



University of the Pacific  
Scholarly Commons

---

Occupational Therapy Student Capstones

Occupational Therapy Program

---

7-1-2023

## Exploring the Role of Occupational Therapy in the Pediatric Intensive Care Unit

Lexi Herman

*University of the Pacific*

Follow this and additional works at: <https://scholarlycommons.pacific.edu/ot-capstones>



Part of the [Occupational Therapy Commons](#)

---

### Recommended Citation

Herman, Lexi, "Exploring the Role of Occupational Therapy in the Pediatric Intensive Care Unit" (2023).

*Occupational Therapy Student Capstones*. 29.

<https://scholarlycommons.pacific.edu/ot-capstones/29>

This Capstone is brought to you for free and open access by the Occupational Therapy Program at Scholarly Commons. It has been accepted for inclusion in Occupational Therapy Student Capstones by an authorized administrator of Scholarly Commons. For more information, please contact [mgibney@pacific.edu](mailto:mgibney@pacific.edu).

# Exploring the Role of Occupational Therapy in the Pediatric Intensive Care Unit

Presentation by

**Lexi Herman, CNP, OTD/S**

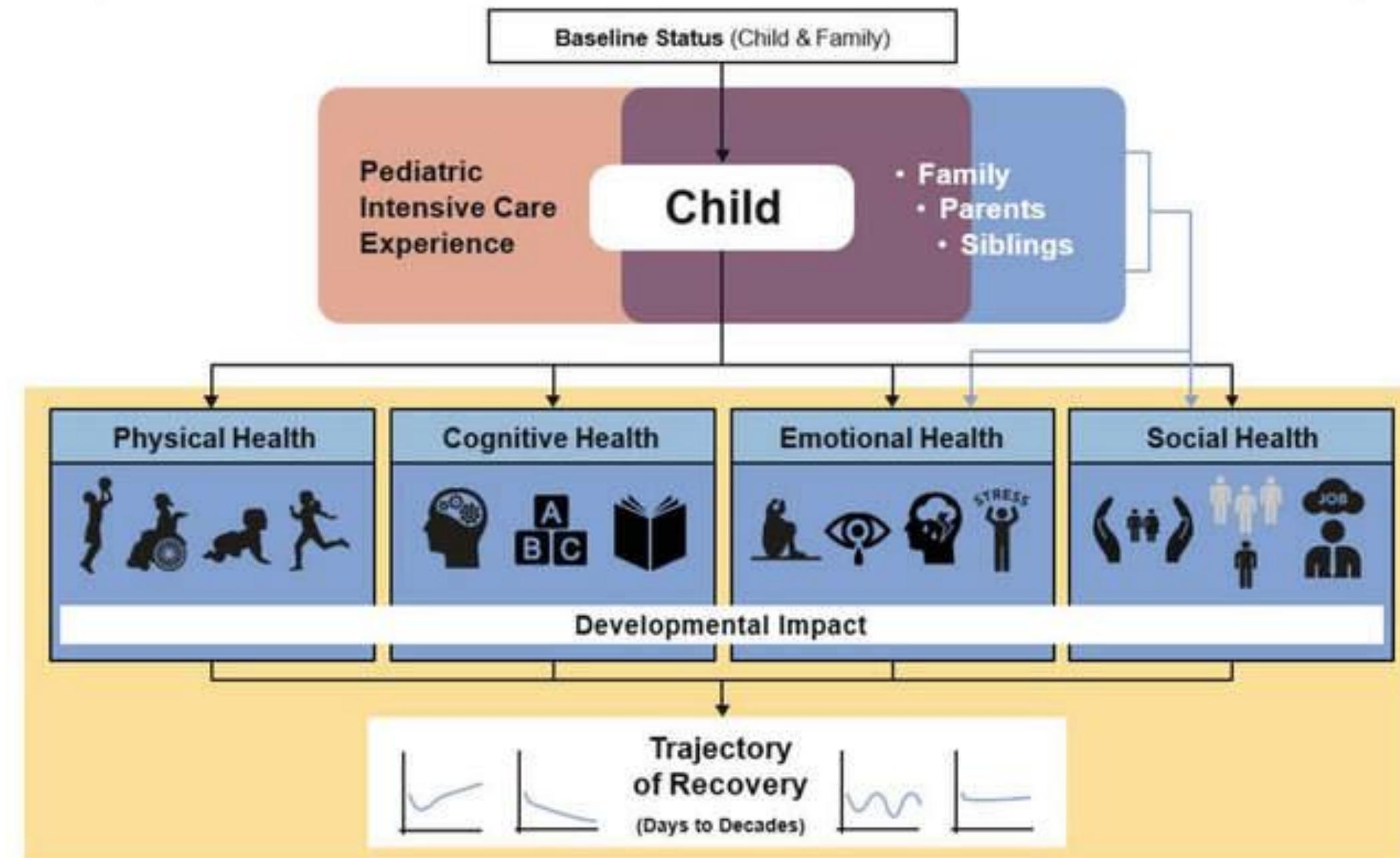
In collaboration with:

