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President's Message

*Mark Zakowski, MD, FASA
Cedars-Sinai Medical Center
Los Angeles, CA*



Staying Relevant, Advancing Clinical Care, Thriving

Do you want to stay relevant, advance your clinical care, and thrive in the future? Belong to SOAP! Great changes in the practice of medicine, obstetric anesthesia and the perceived value of your services are occurring. We have thankfully moved beyond the technical aspects of providing labor analgesia, successfully reduced maternal mortality, and are focusing on improving peri-delivery outcomes, examining the longer-term benefits of anesthetic techniques, and how to thrive in the era beyond fee for service – into ACOs and bundled payments. Have you adopted 'Enhanced Recovery' protocols yet? "What we don't know is what usually gets us killed," Petyr Baelish (Game of Thrones). No worries, SOAP is here for you!

Staying relevant

How do you stay relevant to your practice, your patients and your hospital? We collaborate to improve maternal and neonatal outcomes in the short and long term. Techniques evolve to maximize pain relief and yet minimize chances of opioid tolerance and addiction. We have known for a decade that higher pain the first day after delivery increases chances for chronic pain and post-partum depression. (Pain 2008:140:87) SOAP provides lectures on a broad array of topics and has now developed a template for Enhanced Recovery after Cesarean (due late March 2019). At the SOAP annual meeting, participate in a workshop on ultrasound for peripheral blocks and consider using point of care ultrasound to qualitatively assess LV volume during hemorrhage. Literature/practice alert: Expect more 39-week elective inductions of labor in low-risk nulliparous women since publication of the ARRIVE trial (NEJM 2018:379:513). As a secondary consequence, some obstetricians are feeding their patients; SOAP appointed a task force to exam this issue.

President's Message continued on next page

Advancing Clinical Care

SOAP strives to educate all providers of obstetric anesthesia and to advance the clinical care and pregnancy-related outcomes of women and their neonates. We are here to help you! The SOAP Annual Meeting 2018 included a very popular Clinical Track lectures on Saturday, which will be repeated in 2019. The SOAP website now has key lectures in the member's area available for viewing.

SOAP developed clinical guidelines and statements for your use on Anesthetic Management of Pregnant women receiving anticoagulants for VTE (chaired by Lisa Leffert, President-Elect) and Enhanced Recovery after Cesarean (chaired by Laurent Bollag & Mohamed Tiouririne), with more in development.

The SOAP Center of Excellence designation was created to encourage and acknowledge those hospitals that have incorporated best practices for Labor and Delivery staffing, services, protocols, education and institutional support. The SOAP effort has been quite large, with 48 institutions applying in our first year, led by and special thanks to Brendan Carvalho, Immediate Past President. Other institutions have queried SOAP on how to apply and what the criteria are – as the Center of Excellence designation not only acknowledges significant work and clinical best practices, but may also offer hospitals significant marketing and potential negotiating advantages.

Thriving!

SOAP serves you, our colleagues and members. The SOAP website has undergone many enhancements, with guidelines, statements, videos of lectures – many thanks to the Media Committee (Chair Heather Nixon, Thomas Klumpner, Richard Month). SOAP provides free membership to anesthesiology residents, to help provide content and context for obstetric anesthesia training and education. We have expanded to include cutting edge science as well as tips for practices. With mega-mergers in the health care field (e.g. CVS-Aetna), creation of hospital mega-systems, and value based/bundled payments – SOAP provides you with critical education on clinical best practices and how to increase your perceived value to key stakeholders.

Help SOAP continue to build and provide you with an ever-increasing wealth of resources and guidance. Please contribute to the [SOAP Endowment Fund](#) – 501C charity – so we can have best practices, best science, best education – to improve the outcomes of women and their neonates!

As a society, SOAP has had a great year. The 2018 annual meeting in Miami was a huge success with record attendance of over 870. With meeting success and costs highly variable (location, food & beverage costs, e.g. \$100+/urn of coffee), we adopted best practices for governance, including electronic voting, and approved letting the Board vet/select future meeting sites/hotels. I opened up committee memberships to the entire SOAP membership – with increased participation. My sincere Apologies – letters never went out acknowledging such – I will personally do so. SOAP has had many successful collaborations with other organizations including: OAA (speaker exchange), SMFM (advocacy and speaker exchange), ASA Self-Assessment Modules-OB Anesthesia and ABA (MOCA questions). We have elevated and added a critical care education component to SOAP, and planted seeds of change that will benefit the society for years to come – including better focus on budget, fundraising (personal and corporate support for meetings), improved inclusion and diversity of committees and opinions, increased the number of Board meetings from 2 to 4 (added two electronic video board meetings), adopting best practices for society membership and approved having another Strategic Planning meeting in March. SOAP accomplished most of the goals set at the last Strategic Planning session 2 years ago – time to set new goals!

On a personal note, it has been my honor and a pleasure to work with so many bright, enthusiastic board, committee and SOAP members! SOAP has a bright future and we are leading the way to making a difference every day – for our patients and our specialty.

Editor's Corner

Kathleen A. Smith, MD, FASA
University of North Carolina
Chapel Hill, NC



Hello SOAP community! Spring is coming and so is the 51st Annual Society for Obstetric Anesthesia and Perinatology Meeting in Phoenix, Arizona. I look forward to this meeting every year as an opportunity to learn, network and have a great time! Check out the Annual Meeting Update below for a preview of opportunities and sessions new this year. I

hope you will consider attending. In addition, this newsletter features an update on the financial status of SOAP. The Patient Safety and Education Committees review point of care viscoelastic testing in postpartum hemorrhage and the role of high-flow nasal oxygen in pregnancy, respectively. I hope you enjoy this spring edition of the SOAP Newsletter.

Report from the Bylaws Committee: Approval of Proposed Bylaws Amendments

Ted Yaghmour, MD
Northwestern University Feinberg School of Medicine
Chicago, IL



In January 2019, the SOAP Board of Directors proposed four bylaws amendments to the SOAP membership for approval. The Bylaws Committee reports that all four amendments were approved and a revised copy of the bylaws is available for viewing on the SOAP website. Implementation of the changes is under development, including a revision of the Policy and Procedure Manual sections regarding the annual meeting site selection.

