**REPORT ON SUMMARY OF
TEAM TRAINING PROGRAMS**

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Prepared for:

Canadian Patient Safety Institute

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Appendix A – Team Training Program Matrix

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Introduction

The following report provides a summary of team training programs. All program summaries have been reviewed by program representatives with the exception of three. In the case of Medical Team Management, researchers were unable to identify a program delivery organization. For Geriatrics Interdisciplinary Team Training, a program representative was identified, but did not respond to our requests. Finally, a representative of Team Performance Plus initially agreed to our request but was unable to fulfill it.

CRM-BASED TRAINING PROGRAMS

1.0   CRM – Crew Resource Management

1.1   Background

Crew Resource Management's (CRM's) overarching goal is to organize a group of individuals to think and act as a team with the common goal of safety. There is no standard curriculum in CRM, as it is tailored to the specific organization's needs.[1]

1.1.1 Curriculum details

‣ CRM is a team-based training program originally developed by the aviation industry in response to critical and fatal flight team errors. CRM was first applied to health care in 1994.
‣ CRM involves an interdisciplinary approach that includes team members with diverse backgrounds and types of education. Team members may include clinical staff such as nurses, physicians, students, technicians, social workers, and other professionals and non-professionals.[2]
‣ The goal of safety is realized through training in inquiry and information gathering, assertive advocacy, conflict resolution, decision making, evaluation, and feedback.[3]

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[1]   Oriol, M. D. (2006). Crew Resource Management: Applications in healthcare organizations. *The Journal of Nursing Administration*, *36*(9), 402–406.

[2]   Oriol, M. D. (2006). Crew Resource Management: Applications in healthcare organizations. *The Journal of Nursing Administration*, *36*(9), 402–406.

[3]   McConaughey, E. (2008, April). Crew Resource Management in healthcare. *Journal of Perinatal & Neonatal Nursing, 22*(2), 96–104.

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1.1.2 Key concepts

CRM training involves concepts including teamwork and communication, but also personal responsibilities.

Table 1: Key concepts emphasized in CRM training[4]
Managing fatigue and workload; stress management
Creating and managing a team
Recognizing adverse situations
Cross-checking and communicating; assertiveness
Developing and applying shared mental models for decision making
Situational awareness
Giving and receiving performance feedback

1.1.3 Skills

As shown in Table 2, CRM training seeks to develop interpersonal and cognitive skills.

Table 2: CRM skills[5]
Interpersonal skills
Communication (verbal/nonverbal)
Shared mental model
Teamwork - members empowered and encouraged to contribute
Leadership/'followership'
Cognitive skills
Situational awareness
Preparation and planning
Assertive intervention
Vigilance
Problem solving
Decision making

1.1.4 Tools

Many communication tools are utilized in CRM to develop an agreed upon set of behaviour and that improve communication and support effective teamwork. These tools are shown in Table 3.

Table 3: Tools used in CRM
Tools
Situation-Background-Assessment-Recommendation (SBAR)
Briefings
Debriefings
Closed Communication Loops

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4   McConaughey, E. (2008, April). Crew Resource Management in healthcare. *Journal of Perinatal & Neonatal Nursing, 22*(2), 96–104.

5   McConaughey, E. (2008, April). Crew Resource Management in healthcare. *Journal of Perinatal & Neonatal Nursing, 22*(2), 96–104.

1.2   Applicability to Canadian health care

What is the applicability of the program to clinical health care professions (those who provide clinical care)?

‣ All CRM-based training programs in health care focus on training multidisciplinary teams. This is an important feature, as it facilitates the development of an agreed upon set of behaviours to ensure effective teamwork.[6]

What is the applicability of the program to non-clinical health care professions (those who may interact with patients, but do not provide clinical care)?

‣ CRM is applicable to any professional setting where a group of experts must function as a team to accomplish the assigned task safely and efficiently.

What is the applicability of the program to administrators?

‣ If administrators are not trained in the behaviours and do not model the behaviours, then an organization has no chance of successfully sustaining the performance improvements from the training.

Is the program applicable to the various levels of health care (i.e., acute care, long-term care, community, etc.)?

‣ CRM training programs have been used—but not limited to—in operating rooms, anaesthesia departments, emergency departments, intensive care units, as well as labour and delivery departments.[7]

‣ The training programs are tailored to the specific needs of the organization or department.[8]

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[6]   Fleming, M., & Wentzell, N. (n.d.). Evaluating the impact of CRM training in the operating room. CN Centre for Occupational Health and Safety, Saint Mary's University, Halifax, Nova Scotia. Retrieved from http://www.patientsafetyinstitute.ca/English/research/studentships/CPSI%20Studentship%20Project%20Summaries/Mark%20Fleming,%20Saint%20Mary%E2%80%99s%20University.pdf

[7]   McConaughey, E. (2008, April). Crew Resource Management in healthcare. *Journal of Perinatal & Neonatal Nursing, 22*(2), 96–104.

[8]   McConaughey, E. (2008, April). Crew Resource Management in healthcare. *Journal of Perinatal & Neonatal Nursing, 22*(2), 96–104.

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Is the content of this program applicable to a Canadian context?

▸ There is limited knowledge on how Canadian organizations have addressed the issue of patient safety. However, similarities can be drawn from studies conducted in other countries (US, Australia, Great Britain). Changes addressing patient safety in a Canadian context must take into account the current structures and resources of the Canadian system.[9]

▸ Managing Obstetrical Risk Efficiently (MORE OB) (which is CRM-based) was developed by the Society of Obstetricians and Gynaecologists of Canada.[10]

▸ There is evidence of the implementation of CRM-based training tools in Canada.

1.3   Delivery

What modes of delivery are used in this program?

▸ Training tools include simulators, lectures, and videos, which are targeted at teamwork knowledge, skills, and attitudes.

Are adult learning principles utilized (motivation, experience, level of engagement, application of learning)?

▸ Adult learning principles are utilized in CRM.

How much time is required to prepare for the delivery of or participation in this program?

▸ As CRM is a set of principles and not a training program, preparation for delivery is not applicable.

What is the expected duration of delivering the program? Does it require multiple dates or is it delivered at one time?

▸ All CRM-based training programs are simulation- or classroom-based, or both.

▸ As CRM is a set of principles and not a training program, expected duration of delivery is not applicable.

What are the costs associated with this program including proprietary, delivery, personnel, and travel?

▸ As CRM is a set of principles and not a training program, costs are not applicable.

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9   Baker, G. R., & Norton, P. (n.d.). Patient safety and healthcare error in the Canadian healthcare system. A report to Health Canada. Retrieved from http://www.hc-sc.gc.ca/hcs-sss/alt_formats/hpb-dgps/pdf/pubs/2001-patient-securit-rev-exam/2001-patient-securit-rev-exam-eng.pdf

10   Sundar, E., Sundar, S., Pawlowski, J., Blum, R., Feinstein, D., & Pratt, S. (2007). Crew Resource Management and team training. *Anesthesiology Clinics, 25*, 283–300.

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1.4   Outcomes

Is this program based on any specific research or methodology? If so, are participants expected to integrate this research or methodology into their own activities?

‣ CRM is based on cockpit resource management originally developed in the airline industry.

Is there a focus on behaviour changes and/or use of behaviour science?

‣ Human factors (which CRM falls under the domain of) is a multidisciplinary field that examines optimizing human performance and reducing human error. It incorporates the methods and principles of the behavioural and social sciences, engineering, and physiology.[11]

‣ CRM operates under the belief that there are identifiable and teachable behaviours that are crucial to high-risk environments.[12]

Does this program aim to change behaviour? If yes, is the change sustainable and measureable?

‣ CRM creates an organizational environment where "specific cooperative and communicative behaviours are defined, acknowledging that technology, communication, and process change need to work in tandem to achieve maximum effectiveness."[13]

‣ CRM in the aviation industry generally has been shown to produce positive reactions, enhance learning, and promote desired behavioural changes.[14,15]

‣ The process of team training is often delivered in the 'train the trainer' model, where trainers train and implement behaviours and expectations in other team members. Monitoring and evaluations are used to sustain behaviours.[16]

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[11]   U.S. Department of Transportation Federal Aviation Office. (2004, January 22). Crew Resource Management training. Retrieved September 21, 2010, from http://rgl.faa.gov/Regulatory_and_Guidance_Library/rgAdvisoryCircular.nsf/0/80038cf51aace53686256e24005cbb23/$FILE/AC120-51e.pdf

[12]   Oriol, M. D. (2006). Crew Resource Management: Applications in healthcare organizations. *The Journal of Nursing Administration*, *36*(9), 402–406.

[13]   Oriol, M. D. (2006). Crew Resource Management: Applications in healthcare organizations. *The Journal of Nursing Administration*, *36*(9), 402–406.

[14]   Salas, E., Rhodenizer, L., Bowers, C. A. (2000). The design and delivery of Crew Resource Management training: exploiting available resources. *Hum Factors*, *42*(3), 490–511.

[15]   Salas, E., Burke, C. S., Bowers, C. A., et al. (2001). Team training in the skies: does Crew Resource Management (CRM) training work? *Hum Factors, 43*(4), 641–74.

[16]   Sundar, E., Sundar, S., Pawlowski, J., Blum, R., Feinstein, D., & Pratt, S. (2007). Crew Resource Management and team training. *Anesthesiology Clinics, 25*, 283–300.

What outcomes are expected?

> ‣ According to one source, there is little research on the effects of CRM training on patient safety. It was stated that most researchers agree that the measurability of the outcomes are difficult, as "there is no way to tell if reporting reflects the actual number of near-misses and untoward events."[17]

> ‣ According to another source, multiple peer-reviewed studies have documented that teamwork training and checklists reduce preventable errors and medical malpractice suits, and increase the safety and quality of patient care. Specifically, "this research has documented the relationship between teamwork and improved clinical processes and patient outcomes such as reduced medical errors, improved surgical team performance, better provider adherence to clinical guidelines, lower lengths of hospital stay, greater gains in patient functional status, and reduced patient mortality."[18]

1.5   Key contacts

> ‣ Although much there is a vast amount of research on CRM-based training programs, no organization who offered CRM training was identified.

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[17]   Oriol, M. D. (2006). Crew Resource Management: Applications in healthcare organizations. *The Journal of Nursing Administration*, *36*(9), 402–406.

[18]   Harden, S. (N.D.). Six Things Every Physician in the OR Needs to Know About Teamwork Training and Checklists.

2.0   TPP – Team Performance Plus

2.1   Background

Team Performance Plus (TPP) is an integrated team training program that implements a team-based culture of patient safety in the hospital environment by preparing organizational leaders to be champions and coaches among staff.[19]

2.1.1 Curriculum details

▸ Developed in 2005, TPP is a CRM classroom-based multi-disciplinary team training program developed through a partnership between the Harvard Medical School teaching hospital Beth Israel Deaconess Medical Center (BIDMC), the American Institute of Research, and the U.S. Department of Defense.[20]

▸ TPP is taught by Master Trainers from BIDMC.[21]

▸ TPP prepares organizational leaders to be champions and coaches among staff through training, infrastructure, and tools.[22]

2.1.2 Program structure

TPP training involves a one-year, or possibly two-year, program structure. See Table 4.

Table 4: TPP program structure					
Phase	**Year**	**Steps**	**Duration**	**Location**	**Activities**
Train, Implement & Measure	1	1 – Prepare	1 day	On site	Administration
					Orientation
					Unit assessment
					Staff Q&A
					Recommendations for success
		2a – Train **or**	3 days	BIDMC	Train-the-trainer sessions
					Site visit to BIDMC for team observation
		2b – Train	2–3 days	On site	Direct-to-staff training by Master Trainers
					Advanced training for program champions
		3 – Support and Measure	Ongoing	Remote	Continued advice and coaching from Master Trainers
					Adverse Outcome Index reports
					Follow-up visit to review progress and celebrate results
Sustain (optional)	2	4 – Sustain	Ongoing	Remote	Follow-up advice and coaching from Master Trainers
					TPP refresher materials
					Quarterly conference call with TPP expert and peer hospitals
					Updated obstetrical guidelines
					Custom patient safety publications
					Optional consultative service packages

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[19]   Team Performance Plus. (n.d.). *Team Performance Plus: Engage your Culture of Patient Safety.* [Brochure]. Retrieved from http://www.rmfstrategies.com/tpp/documents/cricormf_TPP_web.pdf

[20]   Team Performance Plus. (n.d.). *Team Performance Plus: Engage your Culture of Patient Safety.* [Brochure]. Retrieved from http://www.rmfstrategies.com/tpp/documents/cricormf_TPP_web.pdf

[21]   Team Performance Plus. (n.d.). *Team Performance Plus: Engage your Culture of Patient Safety.* [Brochure]. Retrieved from http://www.rmfstrategies.com/tpp/documents/cricormf_TPP_web.pdf

[22]   Team Performance Plus. (n.d.). *Team Performance Plus: Engage your Culture of Patient Safety.* [Brochure]. Retrieved from http://www.rmfstrategies.com/tpp/documents/cricormf_TPP_web.pdf

2.1.3 Tools

Communication tools utilized in TPP are shown in Table 5.

Table 5: Tools used in TPP
Tools
SBAR
Advocacy
Shared language

2.2   Applicability to Canadian health care

What is the applicability of the program to clinical health care professions (those who provide clinical care)?

‣ TPP involves senior and frontline clinical staff involved in obstetric care, including obstetricians (OBs), midwives, nurses, and anesthesiologists.[23,24]

What is the applicability of the program to non-clinical health care professions (those who may interact with patients, but do not provide clinical care)?

‣ No information found.

What is the applicability of the program to administrators?

‣ No information found.

Is the program applicable to the various levels of health care (i.e., acute care, long-term care, community, etc.)?

‣ TPP was originally developed for use in obstetric departments and is now being expanded to other areas such as emergency medicine and surgery.[25]

Is the content of this program applicable to a Canadian context?

‣ TPP was developed in an American context.

‣ TPP involves the option of training at BIDMC.

‣ No information on application to Canadian context was found.

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23   Team Performance Plus. (n.d.). *Team Performance Plus: Engage your Culture of Patient Safety.* [Brochure]. Retrieved from http://www.rmfstrategies.com/tpp/documents/cricormf_TPP_web.pdf

24   Mann, S., Marcus, R., & Sachs, B. P. (2006). Lessons from the cockpit: how team training can reduce errors on L&D. *Contemporary OB gyn, 51*, 32–45.

25   Team Performance Plus. (n.d.). *Team Performance Plus: Engage your Culture of Patient Safety.* [Brochure]. Retrieved from http://www.rmfstrategies.com/tpp/documents/cricormf_TPP_web.pdf

2.3   Delivery

What modes of delivery are used in this program?

▸ TPP employs a classroom-based approach taught by nurse and physician Master Trainers.

As shown in Table 6, multiple modes of delivery are employed in TPP.

Table 6: Modes of delivery in TPP
Modes of delivery
Train-the-trainer sessions
Direct-to-staff training
Advanced coach training
Site visit

Are adult learning principles utilized?

▸ No information found.

How much time is required to prepare for the delivery of or participation in this program?

▸ As shown above in Table 4, preparation for the program requires a single day on site at the hospital. Preparation includes administration, orientation, unit assessment, staff Q&A, and TPP recommendations.

What is the expected duration of delivering the program? Does it require multiple dates or is it delivered at one time?

▸ There are two options for the training component of TPP. The first option involves three consecutive days of train-the-trainer training and site visit. The second option involves two or three consecutive days of direct-to-staff and advanced training.

▸ As shown above in Table 4, full delivery of the program from preparation through to sustainability is expected to take two years. Hospitals have the option to complete the program in one year by omitting the sustainability piece.

What are the costs associated with this program including proprietary, delivery, personnel, and travel?

▸ The program is delivered to hospitals on a fee-for-service basis.[26]

▸ TPP is a proprietary team training program.[27]

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[26]   Team Performance Plus. (n.d.). *Team Performance Plus: Engage your Culture of Patient Safety.* [Brochure]. Retrieved from http://www.rmfstrategies.com/tpp/documents/cricormf_TPP_web.pdf

[27]   Sundar, E., Sundar, S., Pawlowski, J., Blum, R., Feinstein, D., & Pratt, S. (2007). Crew Resource Management and Team Training. *Anesthesiology Clinics, 25*, 283–300.

