**Issues and Barriers to Maternity Anesthesia Care in Hospitals with Low Obstetric Volumes -- the Ontario experience

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- No Disclosures
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Objectives

- Present research related to the Ontario Maternity Anesthesia Experience
  - Low volume (<2000 deliveries) OB centers
  - Larger centers/greater systems issue
- Our recommendations
- Update/Experiences since the study

Background

- Summer 2004, invitation by OMCEP
- Full Report to Ministry of Health & Long-term care, November 2005.
  - http://www.womensresearch.ca/PDF/programs/Maternity%20Anesthesia%20Report_.pdf
  - OMCEP report, Appendix D
- Publication: secondary analysis/ hospitals with low volume deliveries (<2000)
  - Canadian J of Anesthesia 2009

Maternity Services in Ontario

- Childbirth: A leading cause of hospital admission
- Trends: Increasing Urbanization of Low risk Care: (PPPESO 2005)
  - Level 2 & 3 hospitals: > 50% Low risk (PPPESO 2006)
  - Level l Maternity Services Closures smaller communities
  - Maternal choice (PPPESO)
  - Similar issues in BC (CJRM, 2010)

Maternity Services in Ontario

- Supply of Low Risk Maternity Care providers
  - MCP2, OMCEP, Babies Can't Wait
  - Anesthesia??
- System Capacity: future growth
  - 25 year Ontario Ministry of Finance mid-range forecast >32% increase in population
  - 30% increase in the birth rate

Nature of Anesthesia Services

- Medicine, Pharmacology, Physiology, Pathophysiology
- Breadth and span of life:
  - Neonatal to Geriatric Care
- Trauma Team leader
- Cardiac Arrest Team/Team leader
- Operating Room
- Intensive Care
- Radiology suite
- Emergency Ward
- Acute Pain
- Chronic Pain
- Consultation

Maternity Anesthesia Care

- **Operating Room**
  - **Instrumental/Cesarean Delivery/Emergency Hysterectomy/Retained Placenta**
- **Maternal Resuscitation**
- **Neonatal Resuscitation**
- **Critical Care**
- **Consultation**
- **Labor Pain Relief**

Labor & Delivery Contribution by Maternity Provider Type

Anesthesiology/FP Anesthesia

- PPPESO 2006 (Ontario)
  - >32.6 % Essential services (28% C-section; 4.6% Forceps)
  - 59% vaginal births had an epidural
- Combined: Maternity Anesthesia Care > 60% of Women
- Doesn't include other anesthesia services

Primary Maternity Care Providers

- Obstetrics 86% (2006)
- FP 9%
- Midwives 4%

Anesthesia Services Provision

- **Human Resources Shortage**
  - Specialist Anesthesiologists (Byrick, Craig, Ryten)
  - Family Physician Anesthetists
    - 2%(Quebec) -20%(Saskatchewan) Anesthesia Care
    - 80 FTE Anesthesiologists (ACUDA, Ryten)
- Survey FPA, Brown 2005 (n=195, 82% Response)
  - 59% of 128 Ontario hospitals had $\geq$1 FPA
  - FPA are Sole providers in 39% of hospitals
    - Small, rural, rural remote hospitals

Family Physician Anesthesia HR Shortage

- Craig CJA 2002
  - 1986-1996: 32.6% ↓ FPAnesthetists
  - 1995-2000: 22% ↓ FPAnesthetists
    - Cuts to medical school enrollment 1985
    - Loss of re-entry positions for training in Anesthesia 1991
- Average burnout ~ 5 years post training (Seal, CJRM 2001 Physicians)

Demand for Maternity Anesthesia Services

Provincial Demand

- Cesarean Section Rates (PPPESO)
  20%(1998) ➔ 26%(2004) ➔ 28% (2006)
- Labor Epidural rates
  - 59% (2004) ➔ 59% (2006),

Small Community Hospital Demand

- Cesarean Section: 27.5% (2004) ➔ 27% (2006)
- Labor epidural rates small community hospitals
  8.1 %(1998) ➔26 % (2003)

- Lack of labor epidural availability ➔ maternal choice to deliver in urban hospitals (PPPESO, 2004,2005, 2006)

