

A photograph of a pregnant woman with long brown hair, wearing a white t-shirt, sitting and gently holding her belly with both hands. The background is a soft, out-of-focus blue and white. The image is partially obscured by a large blue diagonal shape that contains the title text.

**DELIVERY IN FOCUS:**  
**Strengthening obstetrical care** in Canada

**10-YEAR REVIEW OF CMPA AND HIROC DATA**

## About the contributing organizations



The Healthcare Insurance Reciprocal of Canada (HIROC) is a non-profit insurance reciprocal owned and governed by over 700 health care organizations across Canada. It was started in the 1980s when health care organizations were unable to find reasonably priced insurance in the commercial marketplace. The reciprocal/cooperative model allows for pooling of data across multiple similar organizations, sharing of lessons learned, and collective pressure exerted by members to implement effective risk management programs that reduce injury.



The Canadian Medical Protective Association (CMPA) is a not-for-profit association which provides medical-legal protection to approximately 97,000 Canadian physicians. The CMPA multidisciplinary teams collect and analyze medical-legal information to determine risk trends. This contributes to the extensive knowledge base on which the Association's professional development programs for physicians, education materials, and policy positions are built.

## **Delivery in focus: Strengthening obstetrical care in Canada**

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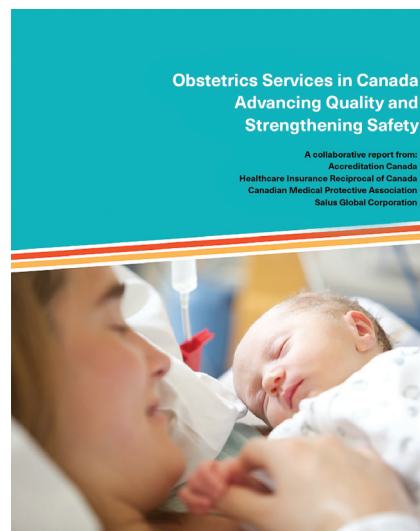
# TABLE OF CONTENTS

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1	<b>BACKGROUND</b>
2	<b>PURPOSE</b>
3	<b>METHODS</b>
4	<b>RESULTS</b>
5	<b>Case characteristics</b> Patient outcomes
7	<b>Providers involved and when incidents occurred</b> Providers involved Phase of care Contributing factors to obstetrical incidents
9	<b>High-risk areas</b> Intrapartum fetal surveillance Induction and augmentation of labour with oxytocin
13	<b>Limitations</b>
14	<b>IMPLICATIONS</b>
15	<b>STRATEGIES</b> Clinical decision-making by providers Team communication System issues
16	<b>CONCLUSION</b>
17	<b>Glossary of terms used in this report</b>
18	<b>APPENDIX A: RESOURCES FROM HIROC</b> Results from HIROC's Risk Assessment Checklists (RAC) program

# BACKGROUND

In October 2016, the Canadian Medical Protective Association (CMPA) and the Healthcare Insurance Reciprocal of Canada (HIROC) collaborated with Accreditation Canada<sup>1</sup> and Salus Global Corporation to write the report *Obstetrics Services in Canada: Advancing Quality and Strengthening Safety*.<sup>2</sup> The report profiles the safety and quality of obstetrics services in Canada and also identifies opportunities for improvement.



Recognizing that the CMPA and HIROC each have a medico-legal database with the potential to advance patient safety knowledge, both organizations analyzed their respective obstetrical cases. The goal was to uncover contributing factors to patient safety incidents and identify additional mitigation strategies for providers and healthcare organizations. This report summarizes these findings and strategies.

1. As of February 2017, Accreditation Canada is an affiliate of Health Standards Organization.
2. *Obstetrics Services in Canada: Advancing Quality and Strengthening Safety* is a collaborative report by Accreditation Canada, the Healthcare Insurance Reciprocal of Canada (HIROC), the Canadian Medical Protective Association (CMPA), and Salus Global Corporation. It profiles the quality and safety of obstetrics services in Canada from 2004 to 2015 and was published 2016.

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# PURPOSE

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Obstetrics is a high-risk clinical area of practice in terms of the severe patient outcomes associated with the most severe, though rare, patient safety incidents. A recent analysis of CMPA data found obstetrics-related cases accounted for about one-quarter of all CMPA liability costs and one-third of compensation payments to patients. A recent analysis of HIROC data found that obstetrics accounted for 45% of all HIROC liability costs and 46% of compensation payments to patients. Liability-related matters represent 85% of all matters reported to HIROC.

As the CMPA is the principal provider of medical liability protection to Canadian physicians and HIROC is the largest provider of medical liability insurance for Canadian healthcare organizations and their employees, the data from the two organizations represent complementary perspectives on obstetrical patient safety and quality of care.

Medico-legal cases represent a small proportion of patient safety incidents and are not representative of patient safety incidents overall. Still, they are a rich data source for important patient safety themes.

Included in this report are results from HIROC's Risk Assessment Checklists (please refer to Appendix A). This innovative tool enables Canadian healthcare organizations and practitioners to systematically self-assess compliance with strategies that mitigate risk and are evidence-based.

This report describes the results of a joint analysis of obstetrical cases, supports learning from these cases, and advances patient safety and quality improvement efforts.



## METHODS

This retrospective analysis of CMPA and HIROC medico-legal cases included in-hospital obstetrical incidents that occurred between 2004 and 2013. CMPA cases were closed at the time of analysis, whereas HIROC included open (i.e. unresolved) and potential claims as well. Global settlements (i.e. legal claims brought by multiple plaintiffs and settled with one or more defendants) and midwifery cases were excluded. The CMPA excluded medical regulatory authority (College) and hospital complaints. Although the CMPA and HIROC may have represented distinct parties for the same incident, the probable overlap of data was not quantified. The CMPA captures medical conditions and interventions using the Canadian Enhancement to the International Statistical Classification of Disease and Related Health Problems, 10th revision (ICD-10-CA) and the Canadian Classification of Health Interventions (CCI). To capture the same information, HIROC uses exposure risk codes in addition to the ICD-10-CA and CCI codes. Both organizations also use their own distinct frameworks to identify and analyze obstetrical events and their contributing factors.<sup>3</sup> We descriptively analyzed the data using frequencies and proportions.

