, RN, MS, CPHRM, and whose co-investigators are Bruce Merl, MD, TPMG Director of Medical-Legal Affairs, and Gabriel J Escobar, MD, Director of the KPNC Perinatal Research Unit. Project management was provided by Sharon McFerran, RN, PhD, CPHQ, PPSP Senior Project Manager, whose participation was funded by the Garfield Grant.

Initiated in 2002, the project required that each facility initiate

two or three changes using Human Factors techniques during the year the facility participated in the project. PPSP was piloted at four KP sites in 2003: the Hayward, San Francisco, Santa Teresa, and Walnut Creek Medical Centers. In 2004, the program was taken to four additional medical centers—Redwood City, Sacramento, South Sacramento, and Vallejo—and in 2005 is being extended to KP sites in Fresno, Oakland, Santa Clara, and Santa Rosa.

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## Sidebar 1. PPSP Innovations are Big Steps Forward

PPSP is being adopted Programwide. Teams are being identified in all KP Regions. A Critical Events Team Training (CETT) Train-the-Trainer program was offered in 2004 in the KP Southern California Region. Several KP Regions are purchasing mannequins in preparation for the training. A Fetal Heart Rate training video has been developed for Programwide dissemination to standardize language and interpretation of fetal heart rate tracings.

## Learning From Other Industries: The Perinatal Patient Safety Project

With this insight and in coordination with Douglas Bonacum, Vice President of Safety Management, and Suzanne Graham, Patient Safety Practice Leader for the California Regions, Ms Nunes gathered information from the airline industry, from NASA, and from other highly reliable organizations about methods these industries used to perform complex tasks over a long period with minimal errors. Key learnings

## Project Outcomes

Borrowing improvement techniques from industries outside the health care industry is a new approach that has been highly successful at the four PPSP pilot sites in Northern California. The project has been so successful that it was awarded the Lawrence Patient Safety Award for 2004. In addition to meeting the goal of two or three improvements, each site implemented human factors training, Critical Events Team Training, the definition of fetal well-being, multidisciplinary rounds in the la-

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# Special Feature

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bor and delivery unit, and use of SBAR (**S**ituation, **B**ackground, **A**ssessment, **R**ecommendation) as a communication format. The project completed its first replication, and the success rate equaled the pilot sites.

### Why PPSP Has Been Successful

The project's success can be attributed to several factors. First, PPSP adopted a "just culture," which eliminated blame, focused on problems as they arose, and permitted anyone to speak freely without fear of retribution when they have pertinent information to share. This culture has been a cornerstone of the project's success.

Another factor leading to success was that PPSP modeled its values. Throughout its course, the project consistently used human values expressed by several descriptive phrases: "trust and respect of all disciplines plus leadership commitment"; "clear operations plus teamwork and communication"; "conflict resolution plus empowerment"; "innovation"; and "holding the gains."

Wide-ranging institutional support at high levels was imperative because many disciplines are necessarily involved in providing perinatal care that incorporates these values. PPSP received broad sponsorship from committees such as the Perinatal Peer Group,

the Chiefs of Obstetrics, the Chiefs of Anesthesia, the Risk Management Patient Safety Committee, and the Perinatal Council. Because the topics discussed at monthly PPSP team meetings are sensitive, the project was structured under the Quality umbrella for protection at both the local and regional levels. Oversight of the multidisciplinary PPSP team at the medical center is provided by a PPSP Steering Committee that reports to the Quality Committee. At the regional level, a Steering Committee that provides oversight to the entire project. Reports from the medical centers at monthly regional meetings are a means of rapidly sharing best practices and addressing issues at the regional or programwide level.

Leadership commitment also contributed to PPSP's success. To assure that the project would receive the support it needed, medical center leadership and the PPSP principal investigator signed a contract which outlined the responsibilities of both the site and the regional project.