- 34% of Maternity Hospitals without 24/7 C/section coverage

- 40% of these attributed to lack of anesthesia services (OMCEP Hospital survey)

Study Objectives

To explore

- Key issues & barriers to maternity anesthesia care
  - Non-tertiary Ontario obstetric hospitals
  - Special focus: small, rural & rural remote
- Describe Potential solutions

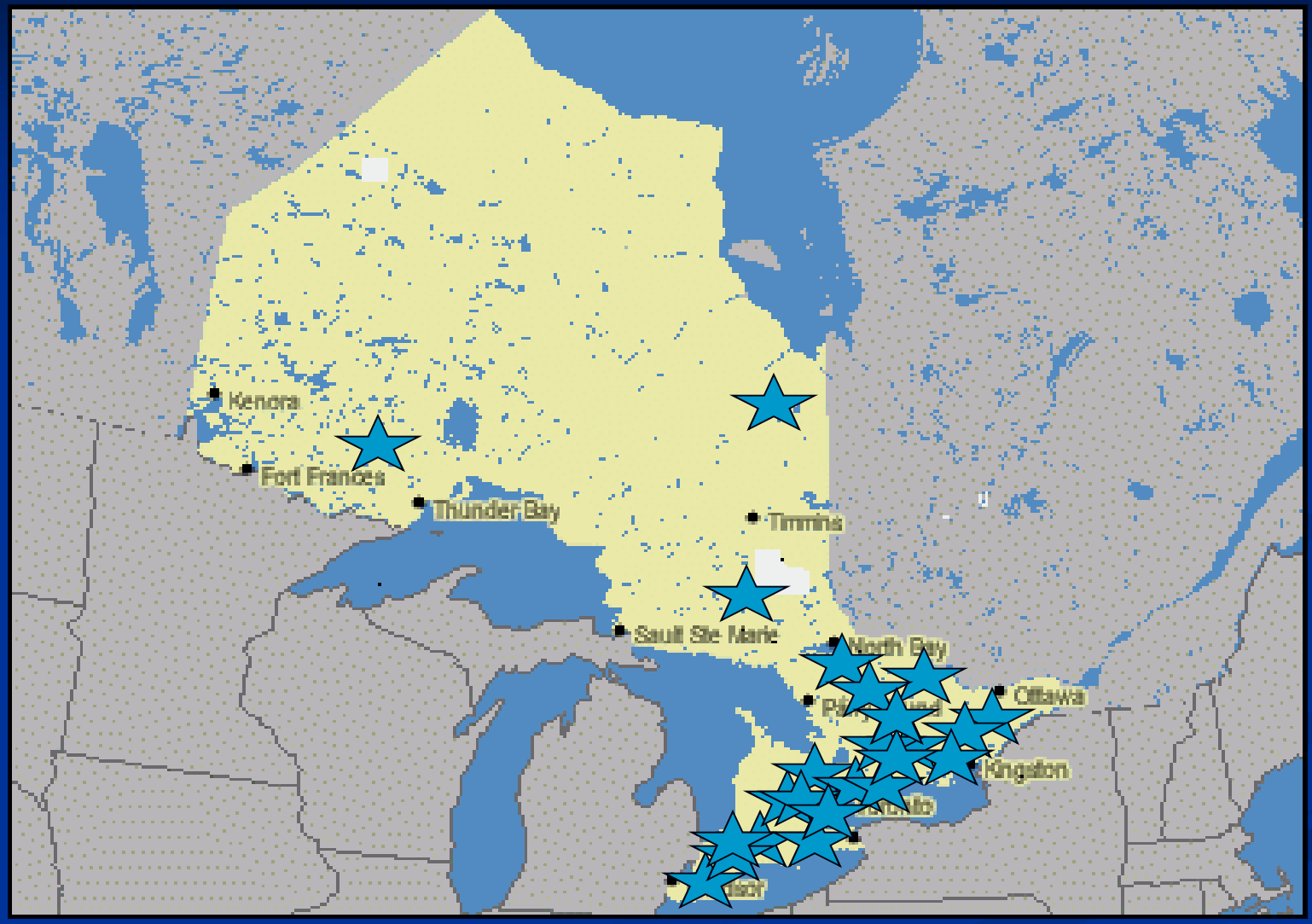
Methods

- Three phase, mixed methods study, standard descriptive qualitative methodology/analysis
- Purposeful Sampling Maternity Anesthesia Leaders undertaken from across all levels of hospital care in all regions of Ontario (n=28)
  - Practice Survey (n=28)
    - Demographics, Services offered & Availability
  - Focus Group(s) (n= 24), lasted 1.5-2hrs, audio-taped and transcribed verbatim

Focus Groups

- Phase 1: with <2000 deliveries per annum
  - 3 focus groups (n=15)
- Phase 2: with ≥2000 deliveries per annum
    - 1 focus group (n=5)
    - Potential solutions to skills/knowledge updates
- Phase 3: Mixed Physician "Finding Solutions" Focus Group (n=8)
      - University based academic obstetric Anesthesiologists
      - Physician key informants from Phases 1 &2

Geographic Areas Represented



Source: Ontario Ministry of Natural Resources

Results

Anesthesia Provider Characteristics by Hospital Delivery Volume

Characteristics	**<2000 deliveries (n=14)**	**≥ 2000 deliveries (n=10)**
Anesthesiologist Family Physician	4/14 (28.6%) **10/14 (71.4%)**	**10/10 (100%)** 0/10(0%)
Age in Years: Mean (SD)	44.8 (7.5) [32-56]	44.4 (7.6) [35-53]
Male Female	**12/14 (85.7%)** 2/14 (14.3%)	**7/10 (70%)** 3/10 (30%)
Years in practice	13.9 (8.7), [2-30]	13.4 (8.4), [3-25]

Labour Epidural Rates and Wait Times by Hospital Delivery Volume

Estimated Rates	**<2000 deliveries (n=14)**	**≥ 2000 deliveries (n=10)**
Labour Epidural	5% to 35%	Non-tertiary: 70% (60-80%) Tertiary: 70% (67.5-70%)
Epidural wait time in hours	4-6 hrs if at all	Non-tertiary:0.5-1 Tertiary: ≤0.5