Selection of the Annual Meeting Site

The Board of Directors will now select the meeting site based on a set of criteria to help insure success of the meeting in terms of both the educational mission and the society's financial goals. It is the intent of the Board to establish a set of rotating cities that will aid in meeting these criteria. These locations will be selected based on geographic location, membership base in that area, resources available to serve the program needs such as speakers and equipment, and past attendance success. Members are encouraged to propose a 'wild card' location to be considered, which will offer unique advantages to the SOAP meeting. Staff will thoroughly evaluate potential locations and make recommendations to the Board. Locations will be selected prior to the annual meeting three years in advance. The first location selected by the Board will be for 2022.

Selection of the Meeting Host

Meeting hosts will be needed for each meeting to assist the Program Chair with local speakers, resources and information about the area. Meeting hosts are encouraged to run for the position once the annual meeting site is selected. The Meeting Host will be elected at the annual business meeting by a majority vote. It is anticipated that the annual meeting site for 2022 will be selected in March 2019 and a call for Meeting Hosts with knowledge of the location will be sent to the SOAP membership. This position will no longer serve on the SOAP Board of Directors.

Addition of the SOAP Treasurer to the Annual Meeting Program Committee

Because of the financial and strategic importance of the SOAP Annual Meeting, the Treasurer will be a member of the Annual Meeting Program Committee.

As the Bylaws Committee works on the implementation of these changes, we welcome comments from the membership.

SOAP 51st Annual Meeting Update

Lisa Leffert, MD

*President-Elect, Society for Obstetric Anesthesia & Perinatology (SOAP)
Massachusetts General Hospital, Boston, MA*



On behalf of the SOAP Board of Directors and the 2019 Annual Meeting Planning Committee, **we are delighted to invite you to the Society for Obstetric Anesthesia and Perinatology 51st annual meeting at the J.W. Marriott Desert Ridge and Spa in sunny Phoenix, Arizona (May 1st-5th, 2019)**. Bring yourself and your family for the educational getaway, featuring top-notch speakers, and a “free” Friday afternoon!! This meeting is dedicated to ***Improving Maternal Outcomes: High Impact Strategies for Change***, bringing you the latest techniques, guidelines and research through a series of well-known and new panel formats.

Our pre-meeting workshops, which begin on Wednesday morning, offer great opportunities for skill building for any level of training. Hands on workshops feature a wide array of ultrasound applications, including cardiac, gastric, truncal and neuraxial offerings. Also included will be sessions on professional development in leadership, resilience and connection, and team training! Finally, we will sponsor our pre-meeting international symposia as has become a SOAP tradition.

Dr. Carolyn Weiniger will deliver the annual, highly anticipated “What’s New in Obstetric Anesthesia?” Osthimer lecture and Dr. Jose Carvalho will be our honored Fred Hehre lecturer. We will host subject experts to deliver the SMFM: What’s New in Obstetrics Lecture (Dr. Alexandra Hill) and What’s New in Neonatology (Dr. Alan Bedrick). Emerging research will be highlighted in our Gertie Marx competition, Best Paper Session and oral poster presentations. New this year, we present several multi-disciplinary, case-oriented panels to discuss the coordination of care for some of our sickest patients. In our continued role as leaders in opioid sparing pain management, we will be hosting our first-ever joint lecture with ASRA on the role of truncal blocks and our SOAP research hour evaluating the outcomes of care strategies. Our interdisciplinary panel will demystify obstetric maternal levels of care and the SOAP Centers of Excellence and make them relevant to you! Finally, we will have a special guest appearance by Stephanie Arnold, author of the bestselling first-hand account of an amniotic fluid embolus *37 Seconds: Dying Revealed Heaven’s Help*.



This year’s e-poster sessions will be enjoyed during times that do not overlap with major talks, in separate rooms to minimize background noise. There will be a special resident case report poster session early Friday evening, culminating in a resident reception at a local trendy oasis.

For those looking for brief, clinically focused, refresher lectures, join us Saturday May 4th for the ***Clinical Track***. These lectures feature 25 minute overviews of how to treat pregnant patients with Maternal Hemorrhage, Substance Use Disorders, Postdural Puncture Headache and Controversial Topics with Emerging Data.

Trainees can take advantage of our ***“Find a Mentor”*** program where residents can pair with senior SOAP members to learn more about our wonderful specialty.

Lunchtime offers several exciting options this year. Sign up for one of our ***Lunch and Learn*** sessions where you can have a meal while engaging in case-based learning. If you are interested in networking with SOAP Board members and colleagues, sign up for the ***Lunch Around*** in the Stonegrill. Space is limited in these and the other organized lunch options, so be sure to sign up early.

You will have many opportunities to visit with friends and colleagues in Arizona. Friday afternoon will be **FREE** of scheduled lectures so that you can enjoy all that the incredible JW Marriott in Phoenix and the surrounding area has to offer.

51st Annual Meeting Schedule

Wednesday, May 1, 2019

7:30 a.m. - 6:00 p.m.
Registration Hours

8:00 a.m. - 12:00 p.m.
Make or Break Leadership Lessons for Labor and Delivery Workshop
Course Directors: Grant C. Lynde, M.D., M.B.A.; Robert R. Gaiser, M.D.; McCallum R. Hoyt, M.D., M.B.A.; Mahesh Vaidyanathan, M.D., M.B.A., B.S.

8:00 a.m. - 12:00 p.m.
The Use of Ultrasound in Obstetric Anesthesia Workshop: Vascular Access, Neuraxial Anesthesia, TAP Block, Airway and Gastric Assessment
Course Director: Jose C.A. Carvalho, M.D., Ph.D., FANZCA, FRCPC

1:00 p.m. - 5:00 p.m.
Focused Cardiac Ultrasound in the Management of the High Risk Parturient Workshop
Course Director: Laurie A. Chalifoux, M.D.

1:00 p.m. - 5:00 p.m.
Becoming the Best Version of Ourselves: Overcoming Challenges with Resilience and Connection Workshop
Course Director: Grace H. Shih, M.D.

1:00 p.m. - 5:00 p.m.
Obstetric Anesthesia Crisis Resource Management Course
Course Directors: Rebecca D. Minehart, M.D., M.S.H.P.Ed.; Erik M. Clinton, M.D.

1:00 p.m. - 5:00 p.m.
Chinese Symposium on Obstetric Anesthesia
Course Director: Jie Zhou, M.D., M.S., M.B.A.