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3. Adele McCleery, Ria De Gorter, Eileen Whyte, Renée Darling, Robin VanderHoek, Catherine Ogilby, Cynthia Dunn, Kirsten Devenny, Anne Steen, Anna MacIntyre, Gordon Wallace, Lisa Calder. A contributing factor framework: Supporting safe medical care in Canada through a patient-safety focused coding framework. Poster session presented at: 22<sup>nd</sup> Annual IHI Scientific Symposium on Improving the Quality and Value of Health Care; 2016 Dec 5; Orlando, FL.



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# RESULTS

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A total of 288 CMPA and 403 HIROC medico-legal cases involving an in-hospital obstetrical incident were analyzed. Less than 5% of CMPA cases were threats of a legal action that were settled by the CMPA on behalf of the physician, while the remaining progressed to a legal action. Forty-seven per cent of HIROC cases were classified as a potential threat of or suspected legal action, and the remaining cases involved a statement of claim.

## ■ CASE CHARACTERISTICS

Case characteristics are presented in Table 1. Although HIROC and CMPA data appear together, it is important to note the data cannot be directly compared because of differences in the nature of the information that is captured by both groups.

The main delivery complications in the CMPA cases were maternal intra- and postpartum hemorrhage and infection, which occurred in 24% and 23% of cases respectively. In HIROC cases, these maternal complications occurred in 7% and 4% respectively. Uterine rupture occurred in 5% of cases in both datasets. The most common neonatal complication for both organizations was neurological compromise resulting from anoxia, at 28% of CMPA cases and 54% of HIROC cases. Brachial plexus injury occurred in 8% and 9% of CMPA and HIROC cases, respectively.

The mode of obstetrical delivery was similar among both datasets. Emergent or urgent Caesarian section was the most common intervention at 36% and 38% of cases for the CMPA and HIROC, respectively. The CMPA had a higher proportion of cases involving elective Caesarian sections (10% vs. 7%). Twenty-seven per cent of CMPA cases and 29% of HIROC cases involved a spontaneous vaginal delivery and 16% of CMPA cases and 17% of HIROC cases were assisted vaginal deliveries using vacuum or forceps, or both.

**TABLE 1.**

CHARACTERISTICS, CMPA AND HIROC OBSTETRICAL CASES (2004–2013)

Characteristic	No. (%) of cases	
	CMPA n =288	HIROC n =403
<b>PATIENT DEMOGRAPHICS</b>		
MATERNAL AGE†		
<16 y	4 (1.4)	2 (0.5)
17-34 y	203 (70.5)	241 (59.9)
>35 y	68 (23.6)	102 (25.3)
<b>PARITY*</b>		
Primiparous	159 (55.2)	154 (38.2)
Multiparous	95 (33.0)	158 (39.2)
<b>MATERNAL RISK FACTORS</b>		
Smoking	46 (16.0)	13 (3.2)
Maternal obesity	23 (8.0)	44 (10.9)
Substance use	3 (1.0)	3 (0.7)
Previous C-section	39 (13.5)	34 (8.4)
Hypertension	38 (13.2)	50 (12.4)
Diabetes	15 (5.2)	21 (5.2)
<b>PREGNANCY RISK FACTORS</b>		
Twins or multiples	13 (4.5)	19 (4.7)
In-vitro fertilization	9 (3.1)	13 (3.2)
Small for gestation age at delivery (<2500 g)	32 (11.1)	40 (9.9)
Large for gestation age at delivery (>4000 g)	25 (8.7)	36 (8.9)
Early term delivery <37 weeks	44 (15.3)	61 (15.1)
Post-dates delivery >40 weeks	34 (11.8)	47 (11.7)
<b>DELIVERY COMPLICATIONS</b>		
Intra- and postpartum hemorrhage	69 (24.0)	29 (7.2)
Intra- and postpartum maternal infection	67 (23.3)	17 (4.2)
Unintentionally retained surgical items	22 (7.6)	12 (3.0)
Uterine rupture	14 (4.9)	22 (5.5)
Shoulder dystocia	12 (4.2)	17 (4.2)
3 <sup>rd</sup> and 4 <sup>th</sup> degree tears	8 (2.8)	6 (1.5)
Maternal cardiovascular	6 (2.1)	12 (3.0)
Maternal respiratory	2 (0.7)	7 (1.7)
Fetal anoxia	80 (27.8)	219 (54.3)
Brachial plexus injury	23 (8.0)	36 (8.9)
Neonatal infection	9 (3.1)	15 (3.7)
Injury from instrumentation during delivery	3 (1.0)	27 (6.7)

\* Parity was unknown in 12% of CMPA cases and 23% of HIROC cases.

† Maternal age was unknown in 4% of CMPA cases and 14% of HIROC cases.

## Patient outcomes

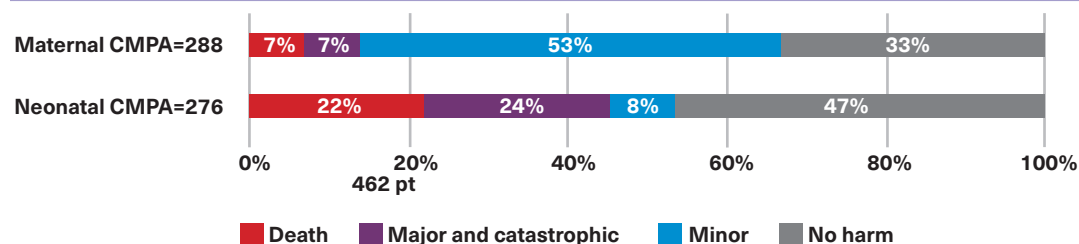
Figures 1 and 2 illustrate patient outcome severity for each organization.