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2.4 Outcomes

Is this program based on any specific research or methodology? If so, are participants expected to integrate this research or methodology into their own activities?

‣ No information found.

Is there a focus on behaviour changes and/or use of behaviour science?

‣ TPP focuses on training in team behaviours.[28]

Does this program aim to change behaviour? If yes, is the change sustainable and measureable?

‣ To measure change, TPP, in partnership with the National Perinatal Information Center (NPIC), provides an OB-specific Adverse Outcome Index (AOI). Pre- and post-training reports allow hospitals to track changes and benchmark against other organizations trained in TPP.[29]

What outcomes are expected?

‣ BIDMC notes that early indications show a decrease in AOI for TPP-trained departments.[30]

2.5 Key contacts

‣ TPP training is delivered through the Harvard Risk Management Strategies Foundation.

‣ Website: http://www.rmfstrategies.com/tpp/

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28 Team Performance Plus. (n.d.). *Team Performance Plus: Engage your Culture of Patient Safety.* [Brochure]. Retrieved from http://www.rmfstrategies.com/tpp/documents/cricormf_TPP_web.pdf

29 Team Performance Plus. (n.d.). *Team Performance Plus: Engage your Culture of Patient Safety.* [Brochure]. Retrieved from http://www.rmfstrategies.com/tpp/documents/cricormf_TPP_web.pdf

30 Mann, S., Marcus, R., & Sachs, B. P. (2006). Lessons from the cockpit: how team training can reduce errors on L&D. *Contemporary OB gyn, 51*, 32–45.

3.0   TOMS – Team Oriented Medical Simulation

3.1   Background

Team Oriented Medical Simulation (TOMS) training addresses potential patient safety threats through better workload management, problem-solving, and decision-making skills.[31]

3.1.1 Curriculum details

‣ TOMS employs the simulator-based approach of CRM. No actors are involved in the simulation.[32]

‣ TOMS is considered a scaled-back version of Anesthesia Crisis Resource Management (ACRM). While ACRM focuses on the anesthesia crew, TOMS provides interdisciplinary training.[33]

3.1.2 Program structure

The TOMS training program involves three one-hour phases.[34] See Table 7.

Table 7: TOMS program structure			
Phase	Length	Activity	Details
1	1 hour	Briefing	Highlighting of teamwork concepts such as situational awareness, communication, conflict resolution, and decision making.
2	1 hour	Simulated laparoscopic and anesthetic procedures	Simulation uses a simulator mannequin.
3	1 hour	Debriefing	Team-led debriefing using review of recorded simulation. Debriefing is used to diagnose problems and identify strategies for improvement.

3.1.1 Tools

Many communication tools are utilized in TOMS to develop an agreed-upon set of behaviours and that improve communication and support effective teamwork. These tools are shown in Table 8.

Table 8: Tools used in TOMS[35]
Tools
Time outs
Feedback loops
Structured briefings
Structured debriefings
WHO checklists

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[31]   Agency for Healthcare Research and Quality. (n.d.). *Medical Teamwork and Patient Safety.* Retrieved October 1, 2010, from http://www.ahrq.gov/qual/medteam/medteam4.htm

[32]   The Human Factor Group. (n.d.). *The TOMS project.* Retrieved October 1, 2010, from www.medana.unibas.ch/eng/team/hufa1.htm

[33]   Baker, P. B., Gustafson, S., Beaubien, J. M., Salas, E., & Barach, P. (n.d.). Medical Team Training Programs in Health Care. *Advances in Patient Safety*, *4*, 253–267.

[34]   The Human Factor Group. (n.d.). *The TOMS project.* Retrieved October 1, 2010, from www.medana.unibas.ch/eng/team/hufa1.htm

[35]   Personal Communication. University of Basel. November12, 2010.

3.2   Applicability to Canadian health care

What is the applicability of the program to clinical health care professions (those who provide clinical care)?

▸ The interdisciplinary team training includes all personnel involved in the operating room (OR), including anesthetists, surgeons, anesthetic nurses, and scrub nurses.[36]

What is the applicability of the program to non-clinical health care professions (those who may interact with patients, but do not provide clinical care)?

▸ Training is only applicable to those working within the OR.[37]

What is the applicability of the program to administrators?

▸ Training is only applicable to those working within the OR.[38]

Is the program applicable to the various levels of health care (i.e., acute care, long-term care, community, etc.)?

▸ TOMS training is used in laparoscopic and obstetrical procedures and in ICU situations.

Is the content of this program applicable to a Canadian context?

▸ The TOMS training program was developed in Basel, Switzerland, where the operation theatre simulation resides.[39] Currently, courses are only run for the University of Basel and associated hospitals.[40]

▸ The content of the training (providing training for challenging situations without risk of patient harm) is applicable to all countries.

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[36]   Agency for Healthcare Research and Quality. (n.d.). *Medical Teamwork and Patient Safety.* Retrieved October 1, 2010, from http://www.ahrq.gov/qual/medteam/medteam4.htm
[37]   Personal Communication. University of Basel. November 12, 2010.
[38]   Personal Communication. University of Basel. November12, 2010.
[39]   The Human Factor Group. (n.d.). *The TOMS project.* Retrieved October 1, 2010, from www.medana.unibas.ch/eng/team/hufa1.htm
[40]   Personal Communication. University of Basel. November 12, 2010.

3.3 Delivery

What modes of delivery are used in this program?

▸ Briefings, simulation, and debriefings are used to address potential patient safety threats through better workload management, problem-solving skills, and decision-making skills.

Are adult learning principles utilized (motivation, experience, level of engagement, application of learning)?

▸ Adult learning principles are utilized. The standards of teamwork are communicated before the simulation starts. However, these standards can be revised and adjusted by the experiences of the participants. Each participant is judged by a standard based on their previous knowledge and experience.[41]

How much time is required to prepare for the delivery of or participation in this program?

▸ The simulation requires brief preparation the day before the simulation.

What is the expected duration of delivering the program? Does it require multiple dates or is it delivered at one time?

▸ The program is delivered over two consecutive days. The first day involves brief preparation. The simulation occurs on the second day over one three-hour period.[42]

What are the costs associated with this program including proprietary, delivery, personnel, and travel?

▸ No information is available as courses are only run internally.[43]

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[41] Personal Communication. University of Basel. November 12, 2010.
[42] Personal Communication. University of Basel. November 12, 2010.
[43] Personal Communication. University of Basel. November 12, 2010.

3.4   Outcomes

Is this program based on any specific research or methodology? If so, are participants expected to integrate this research or methodology into their own activities?

▸ The program is not directly based on specific research of methodology; however, the program works in collaboration with Swiss International Airlines. In addition, University of Basel psychology graduate students conduct research during the simulations.[44]

Is there a focus on behaviour changes and/or use of behaviour science?

▸ Simulation has recently been used for investigating the determinants of learning and acquiring skills, and teaching anesthesia providers to handle critical incidents by utilizing available resources. It has been found that anesthesiologists develop skills faster this way than when traditionally taught on the job. While it is yet to be determined if simulator-based training improves safety or quality of anesthesia services over other training approaches, these simulations provide insight into task characteristics, workload and vigilance of anesthesia personnel, and factors that affect anesthesiologists' performance.[45]

Does this program aim to change behaviour? If yes, is the change sustainable and measureable?

▸ Evaluation data of TOMS is limited. In *Participant Evaluation of Team Oriented Medical Simulation,* Sexton et al. found that most participants responded positively to the training.[46]

▸ There is no evidence of post-training changes to participants' knowledge or skill base, changes in organizational effectiveness, or degree of behavioral transfer.[47]

3.5   Key contacts

▸ Developed and offered through the University of Basel, Switzerland.

▸ Website: http://www.medana.unibas.ch/eng/team/hufa22.htm

▸ Dr. Daniel Scheidegger, Professor, University of Basel, dscheidegger@uhbs.ch

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[44]   Personal Communication. University of Basel. November 12, 2010.

[45]   The Human Factor Group. (n.d.). *The TOMS project.* Retrieved October 1, 2010, from www.medana.unibas.ch/eng/team/hufa1.htm

[46]   Sexton, J. B., Marsch, S. C., Helmreich, R. L., et al. (1998). Participant evaluation of team oriented medical simulation. *Simulators in Anesthesiology Education*, 109–110.

[47]   Agency for Healthcare Research and Quality. (n.d.). *Medical Teamwork and Patient Safety.* Retrieved October 1, 2010, from http://www.ahrq.gov/qual/medteam/medteam4.htm

4.0   LifeWings/DOM – Dynamic Outcomes Management

4.1   Background

LifeWings aims to increase patient safety, reduce medical errors, and improve quality of health care by improving teamwork and communication skills, creating and implementing hardwired safety tools and educating leadership on the strategies needed to permanently sustain performance improvements. [48]

4.1.1 Curriculum details

▸ Developed by Crew Training International in 1997, DOM has been modified and expanded based on current research and methodology and was renamed LifeWings in 2005. [49]

▸ LifeWings is a CRM-based team training program with components of classroom training; In Situ simulation; implementation of hardwired safety tools; leadership training; organizational structure revision; data collection and analysis; and Master train-the-trainer.

4.1.2 Program structure

The LifeWings program involves five phases, which integrate a series of on-site training sessions for leadership, physicians, and staff together with customized, site-built safety tools (checklists, communication scripts, standard protocols, etc.). See Table 9 for program structure details.

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[48]   Personal Communication. LifeWings. November 2, 2010.
[49]   Baker, P. B., Gustafson, S., Beaubien, J. M., Salas, E., & Barach, P. (n.d.). Medical Team Training Programs in Health Care. *Advances in Patient Safety*, *4*, 253–267.

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Table 9: LifeWings program structure[50,51]		
Phase	Title	Details
1	**Leadership development**	Equips executive team and managers with the tools and management skills to internally lead the project and create a permanent organizational change. Includes a presentation to physicians, executives, and departmental leadership, Leadership Development Institute; safety climate survey; and program coaching.
2	**Customized skill-based training**	An on-site assessment allows for customization of the Teamwork Skills Workshops that ensure the training targets specific and needed culture-changing behaviours.
3	**In Situ simulation**	Structured scenarios, conducted with a standardized patient and wired mannequin. It is used to uncover system processes and team skills strengths and weaknesses. It is also used to lock-in skills improvements.
4	**Hardwired Safety Tools (HST)**	Using Lean methods, LifeWings HST workshops produce operating systems that help to improve and sustain the teamwork between physicians and staff, their talent, and productivity.
5	**Development of measurement systems to ensure program success**	Outcomes measured are developed in consultation with the organization in an effort to document areas of improvement desired by the organization.
6	**Lifetime results**	The train-the-trainer program qualifies organizational personnel to conduct LifeWings Patient Saving Training Sessions.

Program training is typically carried out by a team of pilots, nurses, physicians, and risk management specialists. All clinical personnel have aviation CRM and safety systems experience, including two physicians who were NASA astronauts. The program involves up to 35 days on-site.[52] See Table 10.

Table 10: LifeWings training program structure[53]			
Component	Length	Timeline	Details
1	24 hours	Month 1	Leadership training: recruiting physician partners, leadership course, Leadership Development Institute, measurement program, leadership coaching
2	64 hours	Month 2	Site assessment, needs analysis, In Situ simulation, teamwork skills, training sessions
3	70 hours	Month 3	Create, train, educate, beta-test, implement, revise, coach, and assess hardwired safety tools
4	20–30 hours	Month 4– 6	Collect and analyze data
5	240 hours	Month 5–6	Interview, select, hire, train, and qualify Master train-the-trainers

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[50]   LifeWings. (n.d.). *How the LifeWings Program Improves Patient Safety.* Retrieved October 1, 2010, from
            http://www.saferpatients.com/services/risk-management-training.htm
[51]   Personal Communication. LifeWings. November 2, 2010.
[52]   Personal Communication. LifeWings. November 2, 2010.
[53]   Personal Communication. LifeWings. November 2, 2010.

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4.1.3 Skills

As shown in Table 11, LifeWings seeks to develop team knowledge and skills.

Table 11: LifeWings knowledge and skills
Team management
Recognizing adverse events
Communications
Decision making
Distribution of workload
Debriefing

4.1.4 Tools

Many communication tools are utilized in LifeWings to develop an agreed-upon set of behaviours and that improve communication and support effective teamwork. These tools are shown in Table 12.

Table 12: Tools used in LifeWings[54]
Tools
Challenge and response checklists
Communications scripts
Standard protocols
Huddles
Debriefing

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[54] LifeWings. (n.d.). *Defining Patient Safety.* Retrieved October 1, 2010, from http://www.saferpatients.com/services/risk-management-training.htm

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4.2   Applicability to Canadian health care

What is the applicability of the program to clinical health care professions (those who provide clinical care)?

▸ LifeWings provides interdisciplinary team training and safety system implementation to any clinical team and its leaders in hospitals, day surgery units, in-patient wards, out-patient care, clinics, and office settings. LifeWings has been implemented in surgical services (including ortho, cardiovascular, cardiothoracic, neuro, general, transplant, oral, ears, nose, and throat [ENT], and trauma); cath labs; labour and delivery; emergency medicine; endoscopy; interventional radiology; family medicine; neonatal intensive-care unit [NICU]; surgical intensive-care unit [SICU]; pediatric intensive-care unit [PICU]; post-anaesthesia care unit [PACU]; sterile processing; and oncology, among others.[55]

What is the applicability of the program to non-clinical health care professions (those who may interact with patients, but do not provide clinical care)?

▸ LifeWings has been implemented with administrators, housekeeping, building maintenance, construction, sterile processing, and pharmacy, among others.[56]

What is the applicability of the program to administrators?

▸ Leadership development involves training of executive team and managers.

Is the program applicable to the various levels of health care (i.e., acute care, long-term care, community, etc.)?

▸ LifeWings training and systems apply to all levels of care.[57]

Is the content of this program applicable to a Canadian context?

▸ LifeWings has been implemented in Sweden and Malaysia and will soon be implemented in Italy, the Netherlands, Belgium, Portugal, Spain, and Switzerland.[58]

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[55]   Personal Communication. LifeWings. November 2, 2010.
[56]   Personal Communication. LifeWings. November 2, 2010.
[57]   Personal Communication. LifeWings. November 2, 2010.
[58]   Personal Communication. LifeWings. November 2, 2010.

4.3   Delivery

What modes of delivery are used in this program?

‣ LifeWings training incorporates facilitated discussion, experiential learning, simulation, role-playing, case studies, behaviour modelling, and knowledge testing.[59]

Are adult learning principles utilized?

‣ Adult learning principles are utilized.[60]

How much time is required to prepare for the delivery of or participation in this program?

‣ The program requires preparation by administrators (20–30 hours); the project coordinator (5 hours per week for 6 months); clinical staff (5 hours); and the 6–8 personnel project support team (30 hours).[61]

What is the expected duration of delivering the program? Does it require multiple dates or is it delivered at one time?

‣ The program involves 9 site visits encompassing approximately 35 days on-site. The typical program requires 5 to 6 months to complete in each unit or department.

What are the costs associated with this program including proprietary, delivery, personnel, and travel?

‣ Costs range from $20, 000 to $500, 000 USD depending on the size of the hospital and scope of the implementation (one department or organization wide.)

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[59]   Baker, P. B., Gustafson, S., Beaubien, J. M., Salas, E., & Barach, P. (n.d.). Medical Team Training Programs in Health Care. *Advances in Patient Safety*, *4*, 253–267.
[60]   Personal Communication. LifeWings. November 2, 2010.
[61]   Personal Communication. LifeWings. November 2, 2010.

4.4 Outcomes

Is this program based on any specific research or methodology? If so, are participants expected to integrate this research or methodology into their own activities?

▸ LifeWings is based on the research and methodology of the NASA/University of Texas/ Federal Aviation Administration [FAA] Research Group and their work in CRM, as well as the research and methodology of the Agency for Healthcare Research and Quality (AHRQ) TeamSTEPPS program. The LifeWings simulation methodology is based on the work of Capt. William Hammon of Western Michigan University.[62]

Is there a focus on behaviour changes and/or use of behaviour science?