6:00 p.m. - 8:00 p.m.
Welcome Reception

Thursday, May 2, 2019

6:30 a.m. - 5:00 p.m.
Registration Hours

6:30 a.m. - 7:45 a.m.
Continental Breakfast & Exhibits Open

6:30 a.m. - 7:45 a.m.
Poster Viewing

7:30 a.m. - 7:45 a.m.
Welcome to the 51st Annual Meeting
Lisa R. Leffert, M.D.; Heather C. Nixon, M.D.; Mark I. Zakowski, M.D., FASA

7:45 a.m. - 9:15 a.m.
Gertie Marx Research Competition
Moderator: Philip E. Hess, M.D.

9:15 a.m. - 9:30 a.m.
Distinguished Service Award
Recipient: Richard M. Smiley, M.D., Ph.D.
Presenter: Ruth Landau, M.D.

9:30 a.m. - 10:15 a.m.
Coffee Break & Exhibits

9:30 a.m. - 10:15 a.m.
Scientific Poster Session #1
Moderator Leader: Meredith A. Albrecht, M.D., Ph.D.

10:15 a.m. - 11:15 a.m.
Society for Maternal-Fetal Medicine (SMFM) - What's New in Obstetrics?
Introduction: Lisa R. Leffert, M.D.
Speaker: Alexandria J. Hill, M.D.

11:15 a.m. - 12:15 p.m.
Panel - The Role of Truncal Blocks to Optimize Cesarean Delivery Analgesia
Moderator: Ruth Landau, M.D.
Speakers: Brendan Carvalho, M.B.B.Ch., FRCA, M.D.C.H.; Ki Jinn Chin, FRCPC

12:15 p.m. - 1:15 p.m.
Lunch On Your Own

12:15 p.m. - 1:15 p.m.
Problem-Based Learning Discussion - Management of the Obese Parturient
Speakers: Jaime Daly, M.D.; Vilma E. Ortiz, M.D.

12:15 p.m. - 1:15 p.m.
Rivanna Lunch Session: Neuraxial Placements in Challenging Patient Populations Using the Accuro® Handheld Spinal Navigation Device (Non-CME Session)
Speakers: Brendan Carvalho, M.B.B.Ch., F.R.C.A., M.D.C.H.; Peter Pan, M.D., M.S.E.E.; Rebecca Minehart, M.D., M.S.H.P.Ed.

12:15 p.m. - 1:15 p.m.
Lunch Around - Sign up at Registration Desk, Space Limited to 20.

1:15 p.m. - 2:55 p.m.
Scientific Poster Session #2
Moderator Leaders: Rachel M. Kacmar, M.D.; Elizabeth Lange, M.D.

1:15 p.m. - 2:55 p.m.
Visit Exhibits

3:00 p.m. - 4:00 p.m.
Research Hour - Defining, Evaluating and Influencing Recovery After Cesarean Delivery
Moderator: Brendan Carvalho, M.B.B.Ch., FRCA, M.D.C.H.
Speakers: Ashraf S. Habib, M.B., B.Ch., M.Sc., M.S.N., FRCA; Pervez Sultan, M.D., M.B., Ch.B., FRCA

4:00 p.m. - 5:00 p.m.
Oral Presentations I
Moderator: Michaela K. Farber, M.D., M.S.; Grace Lim, M.D., M.Sc.

Friday, May 3, 2019

6:15 a.m. - 7:15 a.m.
Fitness Activity: Boot Camp

6:30 a.m. - 5:00 p.m.
Registration Hours

6:30 a.m. - 7:30 a.m.
Continental Breakfast & Exhibits Open

6:30 a.m. - 7:30 a.m.
Poster Viewing

7:25 a.m. - 7:30 a.m.
Opening Remarks
Lisa R. Leffert, M.D.

7:30 a.m. - 9:00 a.m.
Best Paper Session
Moderators: Jill M. Mhyre, M.D.; Arvind Palanisamy, M.B., B.S., M.D., FRCA

9:00 a.m. - 10:30 a.m.
Scientific Poster Session #3
Moderator Leaders: Melissa E. Bauer, D.O.; Allison J. Lee, M.D., M.B., B.S.

9:00 a.m. - 10:30 a.m.
Coffee Break & Exhibits

10:30 a.m. - 12:00 p.m.
Interdisciplinary Panel - Cardiac Disease
Moderator: Katherine W. Arendt, M.D.
Speakers: Joan E. Briller, M.D.; Alexandria J. Hill, M.D.; Marie-Louise Meng, M.D.

12:00 p.m. - 12:15 p.m.
American Society of Anesthesiologists (ASA) Update
Introduction: Mark I. Zakowski, M.D., FASA
Speaker: Linda J. Mason, M.D., FASA, ASA President

12:20 p.m. - 1:30 p.m.
SOAP Annual Business Meeting and Elections
Lunch will be provided.

1:30 p.m.
Free Afternoon

5:00 p.m. - 7:00 p.m.
Resident/Fellow Case Presentations
Moderator Leader: Jacqueline M. Galvan, M.D.

7:00 p.m. - 9:00 p.m.
Fellows' and Residents' Reception
(By Invitation Only, Offsite Location)

51st Annual Meeting Schedule continued on next page

51st Annual Meeting Schedule cont.

Saturday, May 4, 2019

6:45 a.m. - 7:45 a.m.

Fitness Activity: Foam Rolling/Stretch

7:00 a.m. - 5:15 p.m.

Registration Hours

7:00 a.m. - 8:30 a.m.

Continental Breakfast & Exhibits

7:00 a.m. - 8:30 a.m.

Poster Viewing

7:55 a.m. - 8:00 a.m.

Opening Remarks

Lisa R. Leffert, M.D.

8:00 a.m. - 9:00 a.m.

Scientific Poster Summaries

*Moderators: Paloma Toledo, M.D., M.P.H.;
Hans P. Sviggum, M.D.*

8:00 a.m. - 8:25 a.m.

Obstetric Hemorrhage

*Speaker: Alexander Butwick, M.B.B.S.,
M.S., F.R.C.A.*

8:30 a.m. - 8:55 a.m.

Drug Shortages: What Can I Do For My Patients?

Speaker: Heather C. Nixon, M.D.

9:00 a.m. - 10:00 a.m.