The percentages of cases involving severe maternal outcomes and maternal death were similar for both groups. These were often related to cerebral hemorrhage, amniotic fluid emboli, and hypovolemic shock. However, the CMPA had a greater proportion of cases with maternal outcomes that were classified as minor, and these included wound infections and perineal tears.

Major and catastrophic neonatal outcomes, such as spastic quadriplegia and global developmental delay, made up a larger proportion of HIROC cases, whereas CMPA cases had a higher percentage of cases that involved neonatal death. Variances in the data may be related to differences in coding and incident or claim report practices for HIROC and CMPA.

FIGURE 1.

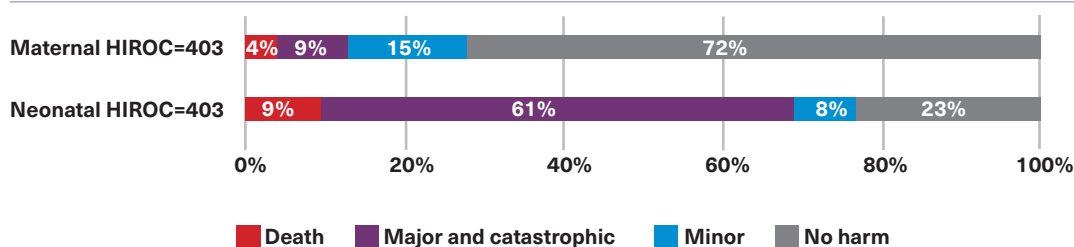
### PATIENT OUTCOME SEVERITY, CMPA OBSTETRICAL CASES 2004–2013 (N=288)



Note: "No harm" in maternal and neonatal outcomes indicates that an incident occurred, but did not lead to patient harm. Reflects the number of patients who experienced complications; 12 neonatal outcomes were unknown or missing.

FIGURE 2.

### PATIENT OUTCOME SEVERITY, HIROC OBSTETRICAL CASES 2004–2013 (N=403)



Note: "No harm" in maternal outcomes could include unknown outcomes due to coding focus being on neonatal outcomes. Harm was only captured at the case level and reflects the highest severity of patient outcome that occurred, even if more than one patient was involved.

## ■ PROVIDERS INVOLVED AND WHEN INCIDENTS OCCURRED

### *Providers involved*

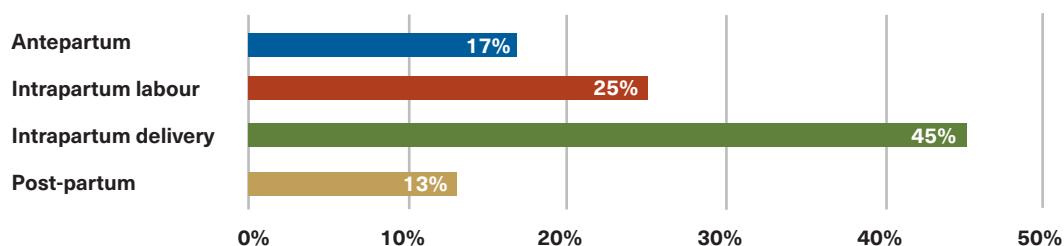
Obstetrical care involves multiple healthcare providers across many phases of care. As expected, physicians were involved in 100% of CMPA cases. Other healthcare providers, most often nurses, were involved in 35% of CMPA cases. HIROC reported physician involvement in 81% of cases, with 79% involving nurses and other healthcare providers (e.g. respiratory therapists).

### *Phase of care*

The majority of cases for both CMPA and HIROC were related to intrapartum issues (see Figures 3 and 4). Issues occurred in more than one phase in 24% of CMPA cases and in 40% of HIROC cases. This finding may reflect an evolving clinical situation over time and phases of care that ultimately led to patient safety incidents.

**FIGURE 3.**

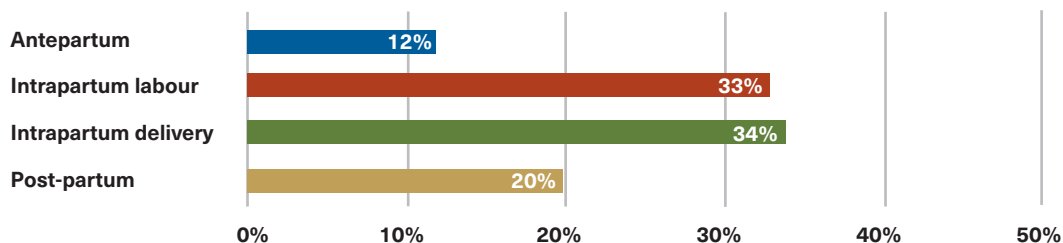
PHASES OF OBSTETRICAL CARE IN WHICH INCIDENTS OCCURRED, CMPA OBSTETRICAL CASES 2004–2013 (N=288)



Issues occurred in more than one phase in 24% of cases.

**FIGURE 4.**

PHASES OF OBSTETRICAL CARE IN WHICH INCIDENTS OCCURRED, HIROC OBSTETRICAL CASES 2004–2013 (N=403)



Issues occurred in more than one phase in 40% of cases.

### **Contributing factors to obstetrical incidents**

Both the CMPA and HIROC found provider factors to be the largest category of contributing factors overall. Because the CMPA represents only physicians, they were the largest group captured under the Association's category of provider factors. HIROC's provider factor cases reflect the diversity of healthcare providers that it represents (Tables 2 and 3).

While system factors may impact all aspects of care, a distinct group of system factors were captured in 7% of CMPA cases and 32% of HIROC cases. These included inadequate processes and protocols, second-on-call contingency plans, resource issues, and office administrative issues. The large discrepancy in system factors captured in HIROC and CMPA cases can be explained by the fact that system issues are under-represented in these CMPA cases. This is because until recently, the CMPA coding framework captured only a limited number of these factors and peer experts do not generally focus on system issues.

**TABLE 2.**

#### CONTRIBUTING FACTORS TO OBSTETRICAL INCIDENTS, CMPA OBSTETRICAL CASES 2004–2013 (N=288)

<b>Type of factor</b>	<b>No. (%) of cases</b>
Provider*	160 (55.6)
Team†	85 (29.5)
System	19 (6.6)

Note: Cases usually involve multiple contributing factors, which are often overlapping.