▸ LifeWings is founded on the belief that on its own, behavioural training will not result in a long-term organizational change regarding patient safety. In addition to behavioural change, providing organizations with strategies and tools aimed at improving patient safety will foster a long-term organizational change.[63]

Does this program aim to change behaviour? If yes, is the change sustainable and measureable? What outcomes are expected?

▸ As indicated in Phase 4: *Development of Measurement Systems to Ensure Program Success* of the LifeWings program structure, desired outcomes are measured throughout the training process.

LifeWings has achieved the following measureable results:

Better teams and teamwork
▸ Statistically significant improvement in employee satisfaction survey results
▸ Perioperative services RN turnover as low as 2%
▸ 34% improvement in willingness to speak up and advocate for patient safety
▸ 118% improvement in willingness to discuss ways to prevent errors from happening again
▸ 196% improvement in willingness to question decisions or actions of those with more authority
▸ Reduction in nurse-physician occurrence reports
▸ 30% improvement in perception of effectiveness of MD-RN communication skills
▸ Employee turnover well below the hospital mean
▸ Improvement in attitudes[64]

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[62]   Personal Communication. LifeWings. November 2, 2010.

[63]   Training from fighter pilots helps some hospitals decrease medical errors. (2006). *Healthcare Financial Management.* Retrieved October 1, 2010, from http://www.saferpatients.com/news/702244_13.pdf

[64]   Eric L Grogan, MD, MPH, Renée A Stiles, PhD, Daniel J France, PhD, MPH, Theodore Speroff, PhD, John A Morris Jr, MD, FACS, Bill Nixon, MA, F Andrew Gaffney, MD, Rhea Seddon, MD, C Wright Pinson, MD, MBA, FACS. "The Impact of Aviation-based Teamwork Training on the Attitudes of Healthcare Professionals." The American College of Surgeons 2004; Vol. 199, No. 6.

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Fewer errors, rework, and waste

▸ 195% improvement in uneventful procedural cases

▸ 50.1% reduction in surgical counts errors[65]

▸ 25% decrease in medication discrepancies

▸ 20% decrease in OR equipment discrepancies

▸ 50% decrease in patient ID discrepancies

▸ 32% decrease in malpractice claims dollars per surgical discharge

▸ Documented avoidance of wrong surgeries

▸ Documented avoidance of serious medication errors

▸ Eliminated OR sentinel events

Improved efficiency and reliability

▸ 51% improvement in OR turnaround times

▸ Total elimination of wrong surgeries

▸ 75% improvement in pre-procedure antibiotic administration

▸ Improvement in employee satisfaction

▸ Improvement in adherence to diabetes treatment protocols[66]

4.5   Key contacts

▸   LifeWings also offers TeamSTEPPS training

▸   Website (LifeWings): www.saferpatients.com

▸   LifeWings contact information: 1-800-290-9314, sharden@saferpatients.com

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[65]   RM Rivers, Diane Swain, and Bill Nixon, "Using aviation safety measures to enhance patient outcomes," AORN Journal 2003; 77:158.

[66]   Taylor, C.R., Hepworth, J.T., Buerhaus, P.I., Dittus, R., Speroff, T. (September, 2005).Using Crew Resource Management to improve
diabetes care in a primary care setting. Proceedings of the 2nd Safety Across High-Consequence Industries conference. St. Louis, MO.

5.0   TOPS – Triad for Optimal Patient Safety

5.1   Background

Triad for Optimal Patient Safety (TOPS) is a multidisciplinary and multi-centre project aimed at improving unit-based safety culture through teamwork and communication initiatives.[67]

5.1.1 Curriculum details

‣ TOPS is a classroom-based CRM training program.

5.1.2 Program structure

TOPS involves a three-phase structure. See Table 13.

Phase	Title	Details
Table 13: TOPS program structure[68]
1	TOPS training	A four-hour training session for multidisciplinary teams.
2	Triad Unit Safety Team (TrUST)	TrUST involves: - Building a unit-based safety infrastructure - Creating multidisciplinary teams of local experts - Developing a group of leaders and change agents - Creating processes for sustainability - Maintaining a safety culture focus (SBAR, Concerned Uncomfortable Safety (CUS) words, situational awareness)
3	Involving the patient	Goals are developed in consultation with the patient and posted in the patient's room. The patient's health care team then works together to meet the goal.

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[67] Sehgal, N., Fox, M., Vidyarthi, A., Sharpe, A., Gearhart, S., Bookwalter, T., Barker, J., Alldredge, B., Blegen, M., & Wachter, R. (2008). Multidisciplinary Teamwork Training Program: The Triad for Optimal Patient Safety (TOPS) Experience. *Journal of General Internal Medicine*, *23*(12), 2053–2057.

[68] Watcher, D., Sehgal, N., Blegen, M., & Alldredge, B. (n.d.). *Triad for Optimal Patient Safety (TOPS)* [Presentation]. Retrieved October 5, 2010, from http://www.hospitalcouncil.net/Upload/BEACON_TOPS_4-24-%2007.pdf

Phase 1: TOPS training program structure

The TOPS training phase is organized as one four-hour session attended by all members of the multidisciplinary team.[69] See Table 14 for phase 1 program structure details.

Table 14: TOPS phase 1 program structure			
Step	**Length**	**Activity**	**Details/Objectives**
1	-	Introduction	Session is introduced by a recognized organizational leader
2	20 minutes	Laying the foundation	3 objectives: - Define patient safety culture -Recognize members of the health care team - Understand the role teamwork and communication play in patient safety
3	30 minutes	First, do no harm	2 objectives: - Assess the role "systems" and individuals contribute to medical errors - Describe how effective communication and teamwork can mitigate patient harm
4	60 minutes	Health care team training lecture	3 objectives: - Practice constructing an SBAR - Integrate other communication skills into clinical case scenarios - Demonstrate how ineffective or differing communication styles impact patient care
5	1.5 hours	Small group scenarios	Participants are divided into representative groups from all disciplines to work through 2 case scenarios. 3 objectives: - Practice constructing an SBAR - Integrate other communication skills into clinical case scenarios - Demonstrate how ineffective or differing communication styles impact patient care
6	20 minutes	Closing	3 objectives: - Restate how to incorporate newly taught skills into daily practice - Discuss specific methods to improve teamwork and communication on the medical unit - Introduce upcoming initiatives to foster greater multidisciplinary education

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[69]   Sehgal, N., Fox, M., Vidyarthi, A., Sharpe, A., Gearhart, S., Bookwalter, T., Barker, J., Alldredge, B., Blegen, M., & Wachter, R. (2008). Multidisciplinary Teamwork Training Program: The Triad for Optimal Patient Safety (TOPS) Experience. *Journal of General Internal Medicine*, *23*(12), 2053–2057.

5.1.3 Phase 1: TOPS training skills

Phase 1 of TOPS cultivates a number of teamwork behaviours and communication skills related to patient safety. See Table 15.

Table 15: TOPS training skills
Teamwork behaviours
Leadership
Situational awareness
Workload management
Resource management
Briefings
Debriefings
Communication skills
SBAR
Inquiry
Advocacy
Active listening
Critical conversations

5.1.4 Tools

Many communication tools are utilized in TOPS to develop an agreed-upon set of behaviours and that improve communication and support effective teamwork.[70,71] These tools are shown in Table 16.

Table 16: Tools used in TOPS
Tools
SBAR
CUS words
Briefings
Debriefings

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[70] Sehgal, N., Fox, M., Vidyarthi, A., Sharpe, A., Gearhart, S., Bookwalter, T., Barker, J., Alldredge, B., Blegen, M., & Wachter, R. (2008). Multidisciplinary Teamwork Training Program: The Triad for Optimal Patient Safety (TOPS) Experience. *Journal of General Internal Medicine*, *23*(12), 2053–2057.

[71] Watcher, D., Sehgal, N., Blegen, M., & Alldredge, B. (n.d.). *Triad for Optimal Patient Safety (TOPS)* [Presentation]. Retrieved October 5, 2010, from http://www.hospitalcouncil.net/Upload/BEACON_TOPS_4-24-%2007.pdf

5.2   Applicability to Canadian health care

What is the applicability of the program to clinical health care professions (those who provide clinical care) and non-clinical health care professions (those who may interact with patients, but do not provide clinical care)?

‣ Unlike some other team training programs, TOPS focuses on engaging every patient care discipline. This includes nurses, pharmacists, therapists, case managers, social workers, patient care assistants, unit clerks, and custodial staff. The same classroom-based training is attended by all members.[72]

What is the applicability of the program to administrators?

‣ No mention was found of applicability of TOPS training for administrative staff.

Is the program applicable to the various levels of health care (i.e., acute care, long-term care, community, etc.)?

‣ The program is applicable to various levels of health care.[73]

Is the content of this program applicable to a Canadian context?

‣ The program is applicable to the Canadian context.[74]

5.3   Delivery

What modes of delivery are used in this program?

‣ Modes of delivery include presentations, videos with facilitated discussion, and scenario-based exercises.

‣ Phase 1: TOPS training utilizes the train-the-trainer model.

Are adult learning principles utilized?

‣ Due to the wide array of participants, TOPS aims to recognize different learning styles. This is addressed through diverse teaching methods such as presentations, videos, and exercises.[75]

How much time is required to prepare for the delivery of or participation in this program?
‣ Program length is dependent on the specific needs of the organization.[76]

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[72]   Sehgal, N., Fox, M., Vidyarthi, A., Sharpe, A., Gearhart, S., Bookwalter, T., Barker, J., Alldredge, B., Blegen, M., & Wachter, R. (2008). Multidisciplinary Teamwork Training Program: The Triad for Optimal Patient Safety (TOPS) Experience. *Journal of General Internal Medicine*, *23*(12), 2053–2057.

[73]   Personal Communication. TOPS. November 15, 2010.

[74]   Personal Communication. TOPS. November 15, 2010.

[75]   Sehgal, N., Fox, M., Vidyarthi, A., Sharpe, A., Gearhart, S., Bookwalter, T., Barker, J., Alldredge, B., Blegen, M., & Wachter, R. (2008). Multidisciplinary Teamwork Training Program: The Triad for Optimal Patient Safety (TOPS) Experience. *Journal of General Internal Medicine*, *23*(12), 2053–2057.

What is the expected duration of delivering the program? Does it require multiple dates or is it delivered at one time?

▸ The program is offered in four-hour sessions offered at multiple times.[77]

What are the costs associated with this program including proprietary, delivery, personnel, and travel?

▸ Costs vary by discipline and site.[78]

5.4   Outcomes

Is this program based on any specific research or methodology? If so, are participants expected to integrate this research or methodology into their own activities?

▸ The program was developed as an educational intervention. Its impacts were studied as a research endeavour.[79]

Is there a focus on behaviour changes and/or use of behaviour science?

▸ Similar to most educational interventions, TOPS aims to change behaviour.

Does this program aim to change behaviour? If yes, is the change sustainable and measureable? What outcomes are expected?

▸ A demonstrated improvement in safety culture has been documented.[80]

5.5   Key contacts

▸ Niraj L. Sehgal, MD, MPH; Division of Hospital Medicine, University of California, 533 Parnassus Avenue Box 0131, San Francisco, CA 94143, US (nirajs@medicine.ucsf.edu)

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[76]   Personal Communication. TOPS. November 15, 2010.
[77]   Personal Communication. TOPS. November 15, 2010.
[78]   Personal Communication. TOPS. November 15, 2010.
[79]   Personal Communication. TOPS. November 15, 2010.
[80]   Blegen, M., Sehgal, N., Alldredge, K., Gearhart, S., Auerbach, A., Wachter, R. (2010). Improving Safety Culture on Adult Medical Units Through Multidisciplinary Teamwork and Communication Interventions: the TOPS Project. *Quality and Safety Health Care, 19*, 346–350.

6.0   MedTeams

6.1   Background

The primary purpose of MedTeams is to reduce medical errors through interdisciplinary teamwork fostered through organizational culture change.[81]

6.1.1 Curriculum details

‣ MedTeams is a classroom-based CRM training program developed by Dynamics Research Corporation (DRC).

‣ Under the MedTeams curriculum, a core team is comprised of medical personnel working interdependently during a shift. A team always includes a physician and a nurse. Teams are identifiable by a distinctive item of dress. A coordinating team oversees the core team.[82]

‣ In MedTeams, each team member has a stake in maintaining patient safety and is responsible for being assertive in breaking the error chain.[83]

6.1.2 Program structure

MedTeams involves a three-phase train-the-trainer model. See Table 17.

Phase	Title	Details
3 Table 17: MedTeams program structure[84]		
1	Site assessment	The organization has the option of conducting a self-assessment or an onsite assessment with a DRC consultant.
2	Implementation	The two- to three-day train-the-trainer training involves multiple courses: MedTeams Team Coordination Course;TCC Instructor Certification Course, Culture Change Workshop, Implementation Workshop, and the Performance Evaluation Course. Online support courses are also available.
3	Sustainment	This phase recognizes that organizational change is an ongoing process. Sustainment is supported by formal and informal coaching strategies, telephone consultation, continual education, and ongoing evaluation.

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[81]   Baker, D., Gustafson, S., Beaubien, J., Salas, E., & Barach, P. (2005). Medical Team Training Programs in Health Care. *Advances in Patient Safety: From Research to Implementation, 4*, 253–267.

[82]   Agency for Healthcare Research and Quality. (n.d.). *Medical Teamwork and Patient Safety.* Retrieved October 1, 2010, from http://www.ahrq.gov/qual/medteam/medteam4.htm

[83]   Risser, D., Rice, M., Salisbury, M., Simon, R., Jay, G., & Berns, S. (1999). The Potential for Improved Teamwork to Reduce Medical Errors in the Emergency Department. *Annals of Emergency Medicine, 34*(3), 373–383.

[84]   MedTeams. (n.d.). *MedTeams Program Description.* Retrieved October 7, 2010, from http://teams.drc.com/Medteams/Home/Program_Description.htm

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6.1.3 Skills

As shown in Table 18, MedTeams seeks to develop team knowledge and skills.

Table 18: MedTeam knowledge and skills
nowledge
Maintaining team structure and climate
Execution of plans and management of workload
Knowledge of the components of teamwork
Skills
Problem-solving skills
Communication skills
Team improvement skills
Situational awareness

6.1.4 Tools

▸ No information available.

6.2   Applicability to Canadian health care

What is the applicability of the program to clinical health care professions (those who provide clinical care)?

▸ Individuals selected for the train-the-trainer course are key physicians and nurses.

▸ The trainer trains other team members in teamwork behaviours.

What is the applicability of the program to non-clinical health care professions (those who may interact with patients, but do not provide clinical care)?

▸ The course is designed for all members of the team including support staff, such as clerks in a department.[85]

What is the applicability of the program to administrators?

▸ The course applies to administrators so that they can support the clinical staff by having the same information. [86]

Is the program applicable to the various levels of health care (i.e., acute care, long-term care, community, etc.)?

▸ Currently, the curriculum is generalized to all clinical areas. Specialty area information is available for emergency departments, labour and delivery, operating room, and ambulatory care.

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[85]   Personal Communication. MedTeams. November 29, 2010.
[86]   Personal Communication. MedTeams. November 29, 2010.

Is the content of this program applicable to a Canadian context?

▸ The skills and behaviours are applicable to any healthcare setting. Minor adjustments may be needed to facilitate the presentation in Canadian healthcare.[87]

6.3   Delivery

What modes of delivery are used in this program?

▸ MedTeams is based on the train-the-trainer model of delivery.

▸ MedTeams is a classroom-based instruction course with multimedia content (slides, video segments). There is an additional simulation segment that can be done in low-fidelity (role-playing) or high-fidelity simulation environments to allow practice of the skills and behaviours.[88]

Are adult learning principles utilized?

▸ Adult learning principles are utilized.

How much time is required to prepare for the delivery of or participation in this program?

▸ This varies based on the size and complexity of the organization that is implementing the training. Instructors need to attend the train-the-trainer MedTeams training, then plan and implement the training to their staff.[89]

What is the expected duration of delivering the program? Does it require multiple dates or is it delivered at one time?

▸ The train-the-trainer course is comprised of two to three days of training.[90]

▸ The sustainment phase lasts approximately six months.

What are the costs associated with this program including proprietary, delivery, personnel, and travel?