Special Lecture: Patient Perspectives

*Moderator: May C. Pian-Smith, M.D., M.S.
Speakers: Stephanie Arnold, Author and
Amniotic Fluid Embolism Survivor; Tracey
M. Vogel, M.D.*

10:00 a.m. - 10:30 a.m.

Coffee Break & Exhibits

10:00 a.m. - 10:30 a.m.

Poster Viewing

10:30 a.m. - 11:30 a.m.

Gerard W. Ostheimer Lecture

What's New in Obstetric Anesthesia?

*Introduction: Ashraf S. Habib, M.B., B.Ch.,
M.H.Sc., FRCA*

Speaker: Carolyn Weiniger, M.B., Ch.B.

11:30 a.m. - 12:30 p.m.

What's New in Neonatology?

Introduction: Joy L. Hawkins, M.D.

Speaker: Alan D. Bedrick, M.D.

11:30 a.m. - 11:55 a.m.

**Management of Neuraxial Labor
Analgesia**

Speaker: Kenneth E. Nelson, M.D.

12:00 p.m. - 12:25 p.m.

Substance Use Disorder

Speaker: Britany L. Raymond, M.D., B.S.

12:30 p.m. - 1:30 p.m.

**Lunch Lesson: Adjuncts in Postpartum
Hemorrhage - How Do We Use Them?**

*Speakers: Alexander Butwick, M.B.B.S.,
M.S., F.R.C.A.; Jennifer E. Hofer, M.D.*

1:30 p.m. - 2:30 p.m.

**Fred Hehre Lecture - Dogmas in
Obstetric Anesthesia: The Balance
Between Evidence, Common Sense,
Habit and Fear**

*Introduction: Cristian Arzola, M.D., M.Sc.
Speaker: Jose C.A. Carvalho, M.D., Ph.D.,
FANZCA, FRCPC*

2:30 p.m. - 3:00 p.m.

Coffee Break & Exhibits

2:30 p.m. - 3:00 p.m.

Poster Viewing

3:00 p.m. - 4:00 p.m.

Oral Presentations II

*Moderators: Emily E. Sharpe, M.D.;
Cynthia A. Wong, M.D.*

3:00 p.m. - 3:25 p.m.

Post Dural Puncture Headache

Speaker: Barbara M. Scavone, M.D.

3:35 p.m. - 4:00 p.m.

My Two Cents - Controversial Topics

Speaker: Lawrence C. Tsen, M.D.

4:00 p.m. - 5:15 p.m.

**Why Should You Care About Maternal
Levels of Care?**

*Moderator: Brian T. Bateman, M.D., M.Sc.
Speakers: Brendan Carvalho, M.B.B.Ch.,
FRCA, M.D.C.H.; Sarah J. Kilpatrick, M.D.,
Ph.D.; Jamie D. Murphy, M.D.*

6:00 p.m. - 10:00 p.m.

Banquet

(Offsite Location)

High & Rye

5310 E. High St. #100
Phoenix, AZ 85054

Sunday, May 5, 2019

7:30 a.m. - 11:45 a.m.

Registration Hours

7:00 a.m. - 8:30 a.m.

Continental Breakfast

7:55 a.m. - 8:00 a.m.

Opening Remarks

Lisa R. Leffert, M.D.

8:00 a.m. - 9:30 a.m.

Best Case Reports - You Did What?

Moderator: Klaus Kjaer, M.D., M.B.A.

*Panelists: Jeanette R. Bauchat, M.D., M.S.;
Laurent A. Bollag, M.D.; Jean M. Miles,
M.D.*

9:30 a.m. - 9:35 a.m.

2020 Annual Meeting Preview

*Speakers: Ruth Landau, M.D., 2020
Program Chair; Ronald B. George, M.D.,
FRCPC, 2020 Meeting Host*

9:35 a.m. - 10:00 a.m.

Coffee Break

10:00 a.m. - 11:00 a.m.

**It's All in Her Head: Approaches to the
Anesthetic Management of Pregnant
Women with Intracranial Disease**

*Moderator: Heather C. Nixon, M.D.
Speakers: Mateja De Leonni Stanonik,
M.D., M.A., Ph.D.; Guy Edelman, M.D.;
Lisa R. Leffert, M.D.;*

11:00 a.m. - 12:00 p.m.

Faculty Case Report Posters

*Moderator Leader: Roulhac D. Toledano,
M.D., Ph.D.*

12:00 p.m.

Adjournment

Treasurer's Report

Klaus Kjaer, MD, MBA
Weill Cornell Medical College
New York, NY



I am pleased to present this Treasurer's report for our society, reflecting our financial status as of the end of 2018. To present a complete picture of the Society's finances, this report will include both Non-Endowment and Endowment Income/Expenses (Figure 1), and will look at Operating and Investment Income separately (Figure 2). The source of financial data is the Combined Financial Statements (CFS) from our accounting firm's annual audit. As of this writing, the 2018 audit has not yet been completed, so all 2018 data comes from QuickBooks, the day-to-day financial software used by our management team.

SOAP finished 2018 with its strongest operating performance since 2014, although overall performance was down from 2017 due to the worst performance of the stock market in the last 5 years (Figure 2). SOAP's conservatively invested funds, however, performed better than the S&P, losing only 4.2% of their value compared to 6.2% for the S&P. The strong operating performance was driven by record Member Dues revenue of \$198,115 (Figure 1) and the most successful Annual Meeting ever, the 50th Annual Meeting in Miami, with net income of \$224,175 (Figure 3).

Grant expenses decreased in 2018 as part of SOAP's effort to grow Endowment assets prior to

instituting new programs (Figure 1). Individual donations to the SOAP Endowment, at \$12,358, were the highest in the last 5 years, with donations from the Board of Directors more than doubling. Please donate to the SOAP Endowment Fund! Overall, SOAP's Combined Net Assets grew 2.0% in 2018, to \$3,322,522 (Figure 4). This represents an all-time high for SOAP.

SOAP continued implementing its plan, approved by the Board of Directors, to shift \$200,000 cash into a 70/30 allocation of 70% stocks and 30% bonds over two years in order to generate additional investment income going forward. As a result, cash holdings in its Non-Endowment investment account decreased from \$441,806 at the end of 2017 to \$331,443 at the end of 2018.

