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## INTRODUCTION

- The intensive care unit (ICU) is where the most acutely ill patients are hospitalized and taken care of by **interprofessional teams**.
- Interprofessional collaboration (IPC)** is essential for healthcare workers in the intensive care unit to provide high-quality care, through daily collaborative work.
- To collaborate effectively, doctors must be trained during medical school. Unfortunately, **interprofessional education (IPE) is uneven across residency and allied health training programs**.

## OBJECTIVES

- Identify the **collaborative training needs** and **perception of collaboration** of the residents and their colleagues.
- Explore **barriers** and **facilitators** to IPE, particularly in the context of the pediatric intensive care rotation at the CHU Sainte-Justine (Université de Montréal, Montreal, Canada).
- Make recommendations for the development of future training activities.

## METHOD

- Strategy:** two-phase mixed method study, by sequential explanatory strategy.
- Participants population: learners** (pediatric residents of the University of Montreal), **physician-teachers** (pediatric intensive care specialists and clinical fellows affiliated with the University of Montreal), **professionals** who are part of the clinical teams working in the PICU of the CHU Sainte-Justine (mainly respiratory therapists, nurses, and pharmacists), as well as **patient representatives** (parents)\*
- Part one** (quantitative strategy): structured questionnaire sent to the entire available population of learners, physician-teachers, and professionals
  - Convenience sampling, descriptive and comparative analysis strategy
  - ... to precisely explore the participants' experience with collaborative training and IPC
  - ... to identify participants for enrollment in part two
- Part two** (qualitative strategy): semi-structured focus group interviews with selected survey-takers
  - Stratified random sampling, deductive and inductive thematic content analysis strategy
  - ... to identify the participants' perceptions of collaboration, their needs in IPE, and the obstacles to its implementation in the PICU

\* Data excluded after review in qualitative analysis process

## RESULTS

- Part one – Quantitative strategy (surveys):**
  - Total of **54 healthcare workers** answered the survey, from all available groups.
  - Significant difference between interprofessional education (IPE) received by resident doctors and their staff.
- Part two – Qualitative strategy (focus groups):**
  - Total of **18 participants** enrolled from survey completion to participate in focus groups, from which emerged multiple **important themes and sub-themes**.
  - Challenges** faced by participants:
    - △ **Residents:** dual identity as trainees and providers, feeling excluded from the team, and exposition discontinuity.
    - △ **Physician-teachers:** fostering good collaborative practices, delivering evaluation on interpersonal skills, and meeting the residents competing training needs.
    - △ **Professionals:** new teammates every month, lack of protected time to teach limiting involvement.
  - Enablers** to collaborative practices: Sharing the same definition of collaborative practice, bidirectional communication, and equality amongst team members.
  - Barriers** to future training initiatives: Organizational factors, residents' competing interests and teaching needs, lack of fitting teaching opportunities on the unit, and need for explicit teaching on collaboration.



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## CONCLUSION

- Multiple **challenges** expressed by the participants:
  - Mainly evolving around **role clarification** for the resident, **support** for the educators, and **involvement** of the other allied health professionals in teaching and evaluation.
- Interventions that might be useful:**
  - The **residents** might benefit specifically from early role clarification and their inclusion in the already existing interprofessional simulation activities.
  - The **physician-teachers** would benefit from continuing medical education on teaching collaboration and evaluation, as well as including the allied health professionals in the community of clinical educators.
  - The **professionals** who are involved in residents' teaching should get more recognition and allotted time to participate in teaching activities.
- Perception** of collaboration was similar amongst the participants:
  - Most recognized its **importance** and were **motivated** to work together.

... With creativity, new initiatives can be developed and could significantly impact patient care.

## ACKNOWLEDGEMENTS

The authors would like to thank Mr. Miguel Chagnon, from the University of Montreal, for his support in the statistical analysis and the whole team of healthcare workers at the CHU Sainte-Justine's pediatric intensive care unit for their collaboration and participation in this project. The authors would also like to thank the Fédération des Médecins Résidents du Québec (FMRQ) and the Anesthesiology and Intensive Care Department at the Laval University for their financial support throughout the project.

## REFERENCES

1. Lepage-Farrell A, Richard A, Pinard AM. Interprofessional education for residents rotating in the pediatric intensive care unit: a needs analysis. *Crit Care Med*. 2023;51(12):e100001. doi:10.1097/CCM.0000000000005000