▸ Cost is customized for each organization and is dependent on the number of instructor students who participate in the train-the-trainer program. Travel to the training venue would need to be included for the MedTeams trainers and the student instructors if applicable.[91]

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[87]   Personal Communication. MedTeams. November 29, 2010.
[88]   Personal Communication. MedTeams. November 29, 2010.
[89]   Personal Communication. MedTeams. November 29, 2010.
[90]   MedTeams. (n.d.). *MedTeams Program Description.* Retrieved October 7, 2010, from http://teams.drc.com/Medteams/Home/Program_Description.htm
[91]   Personal Communication. MedTeams. November 29, 2010.

6.4   Outcomes

Is this program based on any specific research or methodology? If so, are participants expected to integrate this research or methodology into their own activities?

▸ The program is based on research conducted by Morey et al. (2002) in *Error Reduction and Performance Improvement in the Emergency Department through Formal Teamwork Training: Evaluation Results of the MedTeams Project*.[92] Training participants are not required to integrate the research into their activities, but are expected to integrate the skills and behaviours.

Is there a focus on behaviour changes and/or use of behaviour science?

▸ MedTeams was developed by DRC and is based on the premise that most errors in health care occur from breakdowns in systems-level defences that occur over time.[93]

▸ MedTeams is based on an evaluation-driven course design. In the course design, a number of critical dimensions necessary for effective teamwork were identified. Linked to these dimensions were 48 specific, observable behaviours. Each behaviour was assigned a Behaviorally Anchored Rating Scale (BARS).[94]

Does this program aim to change behaviour? If yes, is the change sustainable and measureable? What outcomes are expected?

▸ MedTeams believes that successful teamwork requires a change in organizational culture and that teamwork is a learnable skill.[95]

6.5   Key contacts

▸ Website: http://teams.drc.com/Medteams/Home/Home.htm

▸ Director: Vinette Langford, RN, MSN. (Phone: 978-289-1911 or 978-560-3456 email: vlangford@drc.com)

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[92]   Morey, J. C., Simon, R., Jay, G.D., Wears, R.L., Salisbury, M., Dukes, K. A., Berns, S.D. (2002). Error Reduction and Performance Improvement in the Emergency Department through Formal Teamwork Training. Evaluation Results of the MedTeams Project. *HSR: Health Services Research*, 37:6, 1553-1581.

[93]   Baker, D., Gustafson, S., Beaubien, J., Salas, E., & Barach, P. (2005). Medical Team Training Programs in Health Care. *Advances in Patient Safety: From Research to Implementation, 4*, 253–267.

[94]   Baker, D., Gustafson, S., Beaubien, J., Salas, E., & Barach, P. (2005). Medical Team Training Programs in Health Care. *Advances in Patient Safety: From Research to Implementation, 4*, 253–267.

[95]   MedTeams. (n.d.). *MedTeams Program Description.* Retrieved October 7, 2010, from http://teams.drc.com/Medteams/Home/Program_Description.htm

7.0   ACRM – Anaesthesia Crisis Resource Management

7.1   Background

The aim of Anaesthesia Crisis Resource Management (ACRM) is to help anesthesiologists better manage crises by working effectively in multidisciplinary teams.[96]

7.1.1 Curriculum details

‣ ACRM is a simulator-based CRM training program.

‣ ACRM was considered state of the art in the mid-1990s. Since then, the simulation community has moved beyond the initial concept described in the document below. Since the mid-1990s, it has been recognized that by itself, ACRM is somewhat inadequate as it does not address deficits in medical knowledge and it does not address the belief that training is best done in interprofessional teams.[97]

‣ ACRM is modular-based, where, upon completion of each reading assignment, participants partake in an operating room simulation. The simulation is followed by a debriefing, which includes a review of the recorded simulation.[98]

‣ In ACRM, trainees are provided with a compilation of predetermined responses to an array of critical incidents for reference.[99]

7.1.2 Program structure

The ACRM curriculum involves three one-day courses. Each course and its goals build on the experience of the last course. See Table 19 for details.

Table 19: ACRM program structure[100]	
Stage	**Details**
ACRM1	ACRM principles and skills
ACRM2	Refresher of skills and analysis of clinical events from different perspectives
ACRM3	Leadership training, debriefing skills, and adherence to procedures

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[96]   Agency for Healthcare Research and Quality. (n.d.). *Medical Teamwork and Patient Safety.* Retrieved October 1, 2010, from http://www.ahrq.gov/qual/medteam/medteam4.htm

[97]   Personal Communication. Canadian Simulation Centre. October 29, 2010.

[98]   Baker, D., Gustafson, S., Beaubien, J., Salas, E., & Barach, P. (2005). Medical Team Training Programs in Health Care. *Advances in Patient Safety: From Research to Implementation, 4*, 253–267.

[99]   Agency for Healthcare Research and Quality. (n.d.). *Medical Teamwork and Patient Safety.* Retrieved October 1, 2010, from http://www.ahrq.gov/qual/medteam/medteam4.htm

[100]   Gaba, D., Howard, S., Fish, K., Smith, B., Sowb, Y. (2001). Simulation-based Training in Anesthesia Crisis Resource Management (ACRM): A Decade of Experience. *Simulation and Gaming, 32*(2), 175–193.

Each one-day course has a similar structure, as shown in Table 20.

Table 20: ACRM course structure[101]
One-day course structure
Pre-assigned readings to present new concepts
Course introduction and review of conceptual material
Familiarization with the simulator and local clinical environment
Group work teaching model in which participants work collectively to discuss and analyze cases
Simulation scenarios
Debriefing of simulation scenarios
Conclusion

7.1.3 Skills

ACRM focuses on development of behavioural skills, as shown in Table 21.

Table 21: ACRM behavioural skills[102]
Case orientation
Inquiries and assertion
Communications and constructive feedback
Leadership
Appropriate group climate
Anticipation and planning
Workload management and distribution
Vigilance
Re-evaluation

7.1.4 Tools

ACRM utilizes some cognitive tools to develop an agreed-upon set of behaviours and improve communication and support effective teamwork. These tools are shown in Table 22.

Table 22: ACRM tools[103]
Tools
Debriefing
Debriefing
Checklists

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[101] Gaba, D., Howard, S., Fish, K., Smith, B., Sowb, Y. (2001). Simulation-based Training in Anesthesia Crisis Resource Management (ACRM): A Decade of Experience. *Simulation and Gaming, 32*(2), 175–193.

[102] Agency for Healthcare Research and Quality. (n.d.). *Medical Teamwork and Patient Safety.* Retrieved October 1, 2010, from http://www.ahrq.gov/qual/medteam/medteam4.htm

[103] Agency for Healthcare Research and Quality. (n.d.). *Medical Teamwork and Patient Safety.* Retrieved October 1, 2010, from http://www.ahrq.gov/qual/medteam/medteam4.htm

7.2   Applicability to Canadian health care

What is the applicability of the program to clinical health care professions (those who provide clinical care)?

▸ ACRM was specifically developed for anaesthesiologists working in teams, including doctors, nurses, and other medical professionals.

▸ Unlike many other CRM-based training programs, ACRM is not truly multidisciplinary. While it trains anaesthesiologists to work in multidisciplinary teams, during the simulation, instructors, not nurses and physicians, play the roles of the other team members.[104]

What is the applicability of the program to non-clinical health care professions (those who may interact with patients, but do not provide clinical care)?

▸ ACRM was specifically developed for anaesthesiologists working in teams including technicians.

What is the applicability of the program to administrators?

▸ The program is applicable to administrators in terms of risk management in the context of critical events in the preoperative period. ACRM teaches cognitive and communication tools, which can improve patient safety.[105]

Is the program applicable to the various levels of health care (i.e., acute care, long-term care, community, etc.)?

▸ Originally developed for anesthesiologists, ACRM has been extended to include emergency medicine, trauma medicine, intensive care, and cardiac response teams.[106]

Is the content of this program applicable to a Canadian context?

▸ The Canadian Simulation Centre was involved in the development of ACRM and has offered ACRM training in the past.

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[104]   Agency for Healthcare Research and Quality. (n.d.). *Medical Teamwork and Patient Safety.* Retrieved October 1, 2010, from http://www.ahrq.gov/qual/medteam/medteam4.htm
[105]   Personal Communication. Canadian Simulation Centre. October 29, 2010.
[106]   Gaba, D., Howard, S., Fish, K., Smith, B., Sowb, Y. (2001). Simulation-based Training in Anesthesia Crisis Resource Management (ACRM): A Decade of Experience. *Simulation and Gaming, 32*(2), 175–193.

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7.3   Delivery

What modes of delivery are used in this program?

▸ Training tools include readings, case studies, simulation, and debriefings.

Are adult learning principles utilized?

▸ As ACRM is voluntary, only those interested and motivated to participate attend.[107]

▸ By its nature, ACRM builds on the participant's knowledge, skills, and attitudes.[108]

▸ The ACRM course requires a high level of engagement due to the immersive environment and experiential learning inherent in high-fidelity simulation.[109]

How much time is required to prepare for the delivery of or participation in this program?

▸ The time required for an individual to participate is highly variable. Pre-course reading takes approximately 1–3 hours. Post-course reflection and integration of learned skills into practice varies significantly depending on the participant's motivation, personality, and cognitive state.[110]

What is the expected duration of delivering the program? Does it require multiple dates or is it delivered at one time?

▸ ACRM is delivered in three one-day courses. In addition, an abbreviated course is offered.

What are the costs associated with this program including proprietary, delivery, personnel, and travel?

▸ The cost of the course is approximately $500–$700 per day. This includes course materials and meals and excludes travel.[111]

▸ The group size is limited to a maximum of six.[112]

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[107]   Personal Communication. Canadian Simulation Centre. October 29, 2010.
[108]   Personal Communication. Canadian Simulation Centre. October 29, 2010.
[109]   Personal Communication. Canadian Simulation Centre. October 29, 2010.
[110]   Personal Communication. Canadian Simulation Centre. October 29, 2010.
[111]   Personal Communication. Canadian Simulation Centre. October 29, 2010.
[112]   Personal Communication. Canadian Simulation Centre. October 29, 2010.

7.4   Outcomes

Is this program based on any specific research or methodology? If so, are participants expected to integrate this research or methodology into their own activities?

‣ ACRM was developed to close a gap in anaesthesiologists training identified in research conducted by the Laboratory for Human Performance in Health Care (LHPHC). Through the LHPHC's cognition model of anesthesiologists, it was found that anesthesiologists were limited in knowing how to act in a critical event or crisis. LHPHC identified the CRM aviation training course as addressing these behaviours and applied them through the development of ACRM.[113]

Is there a focus on behaviour changes and/or use of behaviour science?

‣ The debriefing and educational focus of this course is on changing behaviour. Behaviour science for individuals and for teams is extensively used.[114]

Does this program aim to change behaviour? If yes, is the change sustainable and measureable? What outcomes are expected?

‣ Participant performance is measured using behavioural markers based on the teamwork skills identified in Table 21. Checklists are often used in measurement.[115]

‣ Documentation on participant responses suggests that most participants have a positive experience in the ACRM course and believe it contributes to safe practice of anaesthesia. Research has found that these perceptions are generally maintained for at least six months after completion of the training.[116]

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[113]   Stanford School of Medicine. (2009). *Anesthesia Crew Resource Management (ACRM).* Retrieved October 15, 2010, from http://med.stanford.edu/VAsimulator/acrm/

[114]   Personal Communication. Canadian Simulation Centre. October 29, 2010.

[115]   Agency for Healthcare Research and Quality. (n.d.). *Medical Teamwork and Patient Safety.* Retrieved October 1, 2010, from http://www.ahrq.gov/qual/medteam/medteam4.htm

[116]   Gaba, D., Howard, S., Fish, K., Smith, B., Sowb, Y. (2001). Simulation-based Training in Anesthesia Crisis Resource Management (ACRM): A Decade of Experience. *Simulation and Gaming, 32*(2), 175–193.

7.5   Key contacts

▸ ACRM was developed by David Gaba and colleagues at Stanford University, and the Palo Alto Veteran Affairs (VA) Medical Center.

▸ Website (ACRM Stanford): http://med.stanford.edu/VAsimulator/acrm/

▸ ACRM Stanford Simulation Manager: Kam McCowan; office: (650) 493-5000, ext. 63783; direct line: 650-849-0338; kamsu@stanford.edu

▸ ACRM was offered through the Canadian Simulation Centre for Human Performance and Crisis Management Training (CSC)

▸ Website (CSC) http://www.sunnybrook.ca/content/?page=Dept_Anaes_Sim

    – Jordan Tarshis, Director, Simulation Centre: jtarshis@sympatico.ca

    – Susan DeSousa: 416-480-6100, ext. 3377; Simulation.centre@ sunnybrook.ca

8.0   VA NCPS MTT - The Department of Veterans Affairs National Center for Patient Safety Medical Team Training

8.1   Background

Medical Team Training (MTT) is designed to improve outcomes of patient care and staff job satisfaction by implementing CRM communication tools.[117]

8.1.1 Curriculum details

▸ MTT is a classroom-based CRM training program.

▸ MTT is built on Learning Sessions, which are facilitated by a clinical faculty. The clinical faculty is comprised of one physician, one nurse, and two program specialists, all with clinical backgrounds that match the clinical trainees'.

8.1.2 Program structure

The MTT program structure involves three components. See Table 23.

Table 23: MTT program structure[118]		
Component	**Title**	**Description**
1	Preparation	Preparation generally takes two months. Interested Veterans Affairs (VA) facilities submit an application form, which includes the commitment to create a multidisciplinary implementation team. Once the team is established, planning and goals of the MTT project are developed.
2	Learning Sessions	Involves two one-day sessions. Expected attendance at these sessions is 30 participants.
3	Implementation	A month following the learning session, the first four quarterly interviews are conducted. Interviews involve two components: process measure data and narrative data.

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[117]   United States Department of Veteran Affairs. (2010). *Medical Team Training.* Retrieved October 4, 2010, from http://www4.va.gov/ncps/MTT/index.html

[118]   Dunn, E. (2007). Medical Team Training in the Veterans Health Administration. *White Paper: NCPS Medical Team Training Program.* Retrieved October 4, 2010, from http://www.patientsafety.gov/mtt/WhitePaper.pdf

PRA

As shown in Table 24, the MTT learning sessions teach participants CRM-based teamwork and communication tools.[119]

Table 24: MTT learning session structure
Learning sessions
Safety attitudes questionnaire focusing on six factors: safety climate, teamwork climate, job satisfaction, working conditions, perceptions of management, and stress recognition
Learning videos
Debriefing

8.1.3 Tools

As shown in Table 25, MTT training implements a number of tools.

Table 25: MTT tools[120]
Tools
Interdisciplinary Patient-Centered Briefing
Interdisciplinary Administrative Briefing
Debriefing
SBAR
Checklists

8.2   Applicability to Canadian health care

What is the applicability of the program to clinical health care professions (those who provide clinical care)?

‣ MTT is geared towards operating room and ICU teams, as well as other clinical areas.

What is the applicability of the program to non-clinical health care professions (those who may interact with patients, but do not provide clinical care)?

‣ MTT requires the formation of a multidisciplinary implementation team. No information found on whom the team is comprised of.

What is the applicability of the program to administrators?

‣ Senior leadership maximizes staff attendance for the learning sessions.

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[119]   Dunn, E. (2007). Medical Team Training in the Veterans Health Administration. *White Paper: NCPS Medical Team Training Program.* Retrieved October 4, 2010, from http://www.patientsafety.gov/mtt/WhitePaper.pdf

[120]   Dunn, E. (2007). Medical Team Training in the Veterans Health Administration. *White Paper: NCPS Medical Team Training Program.* Retrieved October 4, 2010, from http://www.patientsafety.gov/mtt/WhitePaper.pdf

Is the program applicable to the various levels of health care (i.e., acute care, long-term care, community, etc.)?

▸ MTT is primarily geared towards operating rooms and intensive care units. Additionally, emergency departments, medical-surgical units, and clinics can partake in the training program.[121]

Is the content of this program applicable to a Canadian context?

▸ From January 2007 to July 2009, MTT was offered by the Department of Veterans Affairs (VA) National Center for Patient Safety (NCPS) solely to Veterans Affairs Medical Centers (VAMCs).[122]

8.3 Delivery

What modes of delivery are used in this program?