SOAP's Board of Directors continues to streamline the budgeting process for both the Endowment and Non-Endowment to target a steady increase in assets, both by controlling expenses and exploring options for alternative sources of revenue. This will allow for continued support of SOAP's strategic plan as its mission expands to include a broader platform for promoting the highest standards of clinical practice. SOAP is better positioned than ever for the financial growth required to broaden its scope and take on new mission-aligned opportunities.

Treasurer's Report continued on next page

Figure 1 Combined Income/Expenses 2018 (QuickBooks)
Actual v Budgeted

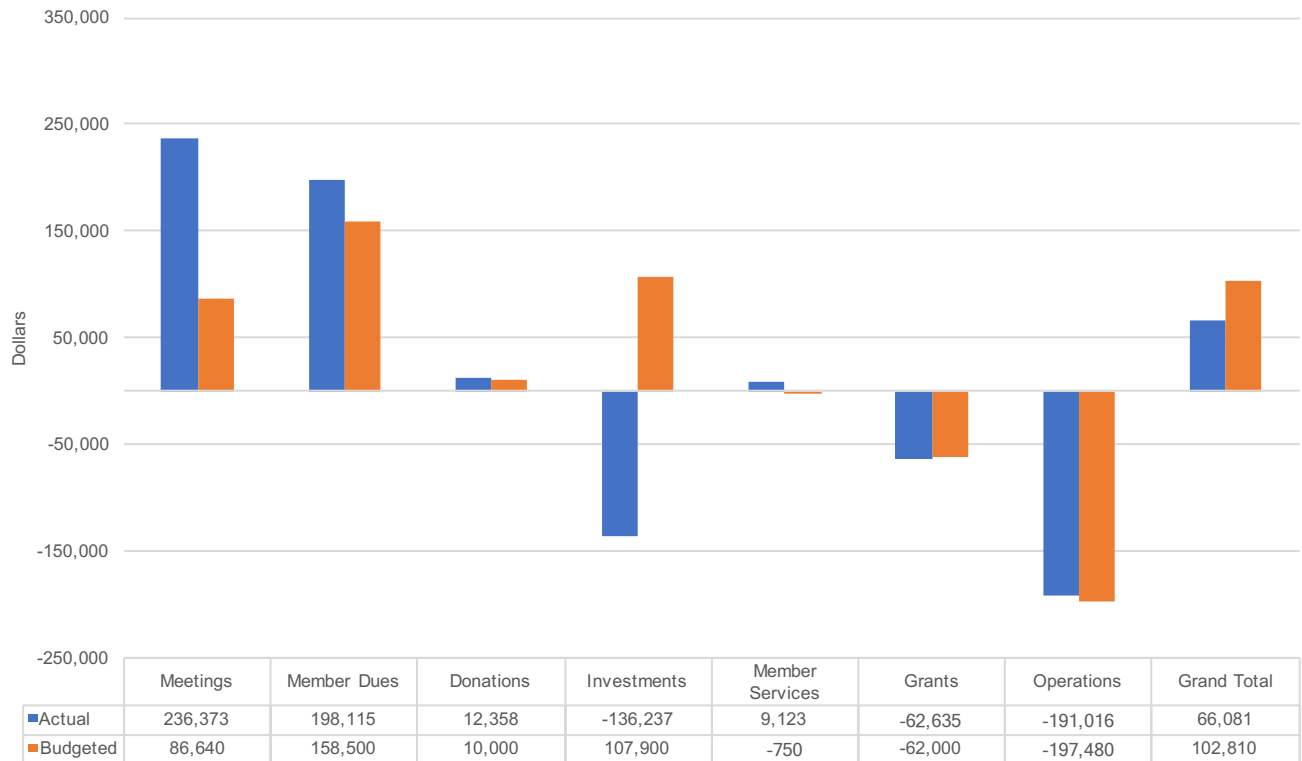


Figure 2 Combined Operating v Investment Income (Quickbooks)
2014-2018

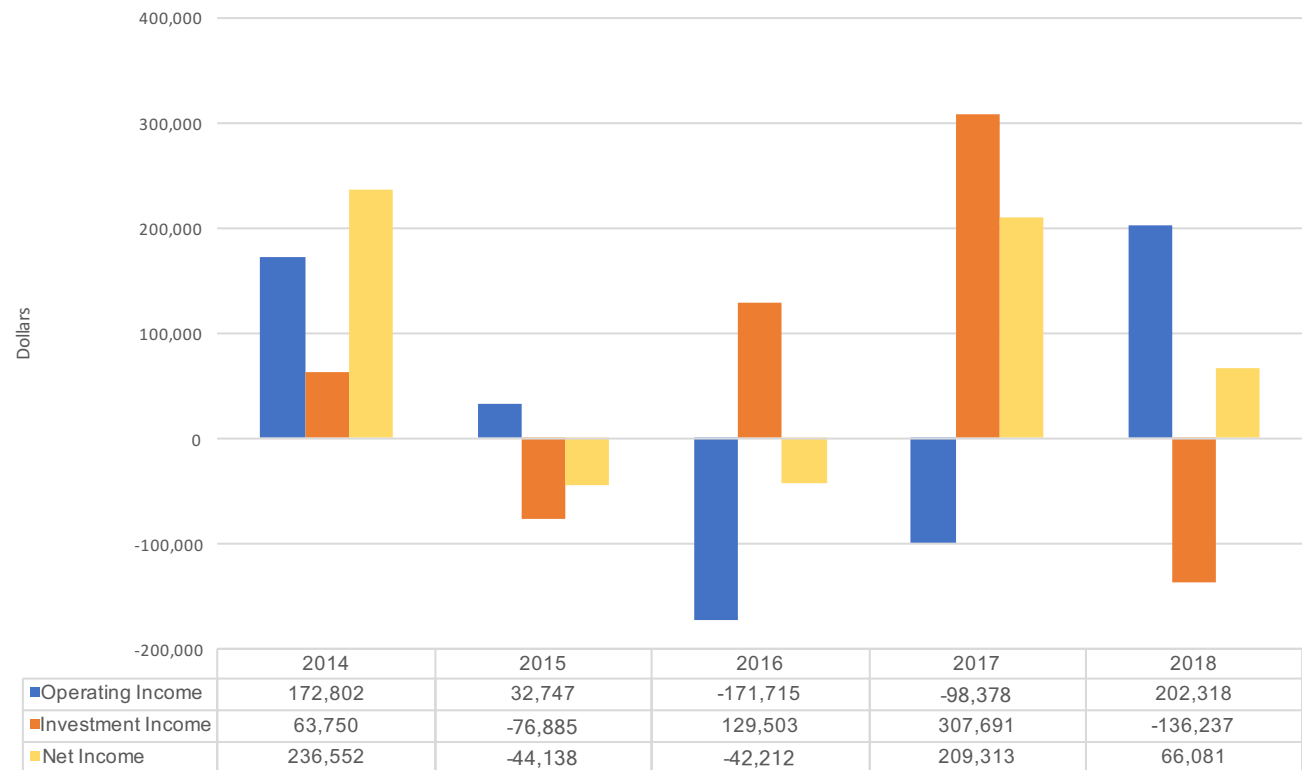


Figure 3

Meeting Profitability (QuickBooks)
2014-18

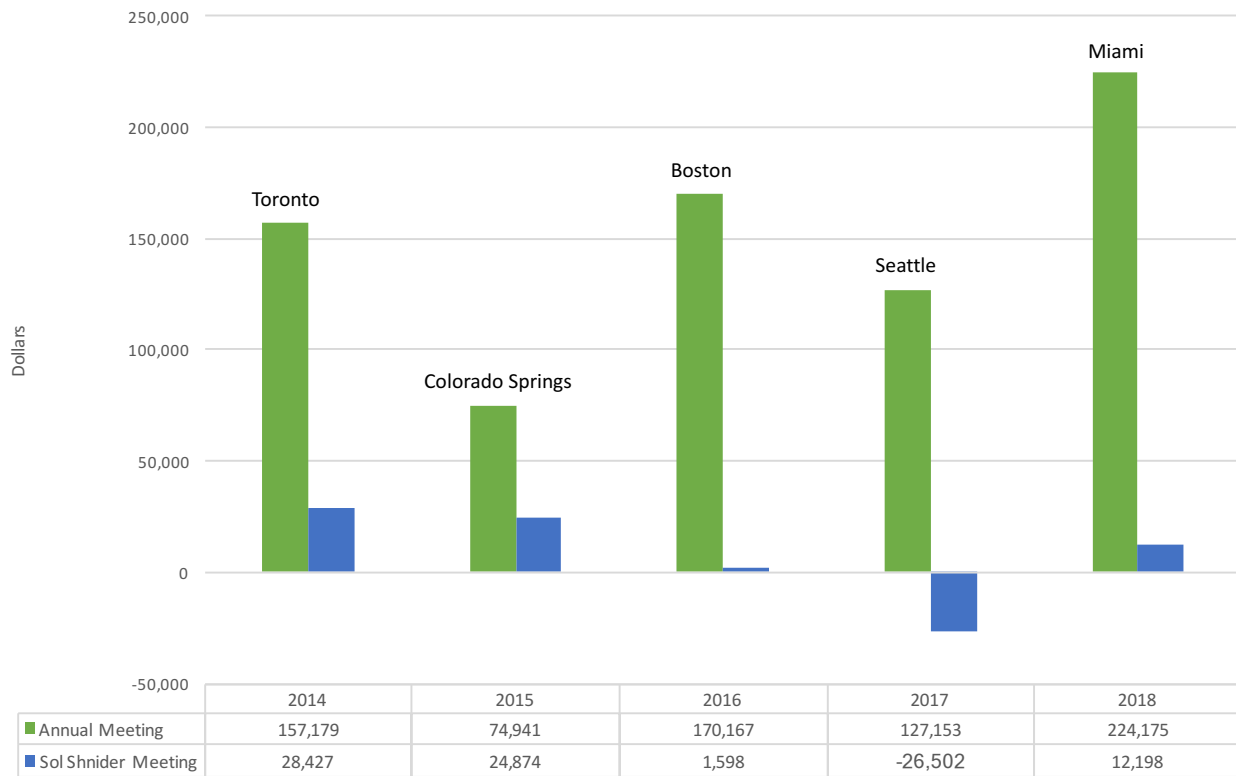


Figure 4

Combined Net Assets (CFS)
2013-18



Education Committee: *High-Flow Nasal Oxygen in Pregnant Patients for Pre-Oxygenation and Apneic Oxygenation: Yea, or Nay?*

Sonal Zambare, MD
Baylor College of Medicine
Houston, TX

David J Berman, MD
Johns Hopkins University School of Medicine
Baltimore, MD

Uma Munnur, MD
Baylor College of Medicine
Houston, TX

Ashutosh Wali, MD
Baylor College of Medicine
Houston, TX

Edited by Grace Lim, MD, MS
University of Pittsburgh,
Magee-Womens Hospital
Pittsburgh, PA