Small town, Rural, Rural Remote Ontario (Births <2000/annum)

Non-tertiary low obstetric volume hospitals (<2000 deliveries per annum)

- Primary Role: Family Physician Anesthetists
- "Multi-taskers & "Ideal anesthesia providers"
  - Difficulties in "Making a living"--Large numbers of hours covering low volumes
- Low obstetric volumes
  - Dedicated 24/7 anesthesia staffing --financially not feasible
  - Skills maintenance difficult

3 Emerging Themes: Issues & Barriers

1. Anesthesia Human Resource Shortage in Small Community Practice
2. What Women Want & What the System Can Give
3. Professional Isolation & Maintaining the Standard of Care

Theme I: Anesthesia Human Resource Shortage & Small Community Practice -- 3 Subthemes

- Onerous Nature of Anesthesia On Call Coverage
- Service Coverage to Permit Respite Relief, Vacation & CME
- Recruitment, Retention & Burnout

Subtheme 1: Onerous Nature of Anesthesia On Call Coverage

- *"We basically…do call for 24 hours. You do an elective [surgical] list during the day—you [cover] whatever [service needs that have to] interrupt that list and then go on [working] throughout the day and night…*
- *Well, in [X Small Community hospital] we would certainly have a list booked [in the operating room] the day after overnight duties."*

- *"We share [on call] with [another small community hospital]. …Every second day I 'm on 24 hour coverage…and then I work the next day."*

- *" We are a department with 2 fulltime [FPA's]…. We have quite a number of gaps in our monthly call schedule …because we're needing to get extra [locum] help."*

Subtheme 2: Service Coverage for Respite Relief, Vacation & CME

- *"In our facility there [are] 4 GP Anesthetists 5 days a week with 2 ORs running each day, so most Anesthetists alternate between 2 and 3 days a week [in the OR] and if you're taking time off [vacation, CME] one of your colleagues has to cover …and they are already over-burdened as it is."*