▸ During the first one-day session, the OR is closed to elective surgical procedures. The second one-day session is open to staff whose units cannot be closed (e.g., ICU).

Are adult learning principles utilized?

▸ No information available.

How much time is required to prepare for the delivery of or participation in this program?

▸ The preparation stage requires two months.

▸ Learning sessions are carried out over two days.

▸ Implementation is carried out over the six months following the learning sessions.

What is the expected duration of delivering the program? Does it require multiple dates or is it delivered at one time?

▸ The learning session is a one-day session delivered twice to increase attendance from clinical units that cannot be closed for training.

What are the costs associated with this program including proprietary, delivery, personnel, and travel?

▸ No information available.

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[121]   Dunn, E. (2007). Medical Team Training in the Veterans Health Administration. *White Paper: NCPS Medical Team Training Program.* Retrieved October 4, 2010, from http://www.patientsafety.gov/mtt/WhitePaper.pdf

[122]   Dunn, E. (2007). Medical Team Training in the Veterans Health Administration. *White Paper: NCPS Medical Team Training Program.* Retrieved October 4, 2010, from http://www.patientsafety.gov/mtt/WhitePaper.pdf

8.4   Outcomes

Is this program based on any specific research or methodology? If so, are participants expected to integrate this research or methodology into their own activities?

‣ MTT was developed in response to research on poor communication resulting in adverse patient outcomes, and research on teamwork being associated with enhanced outcomes and employee retention.[123]

‣ The model of clinical faculty teams is based on research that identifies peer-to-peer communication as critical to creating change.[124]

Is there a focus on behaviour changes and/or use of behaviour science?

‣ No information available.

Does this program aim to change behaviour? If yes, is the change sustainable and measureable? What outcomes are expected?

‣ Behavioral change is measured in the implementation stage through interviews of the multidisciplinary implementation team.

8.5   Key contacts

‣ Website (Veterans Affairs National Center for Patient Safety): http://www.patientsafety.gov/mtt/
‣ Joe Murphy, Public Affairs Officer (email: joe.murphy@va.gov, phone: (734) 930-5884.

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[123] Dunn, E. (2007). Medical Team Training in the Veterans Health Administration. *White Paper: NCPS Medical Team Training Program.* Retrieved October 4, 2010, from http://www.patientsafety.gov/mtt/WhitePaper.pdf

[124] Dunn, E. (2007). Medical Team Training in the Veterans Health Administration. *White Paper: NCPS Medical Team Training Program.* Retrieved October 4, 2010, from http://www.patientsafety.gov/mtt/WhitePaper.pdf

9.0   MOSES – Multidisciplinary Obstetric Simulated Emergency Scenarios

9.1   Background

The goal of Multidisciplinary Obstetric Simulated Emergency Scenarios (MOSES) is to improve teamwork skills and highlight the roles human behaviours can play in crisis prevention and resolution.

9.1.1 Curriculum details

‣ MOSES is a simulation-based CRM training program.

‣ In MOSES, participants practice emergency drills in an effort to promote effective interdisciplinary teamwork.[125]

9.1.2 Program structure

‣ The one-day course offered is available to teams or to individuals from different institutions who form a team for the purposes of the training.

‣ The course involves participation in simulated obstetric emergencies, followed by debriefing, which is supported by review of the simulation recording.[126]

9.1.3 Learning principles

Emergency simulations are used to highlight the 10 key principles of MOSES. See Table 26.

Table 26: MOSES learning principles[127]
Learning principles
Share clear goals and objectives
Anticipate and plan together
Communicate effectively
Share information freely
Develop a climate of support and trust
Work through conflict
Have leadership appropriate to the members and situation
Distribute workload appropriately
Develop the team members
Review progress regularly

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[125]   Freeth, D., Ayida, G., Berridge, E., Sadler, C., & Strachan, A. (2006). MOSES: Multidisciplinary Obstetric Simulated Emergency Scenarios. *Journal of Interprofessional Care¸ 20*(5), 552–554.

[126]   Freeth, D., Ayida, G., Berridge, E., Sadler, C., & Strachan, A. (2006). MOSES: Multidisciplinary Obstetric Simulated Emergency Scenarios. *Journal of Interprofessional Care¸ 20*(5), 552–554.

[127]   Freeth, D., Ayida, G., Berridge, E., Sadler, C., & Strachan, A. (2006). MOSES: Multidisciplinary Obstetric Simulated Emergency Scenarios. *Journal of Interprofessional Care¸ 20*(5), 552–554.

9.1.4 Tools

▶ MOSES utilizes the debriefing tool.

▶ No other information on tools was available.

9.2   Applicability to Canadian health care

What is the applicability of the program to clinical health care professions (those who provide clinical care)?

▶ MOSES is aimed at members of obstetric teams including obstetricians, midwives, and anaesthetists.

What is the applicability of the program to non-clinical health care professions (those who may interact with patients, but do not provide clinical care)?

▶ MOSES is not applicable to non-clinical health care professions.[128]

What is the applicability of the program to administrators?

▶ MOSES is not applicable to administrators.[129]

Is the program applicable to the various levels of health care (i.e., acute care, long-term care, community, etc.)?

▶ MOSES is aimed specifically at obstetrics but can include all practitioners involved in post-partum care.

Is the content of this program applicable to a Canadian context?

▶ No information available.

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[128]   Personal Communication. MOSES. November 12, 2010.
[129]   Personal Communication. MOSES. November 12, 2010.

9.3 Delivery

What modes of delivery are used in this program?

▸ Videos are utilized to promote reflective practice.[130]

▸ Offering the training to individuals recognizes the pressures of simultaneously taking a proportion of clinical staff away from their work.[131]

Are adult learning principles utilized?

▸ Learning principles utilized in MOSES include reflective practice; giving and receiving constructive feedback; drawing on experiences of real life practice; application of learning to workplace through development of individual and team action plans.[132]

How much time is required to prepare for the delivery of or participation in this program?

▸ Minimal preparation time is required.[133]

What is the expected duration of delivering the program? Does it require multiple dates or is it delivered at one time?

▸ MOSES is delivered on a rolling basis approximately four times a year.[134]

What are the costs associated with this program including proprietary, delivery, personnel, and travel?

▸ MOSES costs $2000 per day for a team of eight.

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[130] Personal Communication. MOSES. November 12, 2010.
[131] Freeth, D., Ayida, G., Berridge, E., Sadler, C., & Strachan, A. (2006). MOSES: Multidisciplinary Obstetric Simulated Emergency Scenarios. *Journal of Interprofessional Care¸ 20*(5), 552–554.
[132] Personal Communication. MOSES. November 12, 2010.
[133] Personal Communication. MOSES. November 12, 2010.
[134] Personal Communication. MOSES. November 12, 2010.

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9.4   Outcomes

Is this program based on any specific research or methodology? If so, are participants expected to integrate this research or methodology into their own activities?

▸ MOSES is not based on any specific research or methodology.[135]

Is there a focus on behaviour changes and/or use of behaviour science?

▸ MOSES is focused on behavioural change. The aim of MOSES is to encourage team members to reflect on their team working behaviours and look for ways to change their behaviour to improve teamwork and outcomes.[136]

Does this program aim to change behaviour? If yes, is the change sustainable and measureable? What outcomes are expected?

▸ To date, there has been no evaluation on the impact of MOSES on maternity services.[137]

9.5   Key contacts

▸ Developed by Barts and the London Medical Simulation Centre in 2002, MOSES is now offered through the London Medical Simulation Centre, as well as other simulation centres.

▸ Website (Barts and the London Medical Simulation Centre): http://www.bartsandthelondon.nhs.uk/simulationcentre/courses.asp#Multidisciplinary_Obstetric_Simulated_Emergency_Scenarios_MOSES

▸ Contact: Chris Sadler, Consultant Anaesthetist, Deputy Training Programme Director, Director Medical Simulation Centre, chris.sadler@bartsandthelondon.nhs.uk

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[135]   Personal Communication. MOSES. November 12, 2010.
[136]   Personal Communication. MOSES. November 12, 2010.
[137]   Freeth, D., Ayida, G., Berridge, E., Sadler, C., & Strachan, A. (2006). MOSES: Multidisciplinary Obstetric Simulated Emergency Scenarios. *Journal of Interprofessional Care¸ 20*(5), 552–554.

10.0   MTM – Medical Team Management

10.1   Background

In an effort to reduce medical errors, interdisciplinary teams are trained on human factor concepts and communication skills.[138]

10.1.1 Curriculum details

‣ Medical Team Management (MTM) is a classroom-based CRM training program. Its curriculum is similar to that of MedTeams.[139]

‣ MTM includes a larger focus on practice than many of the other CRM-based training programs do.[140]

‣ MTM is geared towards military medical personnel.

10.1.2 Program structure

The MTM training program includes two training courses—the instructors training course and the military medical personnel training course.

The instructor trainer course utilizes the train-the-trainer model and involves three days of training. Prospective trainers are required to have five years of specialized clinical experience and at least one year of duty remaining in the Armed Forces.

The personnel training course involves three phases. See Table 27.

Table 27: Military personnel training course program structure[141]			
Phase	Title	Length	Details
1	Web-based training course	2–4 hours	Self-paced training course.
2	Classroom training	Weekly 1–2-hour sessions for four weeks	Phase 2 occurs 4–6 weeks after phase 1. It builds on learning from phase 1. Modes of delivery include formal lecture, discussions, behavioural modelling, and case studies.
3	Practice and feedback	–	Instructors observe teams' performance and provide feedback. Homework assignments may also be assigned in this phase.

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[138]   Agency for Healthcare Research and Quality. (n.d.). *Medical Teamwork and Patient Safety.* Retrieved October 1, 2010, from http://www.ahrq.gov/qual/medteam/medteam4.htm

[139]   Agency for Healthcare Research and Quality. (n.d.). *Medical Teamwork and Patient Safety.* Retrieved October 1, 2010, from http://www.ahrq.gov/qual/medteam/medteam4.htm

[140]   Agency for Healthcare Research and Quality. (n.d.). *Medical Teamwork and Patient Safety.* Retrieved October 1, 2010, from http://www.ahrq.gov/qual/medteam/medteam4.htm

[141]   Agency for Healthcare Research and Quality. (n.d.). *Medical Teamwork and Patient Safety.* Retrieved October 1, 2010, from http://www.ahrq.gov/qual/medteam/medteam4.htm

10.1.3 Skills

As shown in Table 28, MTM seeks to develop team knowledge and skills.

Table 28: MTM knowledge and skills[142]
Situation awareness
Operating strategy
Communication
Command authority
Workload performance
Resources
Policy/regulation

10.1.4 Tools

Communication tools used in MTM are shown in Table 29.

Table 29: Tools used in MTM[143]
Tools
Checklists

10.2   Applicability to Canadian health care

What is the applicability of the program to clinical health care professions (those who provide clinical care)?

  ‣ MTM involves training interdisciplinary teams. Clinical health care professionals include physicians and nurses.

What is the applicability of the program to non-clinical health care professions (those who may interact with patients, but do not provide clinical care)?

  ‣ MTM involves training interdisciplinary teams. Non-clinical health care professions include medical technicians, lab technicians, ward clerks, and admission clerks.

What is the applicability of the program to administrators?

  ‣ No information found.

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[142]   Baker, D., Gustafson, S., Beaubien, J., Salas, E., & Barach, P. (2005). Medical Team Training Programs in Health Care. *Advances in Patient Safety: From Research to Implementation, 4*, 253–267.

[143]   Agency for Healthcare Research and Quality. (n.d.). *Medical Teamwork and Patient Safety.* Retrieved October 1, 2010, from http://www.ahrq.gov/qual/medteam/medteam4.htm

Is the program applicable to the various levels of health care (i.e., acute care, long-term care, community, etc.)?

‣ In 2001, the Air Force Surgeon General required that all high-risk specialities (emergency departments, operating rooms, obstetric departments, intensive care units, and neonatal care units) be trained in MTM.[144]

Is the content of this program applicable to a Canadian context?

‣ No information found.

10.3 Delivery

What modes of delivery are used in this program?

‣ Web-based exercises, lectures, participation seminars, discussions, behaviour modelling, homework assignments, and case study analyses.

Are adult learning principles utilized (motivation, experience, level of engagement, application of learning)?

‣ MTM uses active learning techniques to develop trainees' knowledge. It also builds on learning theories, which requires the participants to understand the theory before applying the learning in practice.[145]

How much time is required to prepare for the delivery of or participation in this program?

‣ No information found.

What is the expected duration of delivering the program? Does it require multiple dates or is it delivered at one time?

‣ The train-the-trainer course requires three days of training.

‣ No information found on full length of military medical personnel training program (including practice, feedback, and additional meetings).

What are the costs associated with this program including proprietary, delivery, personnel, and travel?

‣ No information found.

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[144]   Baker, D., Gustafson, S., Beaubien, J., Salas, E., & Barach, P. (2005). Medical Team Training Programs in Health Care. *Advances in Patient Safety: From Research to Implementation, 4*, 253–267.

[145]   Agency for Healthcare Research and Quality. (n.d.). *Medical Teamwork and Patient Safety*. Retrieved October 1, 2010, from http://www.ahrq.gov/qual/medteam/medteam4.htm

10.4   Outcomes

Is this program based on any specific research or methodology? If so, are participants expected to integrate this research or methodology into their own activities?

‣ MTM was initially developed in response to an incident involving a newborn diagnosed with neurological problems at an Air Force hospital.[146]

Is there a focus on behaviour changes and/or use of behaviour science?

‣ MTM seeks to create a culture of team performance within the military setting.

Does this program aim to change behaviour? If yes, is the change sustainable and measureable?

‣ No information found.

What outcomes are expected?

‣ No formal evaluation has been conducted on the effectiveness of MTM.

10.5   Key contacts

‣ No information found.

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[146]   Agency for Healthcare Research and Quality. (n.d.). *Medical Teamwork and Patient Safety.* Retrieved October 1, 2010, from http://www.ahrq.gov/qual/medteam/medteam4.htm

SPECIALTY TRAINING PROGRAMS

11.0 MORE ^{OB} – Managing Obstetrical Risk Efficiently

11.1 Background

Managing Obstetrical Risk Efficiently (MORE ^{OB}) is a "comprehensive patient safety improvement, and professional development program for caregivers and administrators in hospital obstetrical units."[147] It builds and sustains a culture of safety by developing the knowledge, skills, attitudes, behaviour, and practices in the organization.

11.1.1 Curriculum details

‣ The Society of Obstetricians and Gynaecologists of Canada (SOGC) developed MORE^{OB} in 2001. In 2007, the SOGC partnered with the Healthcare Insurance Reciprocal of Canada to form Salus Global Corporation, a company created to develop, produce, and market high quality, effective patient safety programs in all areas of health care.

‣ MORE ^{OB} operates under the premise that in order to address the concerns of adverse events causing harm to patients, there must be a culture change within health organizations.

‣ A critical and unique component of this program is its continuously updated Clinical Content provided by the SOGC, which triggers an update of all program tools and materials.[148]

‣ Implementation of the program is led by an organization-based interprofessional Birthing Unit Core Team. The team is comprised of hospital-based frontline staff and administrators (family physicians, obstetricians, midwives, nurses, risk management personnel, senior hospital administrators, and a hospital governing board member).[149]

‣ A maintenance program, Advancing with MORE ^{OB} (AwM), has been developed for organizations that want to remain engaged and further develop improvements made with MORE ^{OB}.[150]

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[147] MORE ^{OB}. (n.d.). *The MORE^{OB} Program*. [Brochure]. Retrieved October 6, 2010, from http://moreob.com/assets/MoreOBBrochure.pdf

[148] Personal Communication. Salus Global. November 1, 2010.

[149] MORE ^{OB}. (2009). MORE OB Program Overview – Managing Obstetrical Risk Efficiently Executive Release. Retrieved October 11, 2010, from http://www.rmpsi.com/MOREOB/MOREOBExecutiveOverview.pdf

[150] MORE ^{OB}. (2010). Advancing with MORE ^{OB}. Retrieved October 11, 2010, from http://moreob.com/awm/index.html

11.1.2 Key concepts

The MORE[OB] program has defined six key elements to cultivate a patient safety organizational environment. See Table 30.