\* Provider includes physicians, nurses, and other healthcare providers.

† Team includes communication and consent issues for all healthcare providers, including physicians.

Two key themes identified by both organizations were individual provider decision-making including situational awareness, and communication. Provider decision-making was a contributing factor in half of the CMPA cases. A lack of individual and team situational awareness also contributed to a delay in detecting a problem or appreciating the potential severity and urgency of a situation. Breakdowns in team communication occurred in 20% of cases, while documentation was an issue in 11% of cases. Communication issues with patients and their families was noted in 4% of cases.

**TABLE 3.**

#### CONTRIBUTING FACTORS TO OBSTETRICAL INCIDENTS, HIROC OBSTETRICAL CASES 2004–2013 (N=403)

<b>Type of factor</b>	<b>No. (%) of cases</b>
Physician	284 (70.5)
Non-physician healthcare provider*	236 (58.6)
System	130 (32.3)

Note: Cases usually involve multiple contributing factors, which are often overlapping.

\* Non-physician healthcare providers include nurses and other healthcare providers (e.g. respiratory therapists).

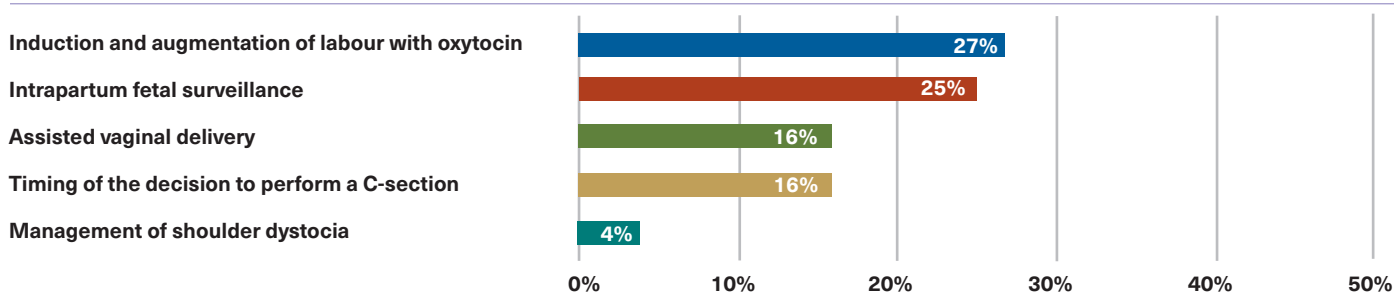
Physician decision-making was also a contributing factor in over half of HIROC cases, as was situational awareness in 31%. These factors were also attributed to nurses and other healthcare providers in about 33% of cases. Communication breakdowns among team members occurred in 17% of cases and in 8% with patients and their families. The HIROC analysis also identified many system factors such as lack of reliable processes and contingency plans, as well as resource issues.

## ■ HIGH-RISK AREAS

The previous collaboration<sup>4</sup> identified the following high-risk areas for both CMPA and HIROC: intrapartum fetal surveillance, induction, and augmentation of labour with oxytocin, assisted vaginal delivery, timing of the decision to perform a Caesarian section (C-section), and management of shoulder dystocia. Figures 5 and 6 illustrate the frequency of these areas for CMPA and HIROC.

FIGURE 5.

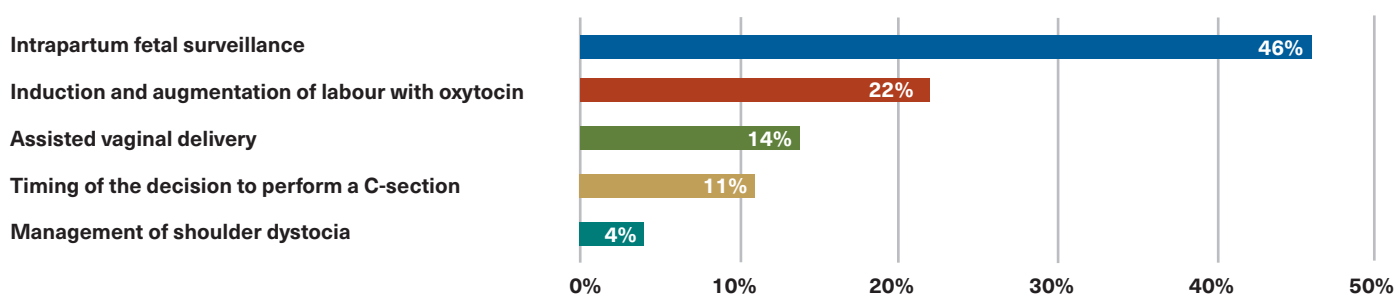
### HIGH-RISK AREAS OF PRACTICE, CMPA OBSTETRICAL CASES 2004–2013 (N=288)



Note: A single case may involve more than one high-risk area.

FIGURE 6.

### HIGH-RISK AREAS OF PRACTICE, HIROC OBSTETRICAL CASES 2004–2013 (N=403)



Note: A single case may involve more than one high-risk area.

Because intrapartum fetal surveillance (CMPA 73/288, 25%; HIROC 184/403, 46%) and the induction or augmentation of labour with oxytocin (CMPA 79/288, 27%; HIROC 87/403, 22%) were the two highest shared risk areas for both groups, the CMPA and HIROC decided to explore these areas further to learn from these cases. Tables 4 to 7 illustrate the top contributing factors to these issues for both organizations.

4. *Obstetrics Services in Canada: Advancing Quality and Strengthening Safety* is a collaborative report by Accreditation Canada, the Healthcare Insurance Reciprocal of Canada (HIROC), the Canadian Medical Protective Association (CMPA), and Salus Global Corporation. It profiles the quality and safety of obstetrics services in Canada from 2004 to 2015 and was published 2016.