High-flow nasal cannula (HFNC) is an oxygenation/ventilation system consisting of an oxygen inlet, air/oxygen blender, humidifier, unidirectional circuit and flexible, soft silicone nasal prongs with adjustable flow rate up to 60 L/min, allowing flow-dependent FiO₂. It increases oxygenation and carbon dioxide clearance during apnea, while providing a small amount of continuous positive airway pressure (CPAP). These interventions decrease work of breathing, increase passive oxygenation and carbon dioxide clearance, and allow for prolonged periods of apnea during procedures or airway management attempts.

Key Points

- HFNC is an oxygenation/ventilation system that shows clinical utility in critical care and emergency department settings
- HFNC in pregnant women is limited by lack of data on safety and efficacy; it may have a role in non-anesthetized, hospitalized pregnant women with neuromuscular or pulmonary conditions
- HFNC is inferior to standard facemask for pre-oxygenation in pregnancy; HFNC aspiration risks during induction of general endotracheal anesthesia may limit its use in this population

Evidence and Application

Humidified oxygen improves mucociliary clearance and ventilation-perfusion (V/Q) mismatch by preventing atelectasis.¹ Positive pressure stents the upper airway open. Many studies on HFNC have been performed in a wide variety of clinical scenarios including endoscopic procedures, management of hypoxemia in ICU, awake craniotomies, pre-oxygenation prior to airway manipulation, and apneic oxygenation.²⁻⁷ However, in pregnancy, few studies have evaluated pre-oxygenation efficacy, and no studies have evaluated HFNC for apneic oxygenation. The feasibility and justifiability of a study on the latter may preclude rigorous studies during pregnancy.