Table 30: Key concepts emphasized in MORE[OB] [151]	
Skill	**Details**
Culture	To ensure that patient safety skills become ingrained in organizational culture, gaps in patient safety culture are identified. Success is also monitored over time.
Communication	Teams are supported and guided through implementation of specific communication tools.
Collaboration	Building shared knowledge among disciplines is facilitated.
Teamwork	Preparation for emergency situations and skill development aids individuals in understanding the role of the team members.
Reflective learning	To determine areas for improvement and solutions to prevent future issues.
Systems improvement	The focus is on the system as a whole. Reviews are conducted to resolve system problems.

11.1.3 Program structure

MORE[OB] has integrated four program components (evaluation, education, practice modification, and reflective learning) into a three-module program conducted over a three-year period. See Table 31 for modular program structure.

Table 31: MORE[OB] modular program structure[152]		
Module	**Title**	**Description**
1	Learning together	This module aims to develop baseline knowledge among all caregivers on the team. It includes both individual and team training. Trust and respect is the immediate by-product of these activities. Communities of Practice (CoP) form.
2	Working together	Building on module one, this module develops team communication, coordination, and function. Fourteen communication and teamwork tools are provided to team members. An online audit creation, recommendation and communication tool aids the team on its Patient Safety journey. CoPs evolve.
3	Changing culture	Module three adds disclosure, no harm event review, and their root cause analysis to make the team effective culture change agents. FMEA is added to monitor existing systems. CoPs flourish. At the end of this module a review of the program's impact is conducted.

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[151]   MORE[OB]. (n.d.). *The MORE[OB] Program*. [Brochure]. Retrieved October 6, 2010, from
          http://moreob.com/assets/MoreOBBrochure.pdf
[152]   MORE[OB]. (n.d.). *The MORE[OB] Program*. [Brochure]. Retrieved October 6, 2010, from
          http://moreob.com/assets/MoreOBBrochure.pdf

11.1.4 Program tools

The MORE [OB] program contains 13 program tools. See Table 32.

Table 32: MORE [OB] program tools[153]
Annual Environmental Scan
Patient satisfaction survey
MORE [OB] online clinical content (updated yearly along with all tools)
Annual workshop and Action to Consolidate Education (ACE) days
Annual Culture Assessment Survey (CAS)
Skills drills (which evolve into Briefings)
Emergency drills
Event tracking and review
Root cause analysis and the case analysis review tool kit
Failure mode and effect analysis (FMEA)
Audits (case and Unit audits)
Core team fitness analysis and team building exercises
Debriefing tools
Decision trees
mnemonics
Case studies
Communication and teamwork tools

11.1.5 Communication tools

Many teamwork and communication tools are utilized in MORE [OB] to develop an agreed-upon set of behaviours and that improve communication and support effective teamwork. These tools are shown in Table 33.

Table 33: Tools used in MORE [OB] [154]
Tools
Chat/SBAR
Briefings
Debriefings
Checklists
Code word/signal
Hand-offs
Repeat back
Huddles
Urgent update log
Talk-and-do

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[153] MORE [OB]. (2010). The MORE [OB] Program – Program Tools. Retrieved October 11, 2010, from http://moreob.com/awm/index.html

[154] MORE [OB]. (2010). The MORE [OB] Program – Program Tools. Retrieved October 11, 2010, from http://moreob.com/awm/index.html

11.2 Applicability to Canadian health care

What is the applicability of the program to clinical health care professions (those who provide clinical care)?

▶ Designed and created in Canada for Canada by an interprofessional task force under the auspices of the SOGC.

▶ Fully accredited by the College of Family Physicians of Canada (CFPC), the Royal College of Physicians and Surgeons of Canada (RCPSC), and the American Congress of Obstetricians and Gynecologists (ACOG), accepted for midwives emergency skills requirements; RNs can submit activities for their provincial college's requirements for reflective practice and/or maintenance of CNA specialty certification in perinatal nursing.

▶ The interprofessional Birthing Unit Core Team includes clinical-based frontline staff.

▶ Training involves all unit health care workers.

▶ The program is named in the standards of Accreditation Canada since 2007.[155]

What is the applicability of the program to non-clinical health care professions (those who may interact with patients, but do not provide clinical care)?

▶ Once the team develops their "venue," many non-clinical staff take an active part in the Patient Safety journey along with the team.

▶ Non-clinical health care professionals are encouraged to take part in the Emergency Drills. This allows their critical input in finding solutions to problems in their unit.

▶ The program is a powerful mobilizer of staff toward Patient Safety.

What is the applicability of the program to administrators?

▶ The interprofessional Birthing Unit Core Team includes administrative personnel.

▶ The involvement of hospital management leads to improved team performance and the alignment of safety goals throughout the organization.

Is the program applicable to the various levels of health care (i.e., acute care, long-term care, community, etc.)?

▶ While this Program is designed specifically for obstetrics, Salus Global has developed Programs for all areas of Healthcare based on the MORE[OB] model and expertise.

Is the content of this program applicable to a Canadian context?

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[155]   Accreditation Canada (2010) Obstetrics and Perinatal Care Services, standards: http://www.accreditation.ca/accreditation-programs/qmentum/standards/obstetrics-and-perinatal-care-services/

▸ In October 2010, over 210 Canadian hospitals and 10,000 participants were involved in the MORE[OB] program.[156]

▸ MORE[OB] has been translated into French as *Le programme AMPRO*[OB].[157]

▸ MORE[OB] has been implemented in select United States hospitals.[158]

11.3 Delivery

What modes of delivery are used in this program?

▸ MORE[OB] employs the train-the-trainer model of delivery. An interprofessional Core Team from the local hospital unit is trained on Error Theory, Culture, Leadership, Resistance, and elements of the program. The Core Team then rolls out the program to their own participants supported by a program consultant.

▸ Modes of delivery include up-to-date evidence-based clinical content, skills drills, emergency drills, communication and teamwork tools, and reflective learning techniques.

▸ The education component is delivered through two venues. The first venue is an online format where participants are to maintain an updated body of knowledge. The second venue are yearly multidisciplinary workshops which involve skills training, discussions, and problem-solving exercises.[159]   Emergency Drills, low tech simulation scenarios round out the interprofessional learning.

Are adult learning principles utilized (motivation, experience, level of engagement, application of learning)?

▸ Designed from its inception on Adult Learning Principles, adult learning principles are utilized to help lay the foundation for motivating change and maintaining a current clinical knowledge base.[160]

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156   Personal communication, Salus Global, November 2010.
157   MORE[OB]. (2009). MORE[OB] Program Overview – Managing Obstetrical Risk Efficiently Executive Release. Retrieved October 11, 2010, from http://www.rmpsi.com/MOREOB/MOREOBExecutiveOverview.pdf
158   MORE[OB]. (2009). MORE[OB] Program Overview – Managing Obstetrical Risk Efficiently Executive Release. Retrieved October 11, 2010, from http://www.rmpsi.com/MOREOB/MOREOBExecutiveOverview.pdf
159   Milne, J. K., & Lalonde A. B. (2007). Patient safety in women's health-care: professional colleges can make a difference. The Society of Obstetricians and Gynaecologists of Canada MORE[OB] program. *Best Practice & Research Clinical Obstetrics and Gynaecology, 21*(4), 565–579.
160   MORE[OB]. (2009). MORE[OB] Program Overview – Managing Obstetrical Risk Efficiently Executive Release. Retrieved October 11, 2010, from http://www.rmpsi.com/MOREOB/MOREOBExecutiveOverview.pdf

How much time is required to prepare for the delivery of or participation in this program?

▶ A participant can expect to devote 1.6 hours per month to be an effective participant, whereas a Core Team member can expect to devote 4.4 hours per month. All these activities are fully compensated with Continuing Education Credits.

What is the expected duration of delivering the program? Does it require multiple dates or is it delivered at one time?

▶ The Core Team is trained once a year. Participants undergo one full day of Workshops and Actions to Consolidate Education per year. These are the only activities done outside of the workplace. The program is not about doing more work or tasks; it is about doing work differently. Training the TEAM to be the centre of Clinical Excellence and performance.

What are the costs associated with this program including proprietary, delivery, personnel, and travel?

▶ Based on a price per seat, a contract is formalized with each facility.

11.4   Outcomes

Is this program based on any specific research or methodology? If so, are participants expected to model or demonstrate an understanding of this through the methodology?

▶ The MORE [OB] program was built on a review of safety literature outside of the health care sector. Specifically, the impact of faulty systems design as a cause of error, and the relationship between the hazards of production of services and the importance of designing good defences to prevent losses were applicable. In addition, the principles high-reliability organizational systems have provided principles for the structure of MORE [OB].[161] The Core Team is expected to transfer the knowledge they gain about the principles of error theory and the importance of culture change to their participants. The portal contains Chapters and Workshops to assist the Core Team in this task.

▶ A side effect of the Program's structure is the development of a Culture of Leadership Development within the organisation.

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[161]   Milne, J. K., & Lalonde A. B. (2007). Patient safety in women's health-care: professional colleges can make a difference. The Society of Obstetricians and Gynaecologists of Canada MORE [OB] program. *Best Practice & Research Clinical Obstetrics and Gynaecology, 21*(4), 565–579.

PRA

Is there a focus on behaviour changes and/or use of behaviour science?

▸ MORE[OB] is founded on the concept of changing the blame culture to foster the growth of a patient safety environment.[162]

▸ Behavioural psychologists were part of the design of the program and some of its tools. Behavioural psychologists also assisted with the evolution of the program.

Does this program aim to change behaviour? If yes, is the change sustainable and measureable?

▸ Behaviour change is observed as participants navigate the program.

▸ Measuring behaviour change is not part of the program; however, culture change is measured. Data shows this change also improves significantly throughout engagement in the program.[163]

What outcomes are expected?

▸ Directly measured through the program: The program has a high level of interprofessional acceptance and engagement. It comes from a highly positive reaction to the program. Learning through the program is also highly positive and statistically predictable by discipline. Due to the culture change, application of new knowledge is encouraged and enhanced. Communication between professionals and between professionals and patients is significantly improved. These positive factors lead to positive health care outcomes from improvement of satisfaction at work to reduction of work-related stress.[164]

▸ Independent research indicates improved indicators of health care resource utilization[165] and newborn and maternal outcomes.[166,167] Insurance data reveals a significant reduction in costs per claim.[168]

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[162] Milne, J. K., & Lalonde A. B. (2007). Patient safety in women's health-care: professional colleges can make a difference. The Society of Obstetricians and Gynaecologists of Canada MORE[OB] program. *Best Practice & Research Clinical Obstetrics and Gynaecology, 21*(4), 565–579.

[163] Milne, JK, et al (2010). A measurement tool to assess Culture Change regarding Patient Safety in Hospital Obstetrical Units. J Obstet Gynaecol Can 32(6) 590–597.

[164] Data on file, Salus Global Corporation, 2010

[165] Frick, C. et al. (2009). Outcomes following the province wide implementation of the Managing Obstetrical Risk Efficiently (MORE[OB]) Program in Alberta. Poster presentation SOGC ACM. Halifax, NS.

[166] Frick, C. et al. (2009). Outcomes following the province wide implementation of the Managing Obstetrical Risk Efficiently (MORE[OB]) Program in Alberta. Poster presentation SOGC ACM. Halifax, NS.

[167] Nguyen, X. et al. (2010). Outcomes of the introduction of the MORE[OB] continuing education Program in Alberta. *The Journal of Obstetrics and Gynaecology Canada, 32*(8), 749–755.

[168] Healthcare Insurance Reciprocal of Canada data on file.

11.5   Key contacts

▸ Website (MORE ^{OB}): http://www.moreob.com

     – Salus Global Corporation (www.salusgc.com). James Ruiter, MD, Director of Obstetrical Patient Safety Programs: 226-268-4551, jruiter@salusgc.com

     – Michael Vezina, Vice President: 519-640-7333, ext. 232, mvezina@salusgc.com

12.0   CTT – Crisis Team Training program

12.1   Background

Crisis Team Training (CTT) aims to improve the design of crisis response and the training of multidisciplinary teams to respond to in-hospital crises events.[169]

12.1.1 Curriculum details

‣ CTT is a simulation-based course that utilizes patient simulators as a teaching and assessment tool.

‣ CTT is a subset of CRM that holds similarities such as workload distribution, non-discipline-specific roles, and flattening of team hierarchy.[170]

12.1.2 Program structure

As shown in Table 34, the CTT program consists of four components.

Table 34: CTT program structure
Web-based presentation viewed independently (two hours)
Presentation
Simulation sessions
Debriefing of simulation

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[169] DeVita, M., Schaefer, J., Lutz, J., Dongilli, T., & Wang, H. (2004). Improving medical crisis team performance. *Critical Care Medicine*, *32*(2), S61–S65.

[170] Robertson, B., Schumacher, L., Gosman, G., Kanfer, R., Kelley, M., & DeVita, M. (2009). Simulation-Based Crisis Team Training for Multidisciplinary Obstetric Providers. *Simulation in Healthcare*, *4*(2), 77–83.

PRA

OBCTT program structure

Obstetric Crisis Team Training (OBCTT) applies Crisis Team Training (CTT) to obstetrics.
The OBCTT training program structure consists of five steps. See Table 35.

Table 35: OBCTT program structure[171]	
Step	**Details**
1	Review of online material (CRM principles, crisis team skills, team choreography)
2	Slide presentation given by facilitator
3	Orientation of simulation room
4	Performance of four simulated crises scenarios
5	Debriefing with review of simulation video

12.1.3 Tools

Communication tools utilized in CTT are shown in Table 36.

Table 36: Tools used in CTT
Tools
Debriefings
Closed communication loops
Self-assessment
Team assessment
Roles and task completion

12.2   Applicability to Canadian health care

What is the applicability of the program to clinical health care professions (those who provide clinical care)?

▸ All CTT participants are Advanced Cardiac Life Support (ACLS) Certified. Such certification ensures that participants are skilled at appropriate treatment, allowing the training session to focus on team skills.[172]

▸ Participants include critical care nurses, respiratory therapists, and physicians.

What is the applicability of the program to non-clinical health care professions (those who may interact with patients, but do not provide clinical care)?

▸ While this does not currently exist in the course, it could be added. Non-clinical staff could communicate to the family the information as well as coordinate system issues to the crisis.

What is the applicability of the program to administrators?

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[171]   Robertson, B., Schumacher, L., Gosman, G., Kanfer, R., Kelley, M., & DeVita, M. (2009). Simulation-Based Crisis Team Training for Multidisciplinary Obstetric Providers. *Simulation in Healthcare*, *4*(2), 77–83.

[172]   DeVita, M., Schaefer, J., Lutz, J., Dongilli, T., & Wang, H. (2004). Improving medical crisis team performance. *Critical Care Medicine*, *32*(2), S61–S65.

‣ While this does not currently exist in the course, it could be added. Administrators could communicate to the family the information as well as coordinate system issues to the crisis.

Is the program applicable to the various levels of health care (i.e., acute care, long-term care, community, etc.)?

‣ CTT has been employed in critical care medicine, internal medicine, anaesthesiology, obstetrics, emergency medicine, and outpatient clinics.

Is the content of this program applicable to a Canadian context?

‣ CTT training is offered through simulation centres in Canada.

‣ The program is applicable to the Canadian context as the course material is traditionally altered to meet specific site and institution uses.

12.3   Delivery

What modes of delivery are used in this program?

‣ CTT employs the train-the-trainer model.

‣ CTT utilizes web-based presentations, presentations facilitated by a trainer, simulation, and debriefing. In addition, a box version of the course is available for those where connectivity may be an issue.

Are adult learning principles utilized (motivation, experience, level of engagement, application of learning)?

‣ No information available.

How much time is required to prepare for the delivery of or participation in this program?

‣ While no set length has been determined, in the train-the-trainer model one full day should be devoted to training. A maximum of 10 participants is also suggested.

What is the expected duration of delivering the program? Does it require multiple dates or is it delivered at one time?

‣ The training involves a one time delivery.

‣ Course material could be delivered within four hours. Follow-up could occur after all participants within an organization have completed the first course.

What are the costs associated with this program including proprietary, delivery, personnel, and travel?

