**Appendix A. Questionnaire 1**

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| Project Title |  |
| Research question |  |
| Brief project description |  |
| Authors (include degrees) |  |
| Stage of project (data collection, final edits, etc) |  |

1. **Please list active or recently completed (less than 6months) simulation-based research projects at your institution.**

PROJECT 2

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| --- | --- |
| Project Title |  |
| Research question |  |
| Brief project description |  |
| Authors (include degrees) |  |
| Stage of project (data collection, final edits, etc) |  |

PROJECT 3

|  |  |
| --- | --- |
| Project Title |  |
| Research question |  |
| Brief project description |  |
| Authors (include degrees) |  |
| Stage of project (data collection, final edits, etc) |  |

(if required, please continue with similar format for further projects)

1. **What (if any) support does simulation-based research have at your institution? Check all that apply**
   * Faculty funding / protection for research?
   * Departmental funding specifically for SBR?
   * Departmental oversight / Sim director?
   * Non-clinician education scientist support (ex Education PhDs)
   * Inter-departmental collaborations
   * Multidisciplinary / Interprofessional groups?
   * University agreements
   * Private funding
   * Other: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. **What are local facilitators and barriers to Simulation-based research?**

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| **Facilitators** | **Barriers** |
| **1.** | **1.** |
| **2.** | **2.** |
| **3.** | **3.** |
| **4.** | **4.** |
| **5.** | **5.** |

**Please comment on the following:**

What would assist with these barriers?

If no barriers existed what priorities would your department have for SBR?

What factors have contributed to success in SBR at your site?

1. **Do you currently or have you previously collaborated on sim-based research with physicians outside of your institution?**

**Appendix B. Current simulation-based research activity in Emergency Medicine in Canada**

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| **Research Themes** | **Project title/focus** |
| **Education and Training - Instructional Delivery and Feedback** | Testing the GridlockED game: Engagement level, usability, fidelity, acceptability, and applicability of a serious board game for teaching and learning |
|  | Use of simulation technologies to reduce instructor cognitive load |
|  | Increasing engagement of observer learners in simulation-based learning |
|  | Engagement and learning in simulation: recommendations of the Simnovate engaged learning domain group |
|  | The PEARLS Healthcare Debriefing Tool |
|  | Establishing a virtual community of practice in simulation: the value of social media |
|  | Interdisciplinary attitudes surrounding the absolute value of in-situ simulation in the Emergency Department |
|  | Breaking the barriers in continuing professional development: Implementation of a flipped classroom model for maintenance of procedural competencies |
|  | Impact of acute care physician’s age on crisis management performance and learning after simulation-based education |
|  | Stress inoculation training using simulation |
|  | Debriefing themes in in-situ simulation |
|  | Predicting cognitive overload using Galvanic skin response |
|  | Stress relief intervention before simulation and cognitive load measurement |
|  | Through the learners’ lens: augmented learner debriefing |
|  | Deliberate practice and mastery learning: a multi-center randomized study for technical skills training in medicine. |
|  | The effects of simulated patient death on cognitive load and learning in experience pre-hospital HEMS providers |
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| **Education and Training - Medical Expert Competence** | Rapid visual diagnosis |
|  | Study of availability bias using simulation |
|  | The effect of checklists and heuristics on diagnostic accuracy |
|  | A novel model for high fidelity simulation of gastrointestinal bleed |
|  | Competency in acute resuscitation through successive simulation - implementation of a near-peer training initiative for CPR training in medical students |
|  | Rolling-Refreshers - using brief, repetitive practice to increase competency of medical students in chest compressions |
|  | Implementation of a rolling-refreshers curriculum for CPR training for critical care nursing staff |
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| **Education and Training - Intrinsic Role Competence** | Development, implementation and evaluation of a simulation workshop for advance care planning and goals of care conversations in the emergency department |
|  | Implementation of a simulation‐based telemedicine curriculum |
|  | Simulation teaching of the donning and doffing of personal protective equipment: comparison of a simulated case of severe respiratory infectious disease to a simulated case-free approach – a pilot study |
|  | Emergency Medicine oral case presentation: Competency-based assessment and curriculum development |
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| **Education and Training - Procedural Competence** | Bougie-assisted cricothyroidotomy: a randomized trial to evaluate a novel curriculum for a rarely performed, life-saving procedure |
|  | Comparing the efficacy of three-dimensional versus two-dimensional video modeling in achieving central venous catheterization competency |
|  | Sound resuscitation II: a pilot study on the use of resuscitative ultrasound by emergency physicians during critical care simulations |
|  | Transcutaneous pacemaker insertion teaching: the impact of a checklist on medical resident learning |
|  | Transcutaneous cardiac pacing competency among junior residents undergoing an ACLS course: impact of a modified high-fidelity manikin |
|  | Ultrasound and simulation resuscitation scenarios. “How to interpret ultrasound images within a simulation scenario” |
|  | Cognitive load theory as a framework for simulation-based ultrasound guided internal jugular catheterization training: once is not enough |
|  | Does utilization of an intubation safety checklist reduce dangerous omissions during simulated resuscitation scenarios? |
|  | Bougie assisted cricothyroidotomy: Delphi-derived essential steps for the novice learner |
|  | The effects of implementation of a checklist-based team briefing on airway management in simulated pre-hospital patients. |
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| **Evaluation and Assessment - Validity** | The development of a simulation OSCE for the purpose of enabling residents to achieve EPA's |
|  | Comparing multi-source competency-based assessments in a simulation-based resuscitation skills training program |
|  | Multi-institutional multi-disciplinary simulation-based resuscitation skills training program |
|  | Simulation-based assessment of resuscitation competence |
|  | Eye tracking and hand motion tracking for point-of-care ultrasound in the simulated environment |
|  | Delphi technique for the derivation of a point-of-care ultrasound assessment tool |
|  | Eye tracking in the OSCE setting: correlation with competency |
|  | Getting inside the expert’s head: an analysis of experts thought processes |
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| **Evaluation and Assessment - System QI** | A quality improvement project: identifying and managing latent safety threats through a zone wide emergency department in situ multidiscipline simulation program |
|  | Quality improvement in the management of diabetic ketoacidosis through a zone wide emergency department in situ simulation |
|  | Severe acute respiratory infection preparedness: longitudinal quality improvement simulations |
|  | Prehospital trauma handover: Exploring barriers to effective communication and developing a standardized handover process |
|  | Multidisciplinary, in-situ simulation to evaluation a rare but high-risk process at a Level 1 trauma centre: The "Mega-Sim" approach |
|  | Use of in-situ simulation to identify latent safety hazards with introduction of a massive transfusion protocol |
|  | Quality improvement through Simulation Curricular Development in a post-graduate emergency medicine program |
|  | Attitudes, perceptions and insights of emergency department leadership towards in-situ simulation to uncover latent safety threats |
|  | TRUST study (Trauma Resuscitation Using in situ Simulation Team Training) |
|  | In-situ simulation process improvements of time-to-blood for massive transfusion protocol |
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| **Evaluation and Assessment - National Processes** | Simulation in Canadian postgraduate emergency medicine training – a national survey |
|  | Simulation for continued professional development in Canadian academic emergency medicine |
|  | National simulation curricular content for emergency medicine |
|  | Using a common template: a national consensus process among emergency medicine educators |
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| **Unique Specialty Topic - Event and Disaster Medicine** | ‘Disaster Day’: Scarce resource mitigation strategy use |
|  | Development, implementation and evaluation of a simulation curriculum for healthcare students working at electronic dance music events |
|  | Lessons learned from the design and implementation of an innovative in situ hospital-wide active shooter simulation (ASSIST) |