- *"Nobody wants to move to this community so we get some [locum] support for [daytime OR] lists but … support for [overnight] call is lacking."*

"… there's a new breed of locum physician out there, who's cherry-picking their opportunities. And there's a lot of places [hospitals] …that seem to be able to up the ante a bit … so it's very difficult to find people that want to come…. We as anesthetists with an APP … basically have no support [for this extra cost]. And so to get people up here… we can do it but it costs us so much that at the end of the day you say what the heck did I do that for…?" [Rural provider]

Sub-theme 3: Recruitment, Retention & Burnout

RECRUITMENT

- *"… when the under-serviced area program came out …. it worked and we [rural providers] were able to utilize it to help us get people. Well now when the under-serviced area program calls [X small community hospital] under-serviced and we're on par with them for … the levels of support that are provided, it ain't working anymore. So, you see me working more and more hours every year it gets worse and worse, because of that." [Rural]*

- *"…we'd like to have 4 [FPAs]. If we had 4 people in the community, we'd be independent of locums. But for the near future, I don't think that's going to happen…For 8 years I've been recruiting."*

- *"…it's very important when you're attracting [new recruits] to say, "Look if you've been up until 3 or 4 am and you can't keep your eyes open [that here] we happily send people home…We…make them feel fully in control of that."*

Retention

- *"My first community was [X rural community]. I was up there for 8 years and we went from 9 people doing Anesthesia to 3. At [my current small community hospital], we've experienced the same thing. We went from 6 staff to now where we've got 2 full-time [staff] and a handful of locums."*

- *" They come up [to a rural community] for a year or 2 and now one's off on maternity [leave]. There's always a situation, it's kind of slow turn-over."[Rural provider]*

- *"…the problem with Anesthesia is that it seems impossible to do the right thing [as you age] and kind of go [down] to 4 days, 3 days, 2days and gradually become a silver fox mentor to the young whippersnappers. Instead you have to work 'til you drop or quit."*

- *"We're an on- call group of 4 [FPA] and we have an out of house 24 hour epidural service. We just had one of the 4 [FPA] say that [they're] leaving… already we're talking about well, that that means we won't be doing 24 hour [coverage] anymore." [Small community]*

Burn Out

- *"My impression …is that people would get their year of [Family Physician] anesthesia training and a certain number would drop out after a year or two 'cause they realize this is …more stressful than what they're prepared to deal with.*

- *But after that … people tend to drop out or at least question their abilities, after they've had a really tough case or maybe a couple of tough cases … and usually they're related to pediatrics and obstetrics 'cause you know how quickly those things can frighten you. So that's I think the reason that people give up doing [anesthesia]….in times of bad obstetric outcomes, that shakes a person quite a bit. And it takes a very strong person to shake that off and carry on." [Rural provider]*

Theme II. What Women Want & What The Current System Can Give – 3 Sub-themes

- What Women Expect
- What the System Can Give: Maternity Anesthesia Care has a lower priority in the system
- Professional Demands vs Survival

Sub-theme 1. Women's Expectations

- *"Their [women's] expectations are that epidural anesthesia… [is] provided 24 hours a day basically on demand…." [Small community]*
- *"So women who want an epidural as soon as they come in, generally speaking, make the choice of going to the city. And women who stay here for the most part [primiparous patients] are not expecting epidurals." [Small community]*
- *"Each rural location changes it's [epidural service] availability day to day, week to week, month to month and even in our hospital we can't readily predict how much service is going to be available." [Small community provider]*
- *"I think a woman has the right to know what's available if she's planning on delivering wherever she [lives] and if she's not happy with it, I mean the next step is then the government has to decide whether or not they want to fund having her deliver elsewhere." [Small Community]*