▸ Seat prices range from $50 to $150 per person. Most of the time the cost is based on the infrastructure of the organizations offering the course (e.g., location, number of instructors). If an institution has a simulation centre, the cost of running the course is much less. Most internal courses offered are about 50% less the price.

12.4   Outcomes

Is this program based on any specific research or methodology? If so, are participants expected to integrate this research or methodology into their own activities?

▸ No information available.

Is there a focus on behaviour changes and/or use of behaviour science?

▸ No information available.

Does this program aim to change behaviour? If yes, is the change sustainable and measureable?

▸ The behaviour changes are reflected in the learning of team dynamics, communication, structure, and performance. The most significant change is the amount of "critical" tasks completed comparing scenario one to the final fourth scenario. There is a direct correlation between the completion of tasks, communication, and patient outcomes.

What outcomes are expected?

▸ No information available.

12.5   Key contacts

▸ CTT is offered through the Peter M. Winter Institute for Simulation, Education and Research (WISER).

▸ Website (WISER): http://www.wiser.pitt.edu/default.asp

  – Tom Dongilli, Director of Operations, Wiser, dongta@upmc.edu

PRA

13.0   GITT – Geriatrics Interdisciplinary Team Training

13.1   Background

The goal of Geriatrics Interdisciplinary Team Training (GITT) is to improve the care of elders by enhancing the interdisciplinary training of health professionals.[173]

13.1.1 Curriculum details

▸ Originally developed by the John A. Hartford Foundation, GITT is offered by eight American universities. The program curriculum varies slightly by university.

13.1.2 Program structure

GITT training can be completed in five different program lengths (half day, one day, two days, three days, or five days). In the shorter program lengths, some of the curriculum topic areas listed below are omitted. See Table 37 for curriculum topic areas.

Table 37: GITT curriculum topic areas
Team
Communication
Provider roles
Care planning
Multidimensional assessment
Multiculturalism
Advocacy
Quality of life

13.1.3 Tools

▸ GITT makes use of the Team Signatures Technology tool, which aids teams in identifying underlying systems of social dynamics using the team's cohesion, leadership, diversity quotients, and other measures.[174]

▸ No further information on program tools was found.

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[173]   GITT. (2001). Chapter 1: The John A. Hartford Foundation Geriatric Interdisciplinary Team Training (GITT) Program. *GITT Implementation Manual*, 1–11. Retrieved October 15, 2010, from http://www.gittprogram.org/files/Chapter_1.pdf

[174]   Agency for Healthcare Research and Quality. (n.d.). *Medical Teamwork and Patient Safety.* Retrieved October 1, 2010, from http://www.ahrq.gov/qual/medteam/medteam4.htm

PRA

13.2 Applicability to Canadian health care

What is the applicability of the program to clinical health care professions (those who provide clinical care)?

▸ Team training includes clinical health care professionals such as physicians and nurses.[175]

What is the applicability of the program to non-clinical health care professions (those who may interact with patients, but do not provide clinical care)?

▸ Team training includes non-clinical health care professionals such as social workers, pharmacists, and therapists.[176]

What is the applicability of the program to administrators?

▸ Team training includes administrators.[177]

Is the program applicable to the various levels of health care (i.e., acute care, long-term care, community, etc.)?

▸ GITT is geared toward geriatric interdisciplinary teams.

▸ GITT is offered in a variety of health care settings including rehabilitation, primary care, day cares, home care, and hospice centres.[178]

Is the content of this program applicable to a Canadian context?

▸ GITT is offered through eight American universities.

▸ No information found on Canadian context.

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[175] Agency for Healthcare Research and Quality. (n.d.). *Medical Teamwork and Patient Safety.* Retrieved October 1, 2010, from http://www.ahrq.gov/qual/medteam/medteam4.htm

[176] Agency for Healthcare Research and Quality. (n.d.). *Medical Teamwork and Patient Safety.* Retrieved October 1, 2010, from http://www.ahrq.gov/qual/medteam/medteam4.htm

[177] Agency for Healthcare Research and Quality. (n.d.). *Medical Teamwork and Patient Safety.* Retrieved October 1, 2010, from http://www.ahrq.gov/qual/medteam/medteam4.htm

[178] Sundar, E., Sundar, S., Pawlowski, J., Blum, R., Feinstein, D., & Pratt, S. (2007). Crew Resource Management and team training. *Anesthesiology Clinics, 25*, 283–300.

13.3   Delivery

What modes of delivery are used in this program?

‣ In program delivery, GITT utilizes didactic instruction, simulated exercise, and observation.[179]

Are adult learning principles utilized (motivation, experience, level of engagement, application of learning)?

‣ No information found.

How much time is required to prepare for the delivery of or participation in this program?

‣ No information found.

What is the expected duration of delivering the program? Does it require multiple dates or is it delivered at one time?

‣ Program delivery ranges from a half day to a full week.[180]

What are the costs associated with this program including proprietary, delivery, personnel, and travel?

‣ No information found.

13.4   Outcomes

Is this program based on any specific research or methodology? If so, are participants expected to integrate this research or methodology into their own activities?

‣ No information found.

Is there a focus on behaviour changes and/or use of behaviour science?

‣ No information found.

Does this program aim to change behaviour? If yes, is the change sustainable and measureable?

‣ No information found.

What outcomes are expected?

‣ No information found.

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[179]   GITT. (2001). Chapter 4: The GITT core curriculum 2001. *GITT Implementation Manual*, 1–11. Retrieved October 15, 2010, from http://www.gittprogram.org/files/Chapter_4.pdf

[180]   GITT. (2001). Chapter 4: The GITT core curriculum 2001. *GITT Implementation Manual*, 1–11. Retrieved October 15, 2010, from http://www.gittprogram.org/files/Chapter_4.pdf

13.5 Key contacts

▸ John A. Hartford Foundation Geriatric Interdisciplinary Team Training Program. Contact Malvina Kluger; mk17@nyu.edu

▸ Website: http://www.gittprogram.org/index.html

OTHER TEAM TRAINING PROGRAMS

14.0   TeamSTEPPS - Team Strategies and Tools to Enhance Performance and Patient Safety

14.1   Background

TeamSTEPPS aims to "produce highly effective medical teams that optimize the use of information, people, and resources to achieve the best clinical outcomes for their patients."[181]

14.1.1 Curriculum details

▸ TeamSTEPPS was developed by the Department of Defense (DoD) and the Agency for Healthcare Research and Quality (AHRQ). DoD and AHRQ has partnered with the American Institutes for Research to build a national training support network titled the National Implementation of TeamSTEPPS Project.[182]

▸ TeamSTEPPS aims to improve patient safety by implementing tools and strategies to improve team performance.[183]

▸ TeamSTEPPS participants will learn about four competency areas: leadership, situational monitoring, mutual support, and communication.

▸ Organizations are given flexibility in program implementation. Options include introducing the tools and strategies to the whole organization, to specific departments, or selecting individual tools to be phased in one at a time.[184]

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[181]   Healthcare Team Training. (2010). TeamSTEPPS. Retrieved October 18, 2010, from
        http://www.healthcareteamtraining.com/what-we-do/team-stepps/
[182]   Agency for Healthcare Research and Quality. (n.d.). TeamSTEPPS: National Implementation. Retrieved
        October 18, 2010, from http://teamstepps.ahrq.gov/aboutnationalIP.htm
[183]   King, H., Battles, J., Baker, D., Alonso, A., Salas, E., Webster, J., Toomey, L., & Salisbury, M.
        TeamSTEPPS™: Team Strategies and Tools to Enhance Performance and Patient Safety. *Advances in
        Patient Safety: New Directions and Alternative Approaches*, *3*, 5–20.
[184]   Agency for Healthcare Research and Quality. (n.d.). TeamSTEPPS: National Implementation. Retrieved
        October 18, 2010, from http://teamstepps.ahrq.gov/aboutnationalIP.htm

14.1.2 Program structure

The TeamSTEPPS training program is comprised of three phases, shown in Table 38.

Phase	Title	Details
Table 38: TeamSTEPPS program structure[185]		
1	Assessment	The training needs analysis is carried out through four steps: 1) Establish an organization-level change team 2) Conduct site visit 3) Define challenge 4) Define goal of intervention
2	Planning, training and implementation	There are seven steps in phase two: 1) Define the intervention 2) Develop a plan for determining the intervention's effectiveness 3) Develop an implementation plan 4) Gain leadership commitment to the plan 5) Develop a communication plan 6) Prepare the institution 7) Implement training
3	Sustaining the intervention	There are six steps in sustaining the intervention: 1) Provide opportunities to practice 2) Ensure leaders emphasize new skills 3) Provide regular feedback and coaching 4) Celebrate wins 5) Measure success 6) Update the plan

14.1.3 Training sessions

TeamSTEPPS training is divided into five sessions. Each training session focuses on a specific topic that is based on the shared set of team knowledge, skills, and attitudes (KSAs), as advocated by Sims, Salas, and Burke (2004).[186] In the sessions, emphasis is placed on defining team skills, and demonstrating team tools and strategies.[187] The training topics are:

- ‣ Team structure
- ‣ Leadership
- ‣ Situation monitoring
- ‣ Mutual support
- ‣ Communication

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[185] Agency for Healthcare Research and Quality. (n.d.). TeamSTEPPS: National Implementation. Retrieved October 18, 2010, from http://teamstepps.ahrq.gov/aboutnationalIP.htm

[186] Sims, D., Salas, E., & Burke, S. (2004). *Is There A 'Big Five' in Teamwork?* 19th Annual Meeting of the Society for Industrial and Organizational Psychology, Chicago, IL.

[187] King, H., Battles, J., Baker, D., Alonso, A., Salas, E., Webster, J., Toomey, L., & Salisbury, M. TeamSTEPPS™: Team Strategies and Tools to Enhance Performance and Patient Safety. *Advances in Patient Safety: New Directions and Alternative Approaches*, *3*, 5–20.

14.1.4 Tools

A number of team training tools and strategies are taught in TeamSTEPPS. See Table 39.

Table 39: TeamSTEPPS tools and strategies[188]
Briefings
Debriefings
Huddles
STEP
Cross monitoring
Feedback
Advocacy and assertion
Two-challenge rule
CUS
DESC script
Collaboration
SBAR
Call-out
Check-back
Handoff

14.2   Applicability to Canadian health care

What is the applicability of the program to clinical health care professions (those who provide clinical care)?

▸ TeamSTEPPS is applicable to those in clinical health care professions.

What is the applicability of the program to non-clinical health care professions (those who may interact with patients, but do not provide clinical care)?

▸ TeamSTEPPS is not applicable to those in non-clinical health care professions.

What is the applicability of the program to administrators?

▸ Senior leadership support is required in TeamSTEPPS.

Is the program applicable to the various levels of health care (i.e., acute care, long-term care, community, etc.)?

▸ TeamSTEPPS is applicable to the whole organization.

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[188]   King, H., Battles, J., Baker, D., Alonso, A., Salas, E., Webster, J., Toomey, L., & Salisbury, M. TeamSTEPPS™: Team Strategies and Tools to Enhance Performance and Patient Safety. *Advances in Patient Safety: New Directions and Alternative Approaches*, *3*, 5–20.

Is the content of this program applicable to a Canadian context?

▸ TeamSTEPPS is currently offered through five Team Resource Centers in the United States.[189] Teams from Canada have been trained at these training centres.

▸ TeamSTEPPS is wholly owned by the United States government.[190] However, the TeamSTEPPS curriculum is in the public domain.

14.3   Delivery

What modes of delivery are used in this program?

▸ TeamSTEPPS employs a train-the-trainer model.

▸ The training sessions involve presentations, case studies, simulation, role playing, teach-back, and videos.

Are adult learning principles utilized (motivation, experience, level of engagement, application of learning)?

▸ No information available.

How much time is required to prepare for the delivery of or participation in this program?

▸ TeamSTEPPS involves three continuous phases—assessment; planning, training, and implementation; and sustainment. The sustainment phase lasts a few months.

What is the expected duration of delivering the program? Does it require multiple dates or is it delivered at one time?

▸ The train-the-trainer training requires two and a half days.

▸ After the trainers are trained, hospital frontline teams at the organization are trained. Following the training, sufficient time must be provided to allow team members to practice what they have learned in their work. For a few months following the training session, time must be allocated for trainer and teams to meet to discuss the training.[191]

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[189]   Agency for Healthcare Research and Quality. (n.d.). TeamSTEPPS: National Implementation. Retrieved October 18, 2010, from http://teamstepps.ahrq.gov/aboutnationalIP.htm

[190]   King, H., Battles, J., Baker, D., Alonso, A., Salas, E., Webster, J., Toomey, L., & Salisbury, M. TeamSTEPPS™: Team Strategies and Tools to Enhance Performance and Patient Safety. *Advances in Patient Safety: New Directions and Alternative Approaches*, *3*, 5–20.

[191]   TeamSTEPPS. (n.d.). *TeamSTEPPS Executive Briefing*. [Presentation slides]. Retrieved October 25, 2010, from http://teamstepps.ahrq.gov/abouttoolsmaterials.htm

PRA

What are the costs associated with this program including proprietary, delivery, personnel, and travel?

▸ Master training is offered for free by AHRQ and DoD.[192] However, teams must pay for their own travel expenses to attend the training.

14.4   Outcomes

Is this program based on any specific research or methodology? If so, are participants expected to integrate this research or methodology into their own activities?

▸ At the onset of TeamSTEPPS development, an examination of MedTeams, Medical Team Management, and LifeWings was carried out by the DoD. The issued report recommended the development of an evidence-based medical team training program that would guide developers of medical team training programs.[193]

▸ TeamSTEPPS is rooted in team performance and teamwork research, and tested theoretical models for system-based error prevention. This research built a solid evidence base of teamwork core competencies with identified knowledge, skills, and attitudes.[194]

Is there a focus on behaviour changes and/or use of behaviour science?

▸ TeamSTEPPS is based on the shared set of team KSAs, as advocated by Sims, Salas, and Burke (2004).[195] The four TeamSTEPPS training sessions (leadership, situation monitoring, mutual support, and communication) are based on the KSAs.[196]

Does this program aim to change behaviour? If yes, is the change sustainable and measureable?

▸ TeamSTEPPS aims to create a change of culture within the organization.

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[192]   Agency for Healthcare Research and Quality. (n.d.). TeamSTEPPS: National Implementation. Retrieved October 18, 2010, from http://teamstepps.ahrq.gov/aboutnationalIP.htm

[193]   King, H., Battles, J., Baker, D., Alonso, A., Salas, E., Webster, J., Toomey, L., & Salisbury, M. TeamSTEPPS™: Team Strategies and Tools to Enhance Performance and Patient Safety. *Advances in Patient Safety: New Directions and Alternative Approaches*, *3*, 5–20.

[194]   TeamSTEPPS. (n.d.). *TeamSTEPPS Executive Briefing*. [Presentation slides]. Retrieved October 25, 2010, from http://teamstepps.ahrq.gov/abouttoolsmaterials.htm

[195]   Sims, D., Salas, E., & Burke, S. (2004). *Is There A 'Big Five' in Teamwork?* 19th Annual Meeting of the Society for Industrial and Organizational Psychology, Chicago, IL.

[196]   King, H., Battles, J., Baker, D., Alonso, A., Salas, E., Webster, J., Toomey, L., & Salisbury, M. TeamSTEPPS™: Team Strategies and Tools to Enhance Performance and Patient Safety. *Advances in Patient Safety: New Directions and Alternative Approaches*, *3*, 5–20.

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What outcomes are expected?

▸ Through TeamSTEPPS training, higher-quality, safer patient care can be realized.