Side Effects/Adverse Events

HFNC disadvantages include abdominal distension, aspiration, barotrauma and delayed recognition of respiratory failure. Obviously, the benefit of improved oxygenation must be weighed against these risks. The risk for aspiration is of particular concern in pregnancy. Delayed recognition of respiratory failure could have fetal-neonatal consequences.

Potential Role in Obstetrics

Very few studies of HFNC focused on pregnancy have been conducted. Anatomic and physiologic changes of pregnancy limit ability to fairly extrapolate from studies in non-obstetric populations. Most cesarean deliveries are performed under neuraxial anesthesia; general anesthesia is used predominantly in emergencies.⁸ Decreased FRC, increased metabolic demands, airway edema and increased aspiration risk make managing the pregnant airway more difficult. Pregnancy decreases time-to-desaturation after apnea during induction, making adequate pre-oxygenation and denitrogenation critical. Further, if the initial intubation attempt is unsuccessful, rapid desaturation during apnea can lead to maternal and fetal catastrophe. HFNC has the potential to provide adequate pre-oxygenation prior to induction and apneic oxygenation after neuromuscular blockade without hindering intubation attempts. However, the risk for regurgitation and pulmonary aspiration may limit HFNC in this population, given well-known risks of maternal morbidity and mortality associated with this complication.

Improvements to mucociliary clearance, V/Q mismatch, and CPAP may benefit pregnant women with obstructive sleep apnea (OSA) on the labor unit as an alternative to tight-

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fitting, conventional CPAP. ETCO₂ can be monitored with a non-rebreathing mask, used alongside HFNC (Figure). In our experience, we have used HFNC in non-anesthetized, morbidly obese women with OSA during vaginal trial of labor, and in women with neuromuscular disorders (e.g. ALS, myasthenia gravis).

Although HFNC has not been completely evaluated in pregnant women for pre-oxygenation, one pilot study examined end-tidal oxygen via facemask after breathing HFNC for three minutes. Only 60% of women achieved end-tidal oxygen >90% after this period.⁹ In another study, pre-oxygenation endpoints in pregnancy were worse with HFNC compared to standard facemask.¹⁰ Given the choice, pregnant women greatly preferred the enhanced comfort of HFNC, but current data suggests that standard facemask remains superior to HFNC for pre-oxygenation and denitrogenation in pregnancy.

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Figure. Setup for HFNC. HFNC can be used with non-rebreather face mask to measure ETCO₂. HFNC manufactured with the ability to measure ETCO₂ are reported to be in development.

Patient Safety Committee: *Utilization of Point-of-Care Viscoelastic Testing for the Management of Postpartum Hemorrhage: A Survey of Obstetric Anesthesiologists*

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The use of point-of-care viscoelastic testing (PCVT) for goal-directed transfusion is associated with reduced blood loss, lower transfusion rate, and lower morbidity and mortality in non-obstetric patients.^{1,2} Although data is sparse, there is increasing evidence for similar benefits in obstetrics. Retrospective studies comparing PCVT and goal-directed transfusion algorithms to empiric transfusion strategies during postpartum hemorrhage (PPH) show a reduction in blood loss and blood product use, lower rates of hysterectomy, and shorter ICU and hospital lengths of stay.³⁻⁵

Expert panels and guidelines recommend coagulation assessment at the onset of PPH and then at regular intervals (q30-60 minutes) until bleeding is controlled.^{6,7} Standard laboratory tests (prothrombin time (PT), activated partial thromboplastin time (APTT), platelet count, Clauss serum fibrinogen) have traditionally been used to assess coagulation. The advantage of standard testing is widespread availability and well-regulated quality control. However, slow turnaround time can preclude their utility during acute hemorrhage. In addition, some standard coagulation tests, such as PT and APTT, are poor predictors of bleeding severity.^{8,9}

Peripartum reference values for thromboelastography (TEG) and rotational thromboelastometry (ROTEM) have been published.¹¹⁻¹⁴ ROTEM Fibtem amplitude at 5 and 10 minutes correlates with serum Clauss fibrinogen,¹⁴⁻¹⁶ and can be used to predict progression to severe hemorrhage similar to Clauss fibrinogen.^{9,17-19} Lower Fibtem values (Fibtem A10 < 12) are associated with the need for an invasive procedure, higher estimated blood loss, red blood cell transfusion, and longer ICU stay.¹⁹ ROTEM Extem and Fibtem values can be determined within 10 minutes, allowing for real-time clinical decision making. The rapid result time, correlation with fibrinogen levels, and association with hemorrhage severity make Fibtem a key element in goal-directed transfusion algorithms.

We surveyed eleven obstetric anesthesiologists, including the authors, who utilize PCVT regarding their practice patterns (Table 1). Notably, seven out of eleven have incorporated PCVT into their PPH algorithm but only four have formally evaluated the impact of PCVT on their transfusion practices.

Of these four, all report favorable outcomes including reduced red blood cell transfusion and fewer transfusion-related complications. The most commonly reported challenges of initiating PCVT were high cost and demonstration of value. Interestingly, institutions reported variable PCVT-derived triggers for fibrinogen concentrate and plasma transfusion, with four respondents indicating undefined PCVT numerical triggers.

There are no standard guidelines on hemostatic management using PCVT in obstetrics. Expert panels including the Association of Anaesthetists of Great Britain and Ireland Obstetric Anaesthetists' Association endorse the use of PCVT to assess coagulation during PPH.²⁰ Other consensus statements recommend the use of PCVT, when available, in conjunction with standard laboratory testing since there is no high-level evidence on the best strategy.^{6,21} Further studies are indicated to assess the impact of PCVT on PPH outcomes and establish an evidence-based PCVT-driven transfusion algorithm for parturients. Initiating PCVT on your L&D unit requires quality control protocols and training procedures.²¹ Treatment algorithms such as Figure 1 may be helpful, however should be tailored to accommodate local resources and control values. Continued networking, sharing of experiences, and high-quality outcomes research on PCVT for PPH will refine its use and may enhance transfusion management of PPH.