### ***Intrapartum fetal surveillance***

Table 4 shows that for CMPA data, there were two main issues related to fetal surveillance. The first was that members of the team, predominantly nurses, delayed in notifying physician consultants or the most responsible physician of abnormal fetal heart rate (FHR) patterns (45%). The second issue was that physicians and nurses misinterpreted FHR patterns (37%). Other noteworthy issues were related to physicians not adequately attending the patient during a critical period, such as evidence of fetal compromise (29%), and to the team's reduced capacity to respond to obstetrical emergencies.

**TABLE 4.**

CONTRIBUTING FACTORS RELATED TO INTRAPARTUM FETAL SURVEILLANCE,  
CMPA OBSTETRICAL CASES 2004–2013 (N=73)

<b>Contributing factors</b>	<b>Issues</b>	<b>% of cases</b>
Clinical decision-making	Delayed notification of consultant or MRP for concerns or abnormal fetal status	45
	Misinterpretation of FHR pattern by physician or nurse, or both	37
	Patient not adequately attended during a critical period	29
	Wrong choice of type of monitoring or inappropriate application of fetal monitoring	8
	Infrequent fetal status assessments	5
	Delay or failure to diagnose uterine tachysystole	4
	Delayed response to unequivocal tracing or assessments	5
	Inexperience of practitioners	4
System	Reduced capacity to respond to obstetrical emergencies	
	• staff availability	18
	• OR availability	11
	Lack of compliance with or lack of awareness of hospital fetal surveillance protocols	12
Team communication	Lack of documentation (assessments, uterine contractions, presence or absence of accelerations, justification for switching from continuous EFM to IA)	8

Note: A case may have more than one issue.

MRP=most responsible physician; FHR=fetal heart rate; OR=operating room; EFM=electronic fetal monitoring; IA=intermittent auscultation.



HIROC's findings concerning fetal surveillance were similar to the CMPA's (above). HIROC's most frequently identified issue was that nurses delayed notifying the obstetrician or family practitioner of abnormal FHR patterns (64%) (Table 5). Other notable findings were a lack of awareness or compliance with hospital fetal surveillance policies (33%) and a lack of documentation of fetal assessment performed (32%). Misinterpretation of the FHR pattern by nurses and physicians (24%) and a lack of patient monitoring or attendance during a critical period (24%) were additional common issues.

**TABLE 5.**

CONTRIBUTING FACTORS RELATED TO INTRAPARTUM FETAL SURVEILLANCE,  
HIROC OBSTETRICAL CASES 2004–2013 (N=184)

Contributing factors	Issues	% of cases
Clinical decision-making	Delayed notification of consultant or MRP for concerns or abnormal fetal status	64
	Misinterpretation of FHR pattern by physician or nurse, or both	24
	Patient not adequately attended during a critical period	24
	Infrequent fetal status assessments	23
	Normalization of deviance or decreased vigilance over time towards atypical or abnormal FHR patterns	21
	Inexperience of practitioners	8
	Misinterpretation of FHR pattern by physician or registered midwife	7
	Delay or failure to diagnose uterine tachysystole; Misinterpretation of uterine tachysystole	5
	Wrong choice of type of monitoring or inappropriate application of fetal monitoring; Wrong choice or performance of fetal status monitoring	5
	Delayed response to unreadable or non-interpretation tracing or assessments	3
System	Lack of compliance with or lack of awareness of hospital fetal surveillance protocols	33
	Reduced capacity to respond to obstetrical emergencies	
	<ul style="list-style-type: none"> <li>• staff availability</li> <li>• OR availability</li> </ul>	23 6
Team communication	Lack of documentation (assessments, uterine contractions, presence or absence of accelerations, justification for switching from continuous EFM to IA)	32
	Disagreement between physicians and nurses as to whether notification or consultation took place.	4
Patient	Patient declining some or all assessments during labour	2

Note: A case may have more than one issue.

MRP=most responsible physician; FHR=fetal heart rate; OR=operating room; EFM=electronic fetal monitoring; IA=intermittent auscultation.

### **Induction and augmentation of labour with oxytocin**

In the CMPA cases, the leading issue was related to the mismanagement of oxytocin, such as not reducing the infusion rate or discontinuing the drug when indicated (29%), or delay in notifying or consulting the appropriate physician when there were abnormal findings (27%) (Table 6).

**TABLE 6.**

CONTRIBUTING FACTORS RELATED TO THE INDUCTION AND AUGMENTATION OF LABOUR WITH OXYTOCIN, CMPA OBSTETRICAL CASES 2004–2013 (N=79)

<b>Contributing factors</b>	<b>Issues</b>	<b>% of cases</b>
Clinical decision-making	Oxytocin infusion rate not reduced or discontinued where indicated	29
	Delayed physician notification or consultation for unresolved uterine tachysystole, signs of uterine rupture, or abnormal FHR pattern	27
	Deficient assessment of the effects of oxytocin on fetal well-being	4
	Lack of patient assessment by physician prior to ordering oxytocin	3
System	Lack of awareness or compliance with hospital oxytocin protocol	9
Team communication	Documentation issues	9

Note: A case may have more than one issue.

FHR=fetal heart rate

In the HIROC cases, the three most common issues identified were as follows: a failure to reduce or discontinue the rate of IV oxytocin where clinically indicated (71%), a delay in notifying the physician about uterine contractions and fetal well-being in the presence of oxytocin (54%), and a failure to challenge questionable induction and augmentation orders including not escalating care concerns (51%). In addition, a lack of compliance with local policies (49%) and gaps in FHR assessments (38%) were common findings (Table 7).

TABLE 7.

CONTRIBUTING FACTORS RELATED TO THE INDUCTION AND AUGMENTATION OF LABOUR WITH OXYTOCIN, HIROC OBSTETRICAL CASES 2004–2013 (N=87)

Contributing factors	Issues	% of cases
Clinical decision-making	Oxytocin infusion rate not reduced or discontinued when indicated	71
	Delayed physician notification or consultation of unresolved uterine tachysystole, signs of uterine rupture or abnormal FHR pattern	54
	Deficient assessment of the effects of oxytocin on fetal well-being	38
	Normalization of deviance or decreased vigilance of IV oxytocin administration protocol	33
	Lack of patient assessment by physician prior to ordering oxytocin	10
	Restarting oxytocin infusion at an inappropriate rate	7
Culture of safety	Not questioning oxytocin orders or escalating concerns despite concerns of clinical appropriateness	51
System	Lack of awareness or compliance with hospital oxytocin protocol	49
	Inappropriate acceptance of oxytocin order (verbal or informal)	17
Team communication	Documentation issues	28

Note: A case may have more than one issue.