Subtheme 2: Maternity Anesthesia Care: What the System Can Give

- *"We are not always available to come at the drop of a hat because we do not have staff [dedicated to] attending to the obstetrical floor. So we may have to call on someone who may be involved in many other things. "*
- *"…But we can't attract someone to sit and do 3 or 4 epidurals a day and do a section or two. We're doing… 13-1400 births, 40% epidural rate, 20-25% C-section rate, …you might get them all 6 in one day but it's still going to happen infrequently enough that you can't make enough money." [Small Community]*
- *"The OR's usually pretty busy and if you have to tell the surgeon I have to go up [to Labor and Delivery] …sometimes even [just] to do an epidural,… They can get somewhat nasty about it." [Large Community] .. or sometimes there is a confrontation [Small community].*
- *"…and so we've got a two-tiered [maternity] system that needs to be fixed and these (investigators) need to tell the Ministry that …so we can set up a program to try and fix it…." [Rural Community]*

Subtheme 3. Professional Demands vs Survival

- *"And you're talking to me on day 9 of 18 days of call…and we just leave the hospital and immediately get called back for an epidural…We try to provide a[n epidural] service but as …the hospital is getting busier and busier and I think the epidural rate is going up, it's becoming more and more difficult."*

- *"We've got about 750 deliveries a year and I'm the only person doing epidurals, … so they'll call me and we'll try to use our epidurals judiciously. ..we can't have an "on demand service…My colleagues understand that I wouldn't have a life. I also kind of have a standing order ,that they shouldn't call me [for an epidural], that the physician will call me only if it's an extreme case, say after midnight…I think those are just survival rules." [Small community]*

Theme III. Professional Isolation & Maintaining the Standard of Care

- Professional Isolation
- Precarious Access to Best Practice Maternity Anesthesia Updates
- Barriers to Change
  - Hospital/department culture
  - Lack of formal ongoing connectivity to Mentorship within the system
  - Need for interdisciplinary collaborative models

Subtheme 1. Isolation & Precarious Access to Best Practices Maternity Anesthesia Updates

- ***"We don't have a formal link with anyone. We're out in the middle of nowhere." [Rural Provider]***

- ***"What we find is we go out to an [anesthesia] meeting or an interesting place and often there's a hands-on component, a simulator, maybe a day in the OB unit or OR, and often we'll pick up protocols from just that group of people and that relationship goes on for a month or two. And then it's basically over."*** **[Rural Community]**

- ***"…That's the problem, we've all been relying on a friend who we went to med school with who turned up to be an FRCPC anesthesiologist somewhere …and then when those people move on who you knew, then …you know then the link goes." [Small community]***

Subtheme 2. Barriers to Change

- *Hospital Culture: "It's very difficult when you're just starting out or you just come to a new hospital and you, you come here and you think you want to change the world. And then you realize that the status quo is very rigid and sometimes difficult to change." [Large community]*

- *Team Training: "It's easy for me to get protocols but it's hard for me to get the rest of the team organized and get matching team teaching to do the things that I want to do…. I can easily come home from a meeting with that protocol but the nurse educators, the pharmacy, everybody has more questions than I usually come home with. And that's the biggest stumbling block."* **[Rural provider]**

Solutions for Anesthesia HR Shortage in Small & Rural Ontario

Theme 1: Optimizing Current Services Provision & Provider Retention

- Remuneration-grading of under-serviced regions
- Development of Formal Provincial University-based Maternity Anesthesia Networks for Skills Re-training, Mentorship, Knowledge transfer

Theme 2: Developing New FPA Resources

- Facilitate Re-entrant FPA
- Increase appeal of FPA
- Expediting training Assessments of Foreign-trained Anesthesiologists
- Develop formal locum Anesthesia pools for under-serviced areas
- Other sources

Theme 1. Optimizing Current Services Provision and Improving Retention

- *"I think they [the links between non-tertiary and tertiary centres] have to be initially formalized…[maternity anesthesia network] almost has to be institutionally based or region based."* [Small Community]

- *"I see the universities having one designated staff person with a special interest in community [maternity anesthesia] …and that person would be … a resource for any potential problems… [they]could run weekly … problem rounds by teleconference for example for the whole catchment area. And so …there's an ongoing link so the anesthetist who had a bad case can talk about it. And again an ongoing link that. …there could be a once a year visit, or once every two years even, to those communities…if there was a well-established follow-through on on-going education that people could expect, I think that that would be a very good way of going about it."*