14.5   Key contacts

▸ Website (TeamSTEPPS): http://teamstepps.ahrq.gov/index.htm

▸ TeamSTEPPS contact: Deborah Milne, Senior Research Scientist, American Institute for Research; 202-403-5968; dmilne@air.org

Appendix A – Team Training Program Matrix

Team training programs														
	CRM-based										**Specialty**			**Other**
Questions	**CRM**	**Team Performance Plus**	**TOMS**	**LifeWings/DOM**	**TOPS**	**MedTeams**	**ACRM**	**VA NCPS MTT**	**MOSES**	**MTM**	**MORE^OB**	**CTT**	**GITT**	**TeamSTEPPS**
Background														
Curriculum details	Training in inquiry and information gathering, assertive advocacy, conflict resolution, decision-making, evaluation, and feedback.	Prepares organizational leaders to be champions and coaches among staff.	Addresses potential patient safety threats through better workload management, improved problem-solving, and decision-making skills.	LifeWings aims to increase patient safety, reduce medical errors, and improve quality of health care by improving teamwork and communication skills, creating and implementing hardwired safety tools, and educating leadership on the strategies needed to sustain performance improvements permanently.	Multidisciplinary and multi-center project aimed at improving unit-based safety culture through teamwork and communication initiatives.	Aims to reduce medical errors through interdisciplinary teamwork fostered through organizational culture change.	Trains anesthesiologists to better manage crises by working effectively in multidisciplinary teams. The simulation community has moved beyond the initial concept of ACRM as it does not address deficits in medical knowledge and the current belief that training is best done in interprofessional teams.	Improves outcomes of patient care and staff job satisfaction by implementing communication tools.	Improves teamwork skills and highlights roles that human behaviours can play in crisis prevention and resolution.	In an effort to reduce medical errors, interdisciplinary teams are trained on human factor concepts and communication skills.	MORE^OB builds and sustains a culture of safety by developing the knowledge, skills, attitudes, behaviour, and practices in the organization.	CTT aims to improve the design of crises response and training multidisciplinary teams to respond to in-hospital crises.	The goal of GITT is to improve the care of elders by enhancing the interdisciplinary training of health professionals.	TeamSTEPPS aims to "produce highly effective medical teams that optimizes the use of information, people, and resources to achieve the best clinical outcomes for their patients."
Applicability to Canadian health care														
What is the applicability of this program to clinical health care professions?	CRM is applicable to any professional setting where experts must function as a team to accomplish assigned tasks safely.	Senior and front line clinical staff are involved.	Involves interdisciplinary training of OR teams.	Involves interdisciplinary training and safety system implementation to clinical health care professionals.	All patient care disciplines are engaged in training.	Train-the-trainer participants are key physicians and nurses. They, in turn, train other team members.	Not multidisciplinary. Training is specifically for anaesthesiologists.	Geared toward operating room and ICU teams.	Geared toward obstetric teams.	Training of interdisciplinary teams include physicians and nurses.	The interprofessional Birthing Unit Core Team involves clinical based front line staff.	All CTT participants are Advanced Cardiac Life Support Certified (ACLS).	Team training includes clinical health care professionals such as physicians and nurses.	TeamSTEPPS is applicable to those in clinical health care professions.
What is the applicability of this program to non-clinical health care professions?	CRM is applicable to any professional setting where experts must function as a team to accomplish assigned tasks safely.	No information found.	Training is only applicable to those working within the OR.	Has been implemented with administrators, maintenance, construction, and pharmacy.	All patient care disciplines are engaged in training.	Team members include support staff such as department clerks.	Not applicable, training is specifically for anaesthesiologists.	No information available.	Not applicable to non-clinical health care professions.	Training of interdisciplinary teams includes medical technicians, lab technicians, ward and admission clerks.	While not part of the team, non-clinical staff may take an active part in the Patient Safety journey along with the team. Non-clinical staff are encouraged to participate in Emergency Drills.	Non-clinical aspect could be added to the course.	Team training includes non-clinical health care professionals such as social workers, pharmacists, and therapists.	Not applicable to non-clinical health care professions.
What is the applicability of this program to administrators?	Organizational sustainment of performance improvements require that administrators are trained and model the behaviours.	No information found.	Training is only applicable to those working within the OR.	Leadership development involves training of executive team and managers.	No information available.	The training is applicable to administrators.	Applicable to risk management in the context of critical events in the preoperative period.	Senior leadership maximizes attendance for the learning sessions.	Not applicable to administrators.	No information found.	The interprofessional Birthing Unit Core Team includes administrative personnel.	Administrator aspect could be added to the course.	Team training includes administrators.	Senior leadership support is required.
Is this program applicable to the various levels of health care (e.g., acute care, long-term care, community)?	Program is tailored to training needs.	Originally for obstetrics, program is now expanded into ER and surgery.	Used in laparoscopic and obstetrical procedures and in ICU situations.	Apply to all levels of care.	TOPS is applicable to various levels of health care.	Curriculum is generalized to all clinical areas. Specialty information for emergency departments, labour and delivery, operating rooms, and ambulatory care is available.	Originally developed for anaesthesiology, ACRM now includes emergency medicine, trauma medicine, intensive care, and cardiac response teams.	Primarily geared towards OR and ICU. ER departments, medical-surgical units, and clinics can also partake in training.	Aimed specifically at obstetrics but can involve all practitioners involved in peri-partum care.	Geared toward ER departments, OR, obstetric departments, ICU, and neonatal care units.	MORE^OB is aimed specifically at obstetrics.	CTT has been employed in critical care medicine, internal medicine, anaesthesiology, obstetrics, emergency medicine, and outpatient clinics.	GITT is geared toward geriatric interdisciplinary teams.	Applicable to the whole organization.
Is the content of this program applicable to the Canadian context?	Yes, CRM-based training programs have been implemented in Canada.	No information found.	Courses are only run for the University of Basel and associated hospitals.	LifeWings is applicable to a Canadian context.	TOPS is applicable to a Canadian context.	Skills and behaviours are applicable to any health care setting. Adjustments may be required for Canadian context.	The Canadian Simulation Centre was involved in the development of ACRM and has offered ACRM training in the past.	Solely offered to Veteran Affairs Medical Centers.	No information available.	No information found.	Program was developed in Canada. Is available in English and French.	CTT training is offered through simulation centres in Canada.	No information found.	Canadian teams have been trained in the American Team Resource Centers.

Team training programs

Questions	CRM-based										Specialty			Other
	CRM	Team Performance Plus	TOMS	LifeWings/DOM	TOPS	MedTeams	ACRM	VA NCPS MTT	MOSES	MTM	MORE^{OB}	CTT	GITT	TeamSTEPPS
Program delivery														
What modes of delivery are used in this program?	Simulators, lectures, and videos.	Train-the-trainer training, direct-to-staff training, advanced coach training, site visit.	Briefings, simulation, and debriefings.	Incorporates facilitated discussion, experiential learning, simulation, role-playing, case studies, behaviour modelling, and knowledge testing.	Train-the-trainer model, presentations, videos with facilitated discussion, and scenario-based exercises.	Train-the-trainer model. Classroom-based approach with the option of a simulation segment.	Readings, case studies, simulation, and debriefings.	No information available.	Training recognizes the pressures of simultaneously taking a proportion of clinical staff away from their work.	Web-based exercises, lectures, participation seminars, discussions, behaviour modelling, homework assignments, and case study analyses.	Train-the-trainer model. Education component is delivered online or through workshops. Modes of delivery include clinical content, skills drills, communication and teamwork tools, and reflective learning techniques.	Train-the-trainer model. Web-based presentations, presentations facilitated by a trainer, simulation, and debriefing.	Didactic instruction, simulated exercise, and observation.	Train-the-trainer, presentations, case studies, simulation, role-playing, teach-back, and videos.
Are adult learning principles utilized?	Adult learning principles are utilized.	No information found.	Adult learning principles are utilized.	Yes.	Due to wide array of participants, different learning styles are addressed.	Adult learning principles are utilized.	The principles of motivation, experience, level of engagement, and application of learning are utilized.	No information available.	Adult learning principles are utilized.	Active learning techniques and learning theories are used.	Adult learning principles help lay the foundation for motivating change and maintaining a current critical knowledge base.	No information found.	No information found.	No information available.
How much time is required to prepare for the delivery of or participation in this program?	As CRM is a set of principles and not a training program, preparation for delivery is not applicable.	Preparation requires one day onsite.	Brief preparation the day before the simulation.	Preparation is required by administrators (20–30 hours); the project coordinator (5 hours per week for 6 months); clinical staff (5 hours); and the 6–8 person project support team (30 hours).	Program length is dependent on the specific needs of the organization.	Program length is dependent on the size and complexity of the organization.	Pre-course reading requires 1–3 hours. Time required for post-course reflection and integration of skills varies by individual.	Preparation: two months; training: two consecutive days; implementation: six months following training.	Minimal preparation required.	No information found.	Participants devote approximately 1.4 hours per month. Core Team members devote 4.4 hours per month.	One full day for training is recommended.	No information found.	TeamSTEPPS involves three continuous phases, assessment; planning training and implementation; and sustainment. The sustainment phase lasts a few months.
What is the expected duration of delivering this program? (Does it require multiple dates or is it delivered at one time)?	As CRM is a set of principles and not a training program, expected duration of delivery is not applicable.	Training: two-three days of consecutive training. Preparation to sustainment: two years.	Delivered over two consecutive days. The first day involves brief preparation. The simulation occurs on the second day over one three-hour period.	Involves up to 9 site visits encompassing 35 days onsite. The typical program requires 5–6 months to complete each unit or department.	The program is delivered in four-hour sessions offered at multiple times.	Train-the-trainer involves three consecutive days of training. Project sustainment requires six months.	Training is delivered in three consecutive one-day courses. An abbreviated course is also offered.	The same session is delivered on two days to allow for staff to attend the training.	Focus on behavioural change.	The train-the-trainer course requires three days of training. No information found on full-length training program.	Annual Core Team training involves one full day workshop. All other activities are done inside the workplace, as the program focuses on doing work differently, and not doing more work.	One time delivery. Follow-up could occur after all participants have completed the first course.	Program delivery ranges from a half day to a full week.	Train-the-trainer requires 2.5 days. Front line team training requires a few months of follow up.
What are the costs associated with this program, including proprietary, delivery, personnel, and travel?	As CRM is a set of principles and not a training program, costs are not applicable.	Delivered on fee-for-service basis.	No information available as courses are only run internally.	Range from $20,000 to $50,000 depending on size of organization and scope of implementation.	Costs vary by discipline and site.	Cost is customized for each organization.	$500–$700 per day of course (includes materials and meals, excludes travel). Group size is limited to six.	No information available.	$2,000 per day for a team of eight.	No information found.	A contract is formalized based on price per seat.	Cost is based on organization's infrastructure (e.g., location, number of instructors). Seat prices range from $50–$150 per person.	No information found.	Master training is offered for free by AHRQ and DoD. However, teams must pay for their own travel expenses to attend the training.

Team training programs

Questions	CRM-based										Specialty		Other
	CRM	Team Performance Plus	TOMS	LifeWings/DOM	TOPS	MedTeams	ACRM	VA NCPS MTT	MOSES	MTM	MORE^OB	CTT	GITT	TeamSTEPPS
Outcomes														
Is this program based on any specific research or methodology? If so, are participants expected to integrate this research or methodology into their own activities?	CRM is based on cockpit resource management developed in the airline industry.	No information found.	Program is not based on any specific research or methodology.	Based on the research and methodology of CRM and the AHRQ TeamSTEPPS program.	TOPS was developed as an educational intervention. Its impacts were studied as a research endeavour.	The program is based on specific research. Participants are required to integrate the skills and behaviours of the research.	ACRM training was developed to close the gap identified in anaesthesiologists training.	The model of clinical faculty teams is based on research that identifies peer-to-peer communication as critical to creating change.	Program is not based on any specific research or methodology.	MTM was initially developed in response to an incident involving a newborn diagnosed with neurological problems at an air force hospital.	MORE^OB is founded on a review of safety literature outside of health care. In addition, the principles of high-reliability organizational systems provided principles for the structure of MORE^OB.	No information found.	No information found.	TeamSTEPPS is rooted in team performance and teamwork research and tested theoretical models for system-based error prevention.
Is there a focus on behavioural changes and / or use of behavioural science?	CRM recognizes that identifiable and teachable behaviours are crucial to high-risk environments.	TPP focuses on training team behaviours.	It has been found that anesthesiologists develop skills faster than when traditionally taught on the job.	In addition to behavioural change, providing organizations with strategies and tools aimed at improving patient safety will foster a long-term organizational change.	TOPS aims to change behaviour.	MedTeams is based on the premise that most errors in health care occur from breakdowns in systems-level defences that occur over time.	Behaviour science for individuals and teams is used.	No information available.	MOSES aims to change behaviour.	MTM seeks to create a culture of team performance within the military setting.	MORE^OB is founded on the concept of changing the blame culture to foster the growth of a patient safety environment.	No information found.	No information found.	TeamSTEPPS is based on the shared set of team knowledge, skills, and attitudes (KSAs).
Does this program aim to change behaviour? If yes; is the change sustainable and measurable?	CRM aims to promote behavioural changes.	Behaviour change is measured through an OB-specific AOI.	There is no evidence of post-training changes to participants' knowledge or skill base, changes in organizational effectiveness, or degree of behavioral transfer.	Desired outcomes are measured throughout the training process.	See answer above.	MedTeams operates under the premise that successful teamwork requires a change in organizational culture.	Participant performance is measured using behavioural markers based on the teamwork skills.	Behavioral change is measured in the implementation stage through interviews of the multidisciplinary implementation team.	No evaluation on the impact of MOSES has been conducted.	No information found.	Behaviour change is observed as participants navigate the program. Culture change is measured and data shows improvements throughout engagement in the program.	Behaviour changes are reflected in the learning of team dynamics, communication, structure, and performance.	No information found.	TeamSTEPPS aims to create a change of culture within the organization.
What outcomes would I expect to see?	According to one source, outcomes are difficult to measure. According to another source, training programs are evidenced-based and improve patient care.	There are early indications of a decrease in AOI.	See answer above.	LifeWings has achieved a number of measureable results.	A demonstrated improvement in safety culture has been documented.	In the evaluation, 48 behaviours are linked to course dimensions.	Documentation on participant responses suggest that most participants have a positive experience in the ACRM course and believe it contributes to safe practice of anaesthesia.	No information available.	See answer above.	No information found.	Due to culture change, application of new knowledge is encouraged and enhanced. Communication between professionals and between professionals and patients has improved.	No information found.	No information found.	Through TeamSTEPPS, training higher quality, safer patient care can be realized.
Tools														
Are there any communication tools utilized in this program?	CRM recognizes that identifiable and teachable behaviours are crucial to high-risk environments.	SBAR, advocacy, shared language.	Time-outs, feedback loops, briefings, debriefings, WHO checklists.	Challenge and response checklists, communications scripts, standard protocols, huddles, debriefings.	SBAR, CUS words, briefings, debriefings.	No information available.	Briefing, debriefing, checklists.	Interdisciplinary patient-centred briefing, interdisciplinary administrative briefing, debriefing.	Debriefing.	Checklists.	CHAT/SBAR, briefings, debriefings, checklists, code work/signal, hands-off, repeat back, huddles, urgent update log, talk-and-do	Debriefing, closed communication loops, self-assessment, team assessment, roles, and task completion.	Team signature technology.	Briefings, debriefings, huddles, STEP, cross monitoring, feedback, advocacy and assertion, two-challenge rule, CUS, DESC, collaboration, SBAR, call-out, check-back, handoff.

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Team training programs														
				CRM-based								Specialty		Other
Questions	CRM	Team Performance Plus	TOMS	LifeWings/DOM	TOPS	MedTeams	ACRM	VA NCPS MTT	MOSES	MTM	MORE[OB]	CTT	GITT	TeamSTEPPS
Contact information														
Organization	-	Harvard Risk Management Strategies Foundation.	University of Basel, Switzerland	Safer Patients	Division of Hospital Medicine, University of California	MedTeams	Sunnybrook Health Sciences Centre	Veteran Affairs National Center for Patient Safety	Barts and the London Medical Simulation Centre	No information found.	Salus Global Corporation	Peter M. Winter Institute for Simulation, Education and Research (WISER)	-	TeamSTEPPS
Website	-	www.rmfstrategies.com/tpp/	www.medana.unibas.ch/eng/team/hufa22.htm	www.saferpatients.com	-	http://teams.drc.com/Medteams/Home/Home.htm	http://www.sunnybrook.ca/content/?page=Dept_Anaes_Sim	http://www.patientsafety.gov/mtt/	http://www.bartsandthelondon.nhs.uk/simulationcentre/courses.asp#Multidisciplinary_Obstetric_Simulated_Emergency_Scenarios_MOSES	-	www.moreob.com www.salusgc.com	www.wiser.pitt.edu/default.asp	-	teamstepps.ahrq.gov/index.htm
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