FHR=fetal heart rate; IV=intravenous.

## ■ LIMITATIONS

The following factors should be taken into account when evaluating the data presented in this report:

- Not all obstetrical incidents are reported to the CMPA or HIROC, therefore this is not a comprehensive representation of all obstetrical care that occurs in hospitals.
- Only aggregate, de-identified data was shared.
- The two datasets were not uniformly comparable owing to differences in data collection, case classification, and case status (i.e. open vs. closed) between the organizations.
- System issues are under-represented in CMPA cases; until recently, the CMPA coding framework captured only a limited number of these factors, and peer expert opinions are not focused on system issues.

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# IMPLICATIONS

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Despite the differences in CMPA and HIROC data, the findings highlight common issues. During the intrapartum phase of care, the most notable issues were deficiencies in provider clinical decision-making and team communication. These were sometimes influenced by loss of individual and team situational awareness. System issues were also important contributing factors, especially when it came to reliable hospital protocols, or reduced capacity to respond to obstetrical emergencies. Together, these factors usually hindered the team's response to fetal distress, which prevented a timely delivery and often led to patient harm.

Despite previously mentioned differences in dataset composition and case coding, both organizations share the common risk areas of fetal surveillance and the induction or augmentation of labour with oxytocin.

For both organizations, the main issue with fetal surveillance (i.e. failing to monitor, interpret, or respond to abnormal fetal heart rate patterns) was a delay in notifying the patient's most responsible or attending physician.

Both the CMPA and HIROC found that two issues were most common with induction or augmentation with oxytocin. The first was the failure to reduce or discontinue the oxytocin infusion. The second was a delay in notifying or consulting with a physician for unresolved uterine tachysystole, signs of uterine rupture, or abnormal fetal heart rate patterns. Since these issues suggest an evolving clinical situation, they present opportunities to improve teamwork in order to enhance situational awareness and to empower individual members to escalate concerns.

While this analysis demonstrated some common themes, the CMPA and HIROC bring different perspectives to the factors that contribute to these events, which can enhance the development of preventive strategies.

# STRATEGIES

In sharing complementary analyses, the CMPA and HIROC developed the following strategies to improve quality and safety of aspects of obstetrical care based on medico-legal cases. Healthcare providers and leaders should consider the following.

## **Clinical decision-making by providers**

- Adopt human factors strategies to identify and reduce errors in clinical decision-making (including those originating from cognitive biases) and the negative effects of stressors (e.g. fatigue, task overload).
- Facilitate and encourage simulation training and drills to practise acquiring and maintaining team-shared situational awareness, effective communication, and crisis response.

## **Team communication**

- Use standardized documentation to strengthen communication.
- Speak up with team members about deteriorating patient condition, to enhance the team members' situational awareness, and confirm that the team recognizes the urgency.

## **System issues**

- Foster a culture of safety with open and respectful communication, which encourages effective teamwork.
- Develop and encourage team escalation strategies for clinical concerns.
- Create, update, and evaluate policies such that:
  - standardized protocols are effectively implemented
  - regular review and training is encouraged
  - policy adherence is measured
  - quality improvement activities are ongoing

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# CONCLUSION

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Patient safety is a collective responsibility, achievable only through the collaboration of government, healthcare organizations, educational institutions, individual providers, and patients and families. Accurately identifying obstetrical patient safety incidents and analyzing their contributing factors are crucial to reducing harm.

Aside from sharing two common risk areas—intrapartum fetal surveillance and the induction or augmentation of labour with oxytocin—HIROC and CMPA data identified three main factors that contributed to obstetrical patient safety incidents: provider clinical decision-making, team communication, and system issues.

The CMPA and HIROC conclude that patient safety activities and risk mitigation strategies should focus on training aimed at improving clinical decision-making and team communication. Furthermore, system changes should include the use of standardized and reliable care processes, as well as the development of a culture that encourages effective teamwork.



## GLOSSARY OF TERMS USED IN THIS REPORT

<b>Clinical decision-making</b>	The use of knowledge to guide decisions to elicit clinical clues, to formulate diagnostic impressions, to order investigative or follow-up procedures, to acquire data to monitor a course of action or evaluate the severity or probability of an outcome, or to select a management course.
<b>Contributing factors</b>	The circumstances, actions, or influences that are thought to have contributed to the development of a patient safety incident or to increase the risk of an incident. More than one contributing factor is typically involved in a single patient safety incident.
<b>Expert</b>	A professional who is engaged to provide an opinion based on his/her special skill or knowledge in a particular area.
<b>Patient safety</b>	The reduction of unsafe acts and practices, the mitigation of the impact of these, and the use of good practices shown to lead to safer patient care.
<b>Patient safety incident</b>	<p>An event or circumstance that could have resulted, or did result, in unnecessary harm to the patient</p> <ul style="list-style-type: none"> <li>▪ Harmful incident: A patient safety incident that resulted in harm to the patient. Replaces the terms “adverse event” and “sentinel event.”</li> <li>▪ No harm incident: A patient safety incident that reached the patient but no discernible harm resulted.</li> <li>▪ Near miss: A patient safety incident that did not reach the patient. Replaces “close call.”</li> </ul> <p>In Québec, the terms “accident” and “incident” are defined in the applicable legislation. Neither term corresponds exactly to the WHO terminology. An “accident” in Québec means “an action or situation where a risk event occurs which has or could have consequences for the state of health or welfare of the user, a personnel member, an involved professional, or a third person.” The term “incident,” on the other hand, is defined as “an action or situation that does not have consequences for the state of health or welfare of a user, a personnel member, an involved professional or a third person, but the outcome of which is unusual and could have had consequences under different circumstances.” As the CMPA interprets the Québec legislation, the term “accident” would align with the WHO term “harmful incident” whereas the term “incident” would include the WHO terms “no harm incident” and “near miss.”</p>
<b>Situational awareness</b>	A person’s perception and understanding of the dynamic information that is present in the environment. It involves keeping track of what is happening and includes anticipating what might need to be done.
<b>System factors</b>	The lack, malfunction, or failure of policies, operational processes, or supporting infrastructure, e.g. equipment or resource limitations, for the provision of healthcare.