The importance of physician-leaders in any change effort cannot be underestimated, and PPSP is no exception. Physician champions set the tone for change acceptance by other clinicians. The more involved the Chief and the more visible the Chief's leadership, the more readily change was accepted. A corollary to this principle was that the more visible and involved other physician-champions were, the better the change was accepted.

Four-hour Human Factors training was provided by Paul Preston, MD, an anesthesiologist from KP San Francisco Medical Center. The program focused on brief-

### Sidebar 2. The New Culture of PPSP

- Just Culture
- Human Factors techniques:
  - Briefings
  - Assertion
  - Situational Awareness + Recognizing "Red Flags"
- Critical Events Team Training
- Multidisciplinary team to solve problems
- Clear communication:
  - SBAR
  - Escalation
- High-Reliability Perinatal Unit:
  - Definition of Fetal Well-Being
- Communication:
  - Multidisciplinary Rounds

ings, assertiveness, situational awareness (including recognition of "red flags"), human error, and fatigue. Use of this training at the outset—it was required before the first team meeting—has proved crucial for effectiveness of the large multidisciplinary teams, which are formed at each facility. (Team membership was large because the continuum of perinatal care involves so many disciplines.) Each team member was invariably a part of the decision-making process so that the solutions identified could be appropriately implemented.

By exercising local "ownership" of problems—including their identification and solution—the multidisciplinary PPSP team identified two or three changes to be made during the year-long project and how these changes would improve perinatal care. To find and support these solutions, the concept of high-reliability perinatal units was utilized. This con-

Table 1. Kaiser Permanente Northern California Perinatal Patient Safety Project Lawrence Patient Safety Award winners
<b>Principal Investigator, PPSP:</b> Julie Nunes, RN, MS, CPHRM, KP Northern California Director of Risk Management
<b>Co-Investigator, PPSP:</b> Bruce Merl, MD, TPMG Director of Medical/Legal Affairs and Ophthalmology, KP Martinez
<b>Co-Investigator, PPSP:</b> Gabriel J Escobar, MD, Research Scientist, Division of Research
<b>Senior Project Manager, PPSP:</b> Sharon McFerran, RN, PhD, KP Northern California Risk Management
<b>Educator, PPSP:</b> Paul Preston, MD, Assistant Chief of Quality/Anesthesiology, KP San Francisco
<b>Patient Care Services Liaison, PPSP:</b> Lynda Garrett, RN, MPH, Senior Consultant, Northern California Region
<b>Patient Safety Liaison, PPSP:</b> Suzanne Graham, RN, PhD, Patient Safety Practice Leader, KP California Regions
<b>KP Leaders at PPSP Pilot Sites</b>
<b>Hayward:</b> Nancy Corbett, RN, BSN, Perinatal Services Manager, Maternal Child Health
<b>Hayward:</b> Dennis McBride, MD, Obstetrician
<b>Hayward:</b> Stephen Young, MD, FACOG, Chief of Obstetrics & Gynecology, KP Greater Southern Alameda Area; Chair, Obstetrics & Gynecology Chiefs
<b>San Francisco:</b> Linda Kay Deaton, RN, BSN, Assistant Nurse Manager, Perinatal Services
<b>San Francisco:</b> Robin Field, MD, Director, Perinatal Services,
<b>San Francisco:</b> Nancy Taquino, RN, MSN, Maternal Child Director,
<b>Santa Teresa:</b> Elaine Barrett, RN, BSN, Maternal Child Health Manager
<b>Santa Teresa:</b> Joseph Derrough, MD, Obstetrician, Medical Co-Director Patient Safety
<b>Walnut Creek:</b> Jeffrey Maier, MD, Perinatologist
<b>Walnut Creek:</b> Lynne Morrison, RN, BSN, Labor & Delivery Manager
<b>Walnut Creek:</b> Duayna Pucci, RN, MSN, MHA, Director for Maternal Child Health



Figure 1. Critical Events Team Training provides realistic simulations of emergency events in Labor and Delivery. Pictured is an example of a simulation at KP Santa Teresa Medical Center.

cept was based on research done by Eric Knox, MD, and Kathleen Rice Simpson, RN, who published the findings of their review of medical-legal cases from 250 hospitals during a ten-year period.<sup>1-3</sup> Their recommendations were identified and translated into a self-assessment tool to aid PPSP teams in identification of topics for improvement.