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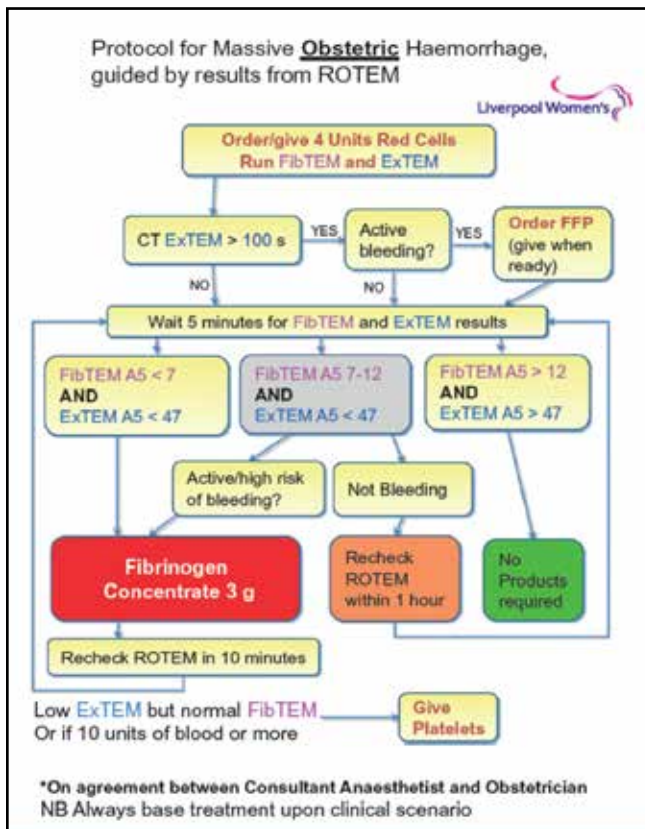


Figure 1. Obstetric Hemorrhage Using ROTEM Guidance.

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|---|--|---------------------------------------|---|------------------------------------|--|----------------------------|--------------------------------|---|---|---|--------------------------------|
| Survey Respondent | Joanna Kountanis | Daniel Katz | Michaela Farber | Ruthi Landau | Roger Browning | Alex Butwick | Bhavani Kodali | John Markley | Shuba Mallalah | Christine McKenzie | Jon Waters & Grace Lim |
| Deliveries/y | 4600 | 8000 | 7000 | 4900 + 2000 | 6000 | 4200 | 2200 | 1200 | 8500 | 4000 | 9500-10,000 |
| TEG or ROTEM? | ROTEM | ROTEM | ROTEM | ROTEM | ROTEM | TEG | Both | ROTEM | ROTEM | TEG | TEG |
| Clinical, research, both? | Both | Both | Both | Clinical | Both | Clinical | Both | Clinical | Both | Clinical | Both |
| Start date for OB? | 2016 | 2017 | 2016 | 2018 | 2011 | N/A | N/A | 2013 | 2012 | 2012 | 2005 |
| Part of a PPH Bundle? | No | No | No | No | Yes | No | No | No | Yes | No | No |
| Part of a transfusion algorithm? | Yes | Yes | Yes | Yes | Yes | No | Yes | Yes | Yes | No | Yes |
| Location of machine | L&D | Main/Cardiac OR | L&D | Main OR | L&D and Blood bank | Hematology lab | Hematology Lab | Main OR | L&D | Hematology lab | L&D |
| Who runs it? | Technician | Perfusionist Or Anes. MD | Anes. MD | Liver transplant or OB Anes. MD | Technician or Anes. MD | Technician | Technician | Anes. MD and CRNA | Anes. MD | Technician | Technician or Anes. MD |
| PCVT trigger for fibrinogen therapy? | Fibtem A10 < 12mm | Fibtem A10 < 12 mm | Fibtem A10 < 12mm | undefined | Fibtem A5 < 10 mm | Alpha < 60 degrees | Fibtem A10 10-13mm | Fibtem A10 < 8mm | Fibtem A5 < 7mm; 7-12 mm if ongoing PPH | undefined | Abnormal + clinical suspicion |
| PCVT trigger for giving plasma? | Extem CT ≥ 80 sec | Extem CT ≥ 80 sec | Extem CT > 80 sec | undefined | Extem CT > 90 sec if Fibtem is normal | R time > 8 min | N/A | Extem CT > 80 sec | Extem CT > 100 sec | undefined | Abnormal + clinical suspicion |
| Have you evaluated the impact of PCVT on your L&D transfusion practices? | Yes; Lower: FFP, platelets, cryo Higher: FIB | No | No | No | Yes; Lower: FFP, PRBC, Major transfusion, TACO, TRALI Higher: TXA, Cryo, FIB | No | No | No | Yes; Lower: PRBC, FFP, Platelets, TACO | No | Yes; Lower: PRBC |
| Use of PCVT on L&D other than for PPH mgmt? | No | Yes | Yes | No | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Do you use cryo, FIB, or both? | FIB but Cryo is available | Cryo | Both | Both Cryo > FIB | Both Cryo > FIB | FIB but Cryo is available | Cryo | Both | FIB | Cryo | Both Cryo > FIB |
| Do other clinical services utilize PCVT? | Yes; liver, cardiac, peds, ICU, trauma | Yes; cardiac, ICU | No | Yes; liver | Yes; Gyn, Gyn Onc | Yes; cardiac, liver | Yes; available to all services | Yes; available to all services | Yes; Gyn | Yes; liver, cardiac, ICU | Yes |
| What was the biggest challenge in starting your program? | Demonstrating value for the cost of the machine and upkeep | Demonstrating value to administration | Cost of device and reagents, inability for central lab to run the tests | Getting everyone to use it | Results interpretation, getting MDs to trust results | Getting everyone to use it | Unaware of any challenges | Anesthesia vs. pathology to run the tests; cost | Cost | Cost, increasing routine use, staff familiarity | Cost |
| Who maintains your machines/ QC Control? | Anes. technician and Pathology | Perfusion team and main POC lab | Anes. MDs | Liver transplant team | Anes. MDs on L&D, laboratory staff | Laboratory technicians | Laboratory technicians | Anes. MD and CRNA with Biomed support | Anes. MDs | Laboratory technicians | Anes. technicians and MD |
| #specimens/wk on L&D? | 1-5 | 1-5 | 2-3 | 0-1 | 10-15 | 0-1 | 2 | < 1 (about 1 per month) | 7 | < 1 | 4-5 |
| 24/7 Coverage for your device? | Yes | No | No | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| % of L&D faculty able to interpret results? | 100% | 50% | 50% | 25-33% | 90% | 10% | 100% | 100% | 100% | 100% | 100% |



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