## APPENDIX A: RESOURCES FROM HIROC

HIROC created the following risk reference sheets to highlight the top risks leading to their most costly claims.

1. HIROC (2016).  
Failure to Interpret/Respond to Abnormal Fetal Status Risk Reference Sheet.
2. HIROC (2016).  
Failure to Monitor Fetal Status Risk Reference Sheet.
3. HIROC (2016).  
Mismanagement of Induction/Augmentation Medications Risk Reference Sheet.
4. HIROC (2016).  
Failure to Communicate Fetal Status Risk Reference Sheet.
5. HIROC (2016).  
Failure to Identify/Manage Hyperbilirubinemia Risk Reference Sheet.
6. HIROC (2016).  
Assisted Vaginal Deliveries Risk Reference Sheet.

### RESULTS FROM HIROC'S RISK ASSESSMENT CHECKLISTS (RAC) PROGRAM

Medico-legal claims can be used to improve reliability by identifying important and actionable deficiencies in healthcare processes that are not generally captured by other data sources (Levtzion-Korach et al., 2010). With one of the largest medico-legal claims databases in Canada, HIROC embarked on a plan in 2011 to better translate patient safety knowledge from medical claims to the healthcare system, its leaders, and practitioners. This included developing the following:

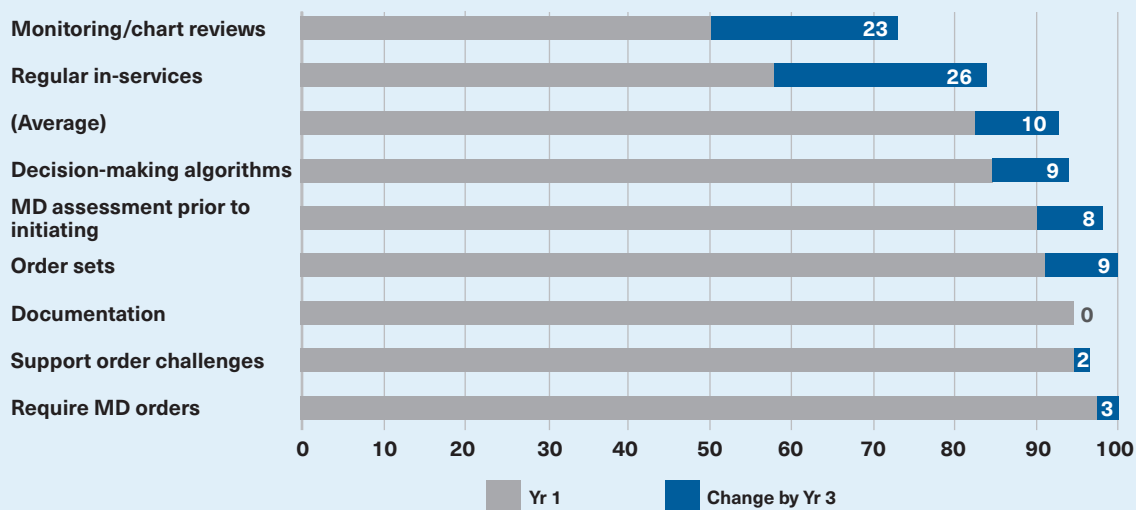
- a list of the top risks leading to the most costly claims in acute care organizations
- risk reference sheets for each risk highlighting claims findings, themes, cases, and key mitigation strategies
- an online program, Risk Assessment Checklists (RAC), for organizations to systematically self-assess compliance with the top 10 evidence-based mitigation strategies for each risk

As challenging as risk identification can be, risk assessment (the determination of how bad or how often a risk may occur) is even more so, but it is essential to the process of prioritization. The program follows a three-year cycle. In year one, participating organizations or practitioners evaluate their compliance against the assigned modules and select three “areas of focus.” After reflecting on each mitigation strategy and whether the practice is in place within the organization, participants select one of four weighted answers from a dropdown: yes (100), partial (50), no (0), and not applicable (99).

In 2017 HIROC released a report analyzing the first complete three-year cycle of the RAC program. Figures 1-5 summarizes the results from the five maternal/neonate RAC modules.

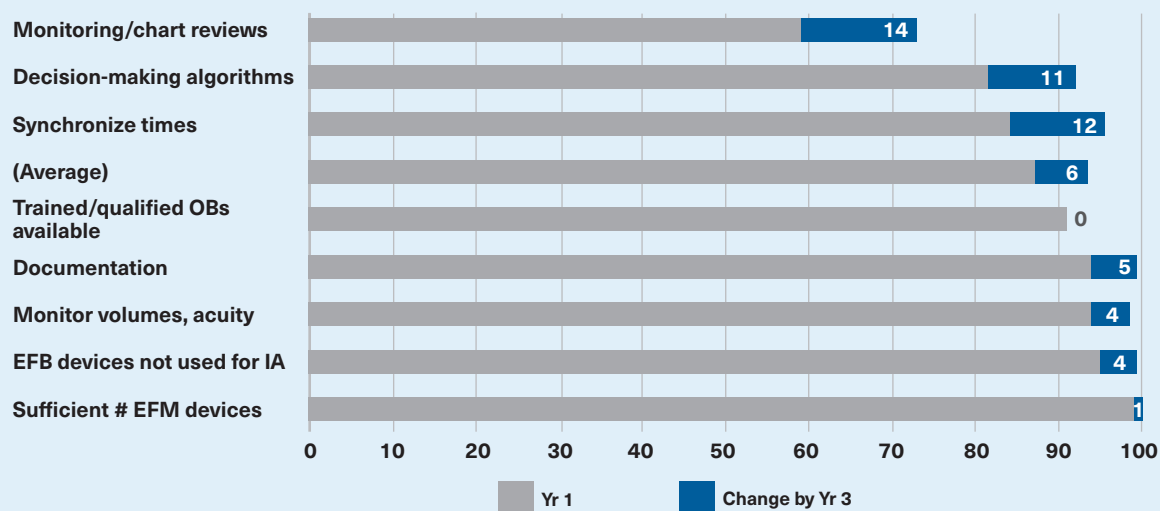
**FIGURE 1**  
RESULTS FROM THE MISMANAGEMENT OF INDUCTION/AUGMENTATION  
MEDICATION RAC MODULE