To arrive at a functional definition of fetal antepartum and intrapartum well-being, the KPNC Perinatology Peer Group adopted an algorithm that provided specified criteria. The algorithm required that, if these criteria were not met, the clinician had to evaluate fetal status and document either a new plan of care or the reason why the current plan should remain unchanged. This algorithm was supplemented by definitions for-

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mulated by the National Institute of Child Health and Development (NICHD) to standardize terminology between physicians and nurses.

Using maternal and neonatal mannequins, Paul Preston, MD, and Dr McFerran developed Critical Events Team Training in which labor and delivery events were realistically simulated. Participants included everyone who would normally be involved in these events (Figure 1). Each simulation was videotaped, and the videotape was used for the debriefing discussion with event participants. The main focus of the debrief was placed on system and communication issues and not on the individual. To ensure that no part of the videotape would be used inappropriately, it was erased immediately upon completion. Problems

that needed to be addressed were documented and referred to the PPSP team.

A critical component to the success of PPSP was a dedicated project manager. Her responsibilities included facilitating PPSP team and steering committee meetings, keeping the teams focused, and providing them with tools and training. A primary benefit from this position was that information was shared rapidly between KP facilities.

### Implications for the Future

In addition to two or three improvement projects at each site, the scores from the perinatal version of the Safety Attitudes Questionnaire survey was used as a short-term measure of success.<sup>4</sup> The survey was administered to all KPNC perinatal units in 2002 to obtain baseline data and was conducted again in 2003. The 2003 survey scores (of four out of five dimensions of the SAQ) at all KPNC perinatal sites, showed statistically significant improvement. Furthermore, the improvement at the four pilot sites was even more dramatic than the non-pilots.

Long-term measures have been identified and are being tracked. However, because adverse events in obstetrics are extremely rare, approximately three to five years of ongoing monitoring will be required to collect sufficient data to verify whether trends in such measures have been affected by the project. These data will be of three types: 1) "failure to rescue" rates (developed by Gabriel J Escobar, MD, Divi-

sion of Research) of specific maternal and neonatal clinical outcomes that may in some respects reflect "near miss" situations in obstetric practice; 2) a declining trend in the number of medical-legal claims; and 3) improved customer satisfaction with the labor and delivery experience, as measured by scores on the Picker Patient Experience Questionnaire.<sup>5</sup> ♦

### Acknowledgments

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### References

1. Knox GE, Simpson KR, Garite TJ. High reliability perinatal units: an approach to the prevention of patient injury and medical malpractice claims. *J Healthc Risk Manag* 1999 Spring;19(2):24-32.
2. Simpson KR, Knox GE. Perinatal teamwork: turning rhetoric into reality. In: Simpson KR, Creehan PA, editors. *Perinatal nursing*. 2nd edition. Philadelphia: Lippincott; 2001. p 53-67.
3. Simpson KR, Knox GE. Adverse perinatal outcomes. Recognizing, understanding & preventing common accidents. *AWHONN Lifelines* 2003 Jun-Jul;7(3):224-35.
4. Sexton JB, Klinect JR. The link between safety attitudes and observed performance in flight operations. In: *Proceedings of the 11th International Symposium on Aviation Psychology*. Columbus (OH): Ohio State University; 2001. p 7-13.
5. Jenkinson C, Coulter A, Bruster S. The Picker Patient Experience Questionnaire: development and validation using data from in-patient surveys in five countries. *Int J Qual Health Care* 2002 Oct;14(5):353-8.