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# REFERENCES

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- Artino, A. R., Jr., La Rochelle, J. S., Dezee, K. J., & Gehlbach, H. (2014). Developing questionnaires for educational research: AMEE Guide No. 87. *Med Teach*, 36(6), 463-474. doi:10.3109/0142159X.2014.889814
- Bainbridge, L., & Wood, V. I. (2012). The power of prepositions: learning with, from and about others in the context of interprofessional education. *J Interprof Care*, 26(6), 452-458. doi:10.3109/13561820.2012.715605
- Bainbridge, L., & Wood, V. I. (2013). The power of prepositions: a taxonomy for interprofessional education. *J Interprof Care*, 27(2), 131-136. doi:10.3109/13561820.2012.725231
- Biggs, J. B. (1993). From Theory to Practice: A Cognitive Systems Approach. *Higher Education Research & Development*, 12(1), 73-85. doi:10.1080/0729436930120107
- Bochatay, N., Muller-Juge, V., Scherer, F., Cottin, G., Cullati, S., Blondon, K. S., . . . Nendaz, M. R. (2017). Are role perceptions of residents and nurses translated into action? *BMC Med Educ*, 17(1), 138. doi:10.1186/s12909-017-0976-2
- Bode, S. F., Giesler, M., Heinzmann, A., Kruger, M., & Straub, C. (2016). Self-perceived attitudes toward interprofessional collaboration and interprofessional education among different health care professionals in pediatrics. *GMS J Med Educ*, 33(2), Doc17. doi:10.3205/zma001016
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77-101. doi:10.1191/1478088706qp063oa
- Braun, V., & Clarke, V. (2021). One size fits all? What counts as quality practice in (reflexive) thematic analysis? *Qualitative Research in Psychology*, 18(3), 328-352. doi:10.1080/14780887.2020.1769238
- Canadian Interprofessional Health Collaborative. (2010). CIHC National Interprofessional Competency Framework. Retrieved from <http://www.cihc-cpis.com/>
- Careau, E., Briere, N., Houle, N., Dumont, S., Vincent, C., & Swaine, B. (2015). Interprofessional collaboration: development of a tool to enhance knowledge translation. *Disabil Rehabil*, 37(4), 372-378. doi:10.3109/09638288.2014.918193
- Charles, G., Bainbridge, L., & Gilbert, J. (2010). The University of British Columbia model of interprofessional education. *J Interprof Care*, 24(1), 9-18. doi:10.3109/13561820903294549
- D'Amour, D., & Oandasan, I. (2005). Interprofessionality as the field of interprofessional practice and interprofessional education: an emerging concept. *J Interprof Care*, 19 Suppl 1, 8-20. doi:10.1080/13561820500081604
- Davis, B. P., Clevenger, C. K., Posnock, S., Robertson, B. D., & Ander, D. S. (2015). Teaching the teachers: faculty development in inter-professional education. *Appl Nurs Res*, 28(1), 31-35. doi:10.1016/j.apnr.2014.03.003
- Donovan, A. L., Aldrich, J. M., Gross, A. K., Barchas, D. M., Thornton, K. C., Schell-Chaple, H. M., . . . Lipshutz, A. K. M. (2018). Interprofessional Care and Teamwork in the ICU. *Crit Care Med*, 46(6), 980-990. doi:10.1097/ccm.0000000000003067
- Frambach, J. M., van der Vleuten, C. P., & Durning, S. J. (2013). AM last page. Quality criteria in qualitative and quantitative research. *Acad Med*, 88(4), 552. doi:10.1097/ACM.0b013e31828abf7f
- Frank, J. R., Snell, L., & Boucher, A. (2015). Référentiel de compétences CanMEDS 2015 pour les médecins. Retrieved from <http://www.royalcollege.ca/rcsite/canmeds/canmeds-framework-f>
- Hall, L. W., & Zierler, B. K. (2015). Interprofessional Education and Practice Guide No. 1: developing faculty to effectively facilitate interprofessional education. *J Interprof Care*, 29(1), 3-7. doi:10.3109/13561820.2014.937483
- Harris, P. A., Taylor, R., Minor, B. L., Elliott, V., Fernandez, M., O'Neal, L., . . . Duda, S. N. (2019). The REDCap consortium: Building an international community of software platform partners. *J Biomed Inform*, 95, 103208. doi:10.1016/j.jbi.2019.103208
- Harris, P. A., Taylor, R., Thielke, R., Payne, J., Gonzalez, N., & Conde, J. G. (2009). Research electronic data capture (REDCap)--a metadata-driven methodology and workflow process for providing translational research informatics support. *J Biomed Inform*, 42(2), 377-381. doi:10.1016/j.jbi.2008.08.010
- Havyer, R. D., Nelson, D. R., Wingo, M. T., Comfere, N. I., Halvorsen, A. J., McDonald, F. S., & Reed, D. A. (2016). Addressing the Interprofessional Collaboration Competencies of the Association of American Medical Colleges: A Systematic Review of Assessment Instruments in Undergraduate Medical Education. *Acad Med*, 91(6), 865-888. doi:10.1097/acm.0000000000001053
- Jean, P. (2008). Pour une planification méthodique des activités de formation. *Pédagogie Médicale*, 2(2), 101-107. doi:10.1051/pmed:2001017
- Lie, D. A., Forest, C. P., Kysh, L., & Sinclair, L. (2016). Interprofessional education and practice guide No. 5: Interprofessional teaching for prequalification students in clinical settings. *J Interprof Care*, 30(3), 324-330. doi:10.3109/13561820.2016.1141752
- Lingard, L., & Kennedy, T. J. (2013). Qualitative research in medical education: Methodologies and methods. In T. Swanwick (Ed.), *Understanding medical education: evidence, theory and practice* (pp. 371-384). Chichester: John Wiley & Sons.
- Oandasan, I., & Reeves, S. (2005). Key elements for interprofessional education. Part 1: the learner, the educator and the learning context. *J Interprof Care*, 19 Suppl 1, 21-38. doi:10.1080/13561820500083550
- Reeves, S., Boet, S., Zierler, B., & Kitto, S. (2015). Interprofessional Education and Practice Guide No. 3: Evaluating interprofessional education. *J Interprof Care*, 29(4), 305-312. doi:10.3109/13561820.2014.1003637
- Reeves, S., Fletcher, S., Barr, H., Birch, I., Boet, S., Davies, N., . . . Kitto, S. (2016). A BEME systematic review of the effects of interprofessional education: BEME Guide No. 39. *Med Teach*, 38(7), 656-668. doi:10.3109/0142159x.2016.1173663
- Tamuz, M., Giardina, T. D., Thomas, E. J., Menon, S., & Singh, H. (2011). Rethinking resident supervision to improve safety: from hierarchical to interprofessional models. *J Hosp Med*, 6(8), 445-452. doi:10.1002/jhm.919
- Wong, P. S., Chen, Y. S., & Saw, P. S. (2021). Influencing factors and processes of interprofessional professional education (IPE) implementation. *Med Teach*, 43(sup1), S39-s45. doi:10.1080/0142159x.2019.1672864



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