- *"… I think that's a good idea [opening up places where re-training and updating skills are possible] because that's salvaging people who you're going to lose maybe from … anesthesia. So and that would always [need to] be a … one-on-one situation where they could come to be a bigger center and be supported and taught and encouraged." [Small Community Provider]*

Theme 2: Developing New FPA Resources:

Policy Changes for Re-entrant FPA & Increasing the Appeal of FPA

"…if they put some sort of reasonable re-entrant program for GP's to do anesthesia…by that I mean it's like, bite the bullet, find someone, pay them a [reasonable] salary for that year, because… nobody out there in practice today can afford to go back [for training] if you've got a family and mortgage and everything… it's not an option. You can't afford to go back to do a year on a resident's salary." [Rural]

"I think the difference between Emerg and [Family Physician] Anesthesia is the remuneration. You can just do emerg [12 hour shifts] and that's probably the best financial decision for somebody just starting out. …compare that to doing just anesthesia where you have to do call on top of it….Anesthesia is not nearly as inviting [to residents]."

- **Expediting Training Assessments of Foreign-trained Anesthesiologists**

  "…every international medical grad has a story about how the Royal College hasn't even gotten to their application. So I think there has to be pressure…. I know we all want to have standards of health care … and I don't think we would be lowering our standards. I just I think we need to be more flexible and we just don't seem to have it in our bureaucracy." **[Tertiary Maternity Anesthesia]**

- **Develop a Formal System for Locum Anesthesia Relief**

- ***"… we from the under-serviced area program used to have a program where retired sort of professors in the city … would do a day or 2 together here … and share notes.… And that used to be set up through the under-serviced area program but it died a number of years ago. It was quite effective I thought. It was a creative way of solving both our need for locum coverage and it gave us … CME."*** **[Rural Community]**

Develop a New Under-serviced Locum Pool from Foreign-trained Anesthesia Fellows

"…I was thinking if you had a system that …was set up specifically to serve under-serviced areas that would allow them [anesthesia fellows and residents] to work only in these circumstances, [so]they couldn't necessarily just go down the street [and work in their own cities]. The only way they could do it [work independently for a fee would be in] a sense going into some kind of human resource pool that was designed for under-serviced areas only. …then it's either choose that [type of work] and get the advantage of the experience and some income. But they don't get to go work in downtown Toronto or Markham. They've got to go wherever [whatever under-serviced area that needed them] and they would." [Tertiary provider]

Perspectives on "Alternate Anesthesia" Providers

- Perspectives differed by Practice Settings
- Large hospitals (≥2000 deliveries):
  - Many MDs saw a role for
    - RTS or RNs as "anesthesia extenders"
    - Positions were always described within the context of direct supervision by an Anesthesiologist.

Small & Rural Hospital Anesthesia Providers

- Most Family Physician Anesthetists
  - Did NOT see a role for "anesthesia extenders"
  - Family Practice Anesthetists as the "most suitable" alternative providers

Non-Physician Providers

"My view is that there is already …an alternative group… the family practice anesthetists. And it would seem like until we've maxed out that potential, to develop a third stream [of anesthesia providers] … doesn't seem sensible to me. And it [Family Practice Anesthesia] seems …like a very long term [solution]… so I don't see a real need for it personally … the other [non-anesthesia providers] will cause turf issues in the future." [Small Community]

"I disagree that they're lesser expensive. Because if you're paying someone a salary, you're paying someone's pension, you're paying someone's malpractice insurance….I think that family physicians provide health care at a much more efficient and cheaper rate than some of the specialty sort of sub- sub-groups." [Small Community]

Non-Physician Providers

"But the bottom line is Anesthesia is Anesthesia. And even if you're talking about the eye room [eye surgery cases], you know these are older people, they're going to be stressed and they're going to have pressure on their eyeballs and vagal responses [severe slowing of the heart rate and things like that. … let's put it this way, when you have a fire, you want a fire extinguisher." **[Rural Community]**

Issues & Barriers in Large Ontario Community Hospitals (Births ≥ 2000/annum)

? An Educational Resource for Small/Rural Hospitals?