(% compliance; n=53)



**FIGURE 2**  
RESULTS FROM THE FAILURE TO MONITOR (AND DOCUMENT)  
FETAL STATUS RAC MODULE

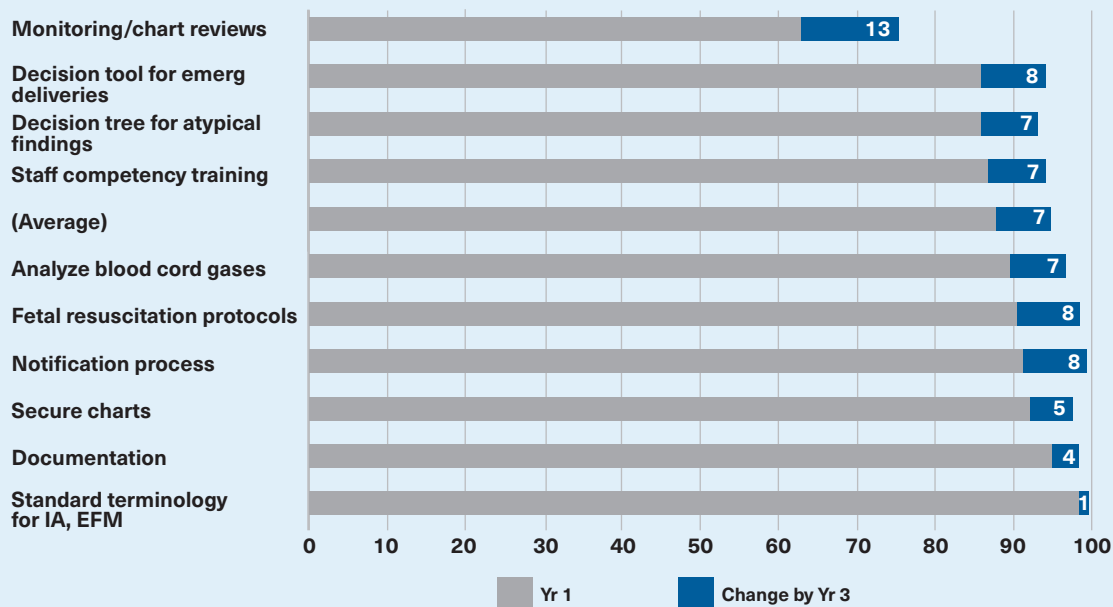
(% compliance; n=53)



**FIGURE 3**

**RESULTS FROM THE FAILURE TO INTERPRET/RESPOND TO ABNORMAL FETAL STATUS RAC MODULE**

(% compliance; n=53)



**FIGURE 4**

**RESULTS FROM THE FAILURE TO COMMUNICATE FETAL STATUS RAC MODULE. THIS MODULE WAS ONE OF TOP 5 MODULES WITH THE MOST IMPROVED COMPLIANCE SCORE I.E. A 30% IMPROVED OVERALL SCORE BETWEEN YEARS ONE AND THREE.**

(% compliance; n=53)

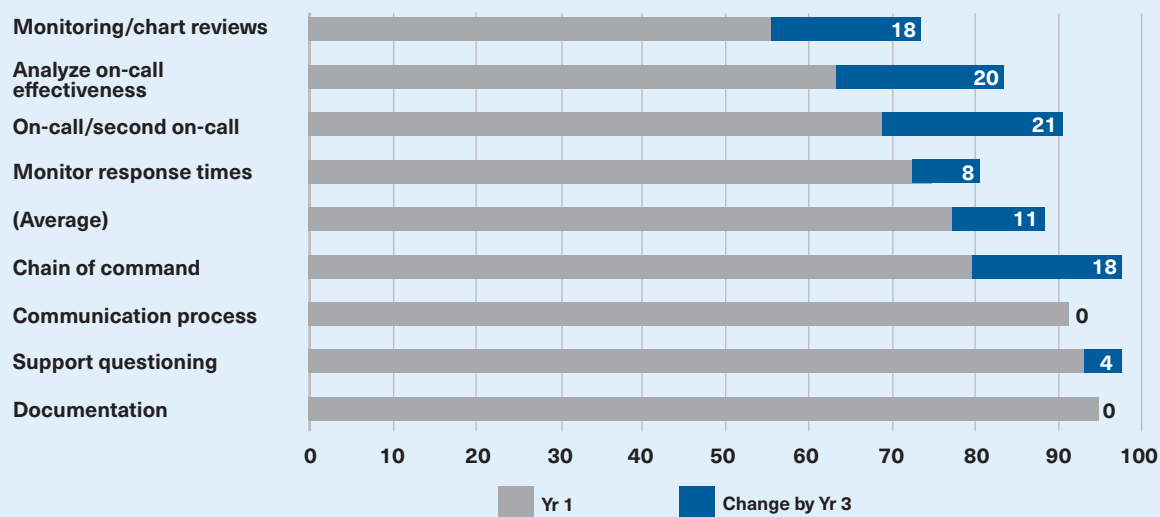


FIGURE 5

RESULTS FROM THE FAILURE TO IDENTIFY/MONITOR HYPERBILIRUBINEMIA RAC MODULE

(% compliance; n=53)