Large Community Hospitals: 3 Themes: Issues & Barriers

- Anesthesia Human Resource Shortage:
  - Difficulties related to dedicated 24/7 staffing of obs services
  - Staffing/remuneration, lack of interest in OB Anesthesia
  - Heavy service loads.
  - Cross-coverage of services while covering OB. Only 1 hospital had 24/7 dedicated ob anesthesia coverage.

Large Community Hospitals (>2000 deliveries/annum)

- **Professional Isolation & Maintaining the Standard of Care**
  - Greater access to Maternity Anesthesia Experts
    - Protocols, teaching, consultation
  - Access/continued mentorship links in the South were weaker in northern large community hospitals. Voiced their relative isolation.
  - Same issues with lack of time, lack of resources to update protocols
  - CME (ranged from weekly to monthly)

Large Community Hospitals (≥2000 deliveries/annum)

- What Women Want and What the System Can give
  - Competing with cases in the OR; lower priority in the system
  - Hospital culture re labor analgesia
    - Nursing/anesthesia/ob
    - Income

Recommendations

1. Creation of a Ministry of Health and Long Term Care Maternity Care Branch

2. Improve women's access to obstetrical anesthesia services in smaller centres.

Human Resources: Strategies to Retain Existing Providers and Increase the Number of FPA

- Fund dedicated one year anesthesia training positions for Family Physician Anesthetists
- Promote recruitment of Family Practice residents into Family Practice Anesthesia Fellowships
- Re-entrant Anesthesia Training
- Appropriate remuneration

3. Facilitate the uptake and implementation of Obstetrical Anesthesia Best Practices in non-tertiary maternity care centres

- Establish permanent formal obstetrical anesthesia networks for knowledge translation between academic ctrs of excellence and surrounding community hospitals.
- Formal networks function: to disseminate best practices and support their implementation including research.
- Provision of hospital infrastructure supports to facilitate the uptake of best practices

4. Clarify medical and legal responsibilities of anesthesiologists and family physician anesthetists when they are the sole physicians involved in patient care of midwifery patients.

"Who is the most responsible physician?"

5. Establish a formal organization to represent Family Physician Anesthetists

Update Since the Study

Activities

- Annual Obstetrical Anesthesia Meeting, 2005
  - Satellite conference of the Toronto Anesthestic Practice meeting
- Ontario Medical Association:
  - GPA member appointed
- Provincial Maternal Newborn Advisory Council
  - Anesthesia HR now recognized as the minimum level of support desired in Level 1 hospitals
- Evidence-based Health Care
- Approaches: MoHLTC/hospital for KT network

Provincial

- Shadow Maternal Health Branch
- BORN (Better Outcomes Registry & Network)
  - Formed in Jan 2009 by the MoHLTC
  - Combines 5 databases
    - (Ontario Multiple Marker Screening database (prenatal screening), Fetal Alert Network (congential anomalies), Niday Perinatal Database ,Ontario Midwifery Program Database, Newborn Screening Ontario Database)
  - All Ontario births captured Nov 2009

Physician HR Shortage

- College of Physician and Surgeons, 2008
  - 2007, 3279 Licenses issued:
    - IMGs, >25% of independent licenses issued
    - More issued to IMGs than Ontario Grads
- Overall Ontario Physician Supply
  - ⇧ by 2,672 (13%) from 20,053 to 22,725
- Anesthesia Assistant program

Demand for Maternity Anesthesia Services

Provincial Demand

- Cesarean Section Rates (PPPESO)
  20%(1998) ➔ 26%(2004) ➔ 28% (2006), ➔ 28.5% (2008)
- Labor Epidural rates
  - 59% (2004) ➔ 59% (2006), ➔ 57% (pppeso 2007/2008)

Small Community Hospital Demand

- Cesarean Section: 27.5% (2004) ➔ 27% (2006) ➔ 28.5% (2008) (pppeso 2008 23.9% page 43)
- Teaching hospital epidural rate 64% (2007/8 pppeso) c/w large hospital (54%) vs small hospital 31%
- Labor epidural rates small community hospitals
  8.1 %(1998) ➔26 % (2003) ➔ 31% (2008, PPPESO)

DISCUSSION