Caroline Norell, OTD, OTR/L &

Natalie Perkins, PP-OTD, M.Ed., OTR/L, FIIE

# Background

## Conceptual Framework for Pediatric PICS (PICS-p)



(Betters et al., 2017; Choong et al., 2018; Ebrahim et al., 2013; Ghafoor et al., 2021; Herbsman et al., 2020; Herrup et al., 2017; Lehner & Sadler, 2015; Manning et al., 2018; Morrow, 2021; Ong et al., 2016; Patel et al., 2021; Pollack et al., 2014; Royer & Busari, 2021; Silver et al., 2020; Watson et al., 2018; Woodruff & Choong, 2021; Wieczorek et al., 2016)

Manning JC, Pinto NP, Rennick JE, Colville G, Curley MAQ. PCCM 2018

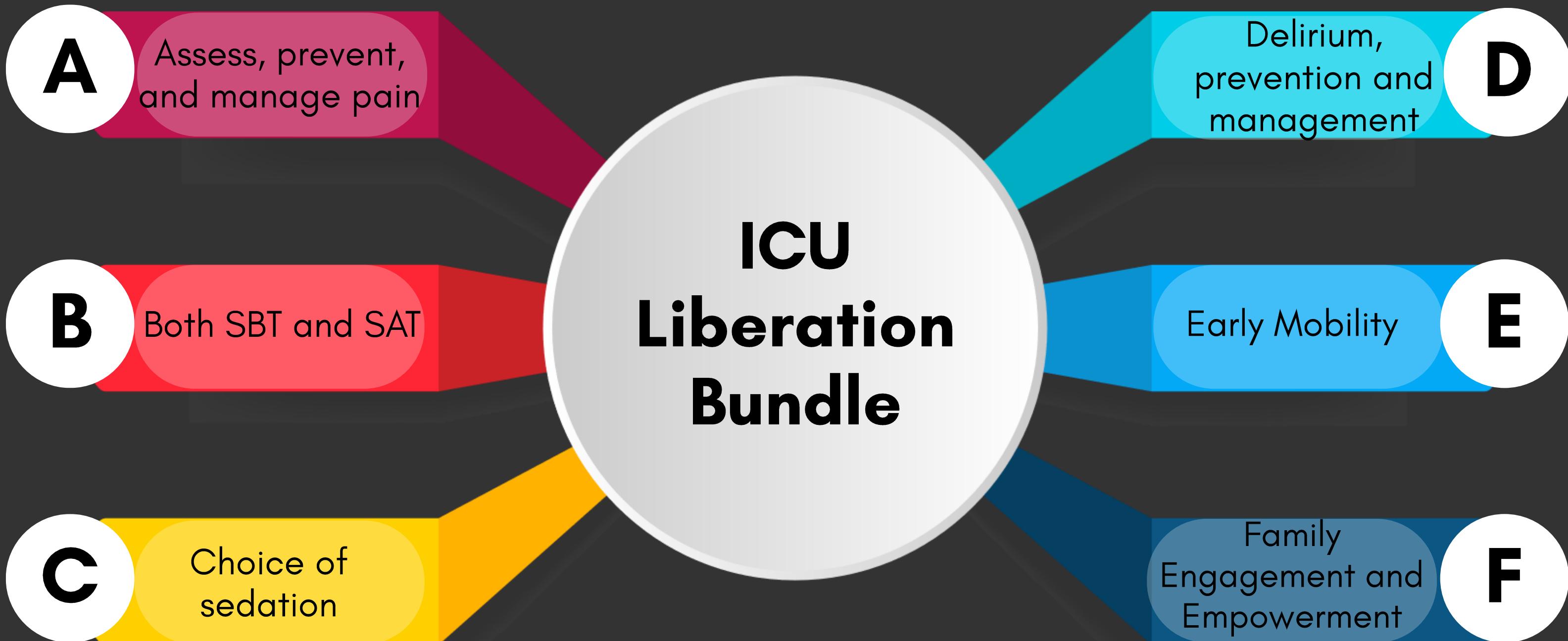
1



UNIVERSITY OF THE  
PACIFIC

School of  
Health Sciences

# ICU Liberation Bundle



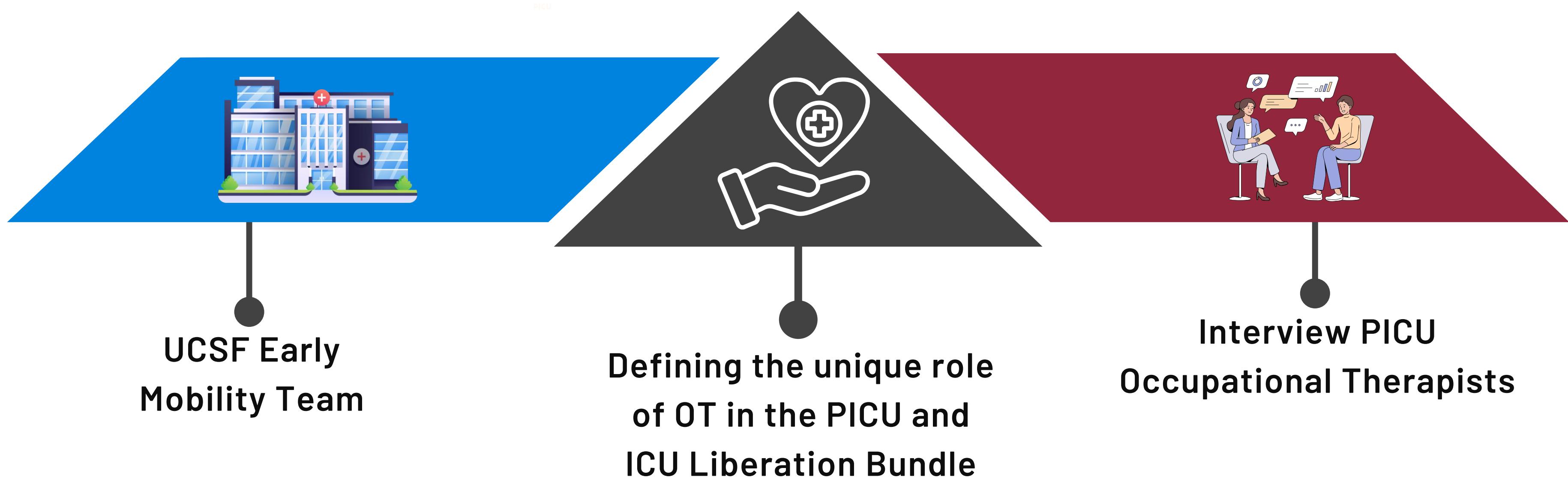
(Smith et al., 2022)



UNIVERSITY OF THE  
**PACIFIC**

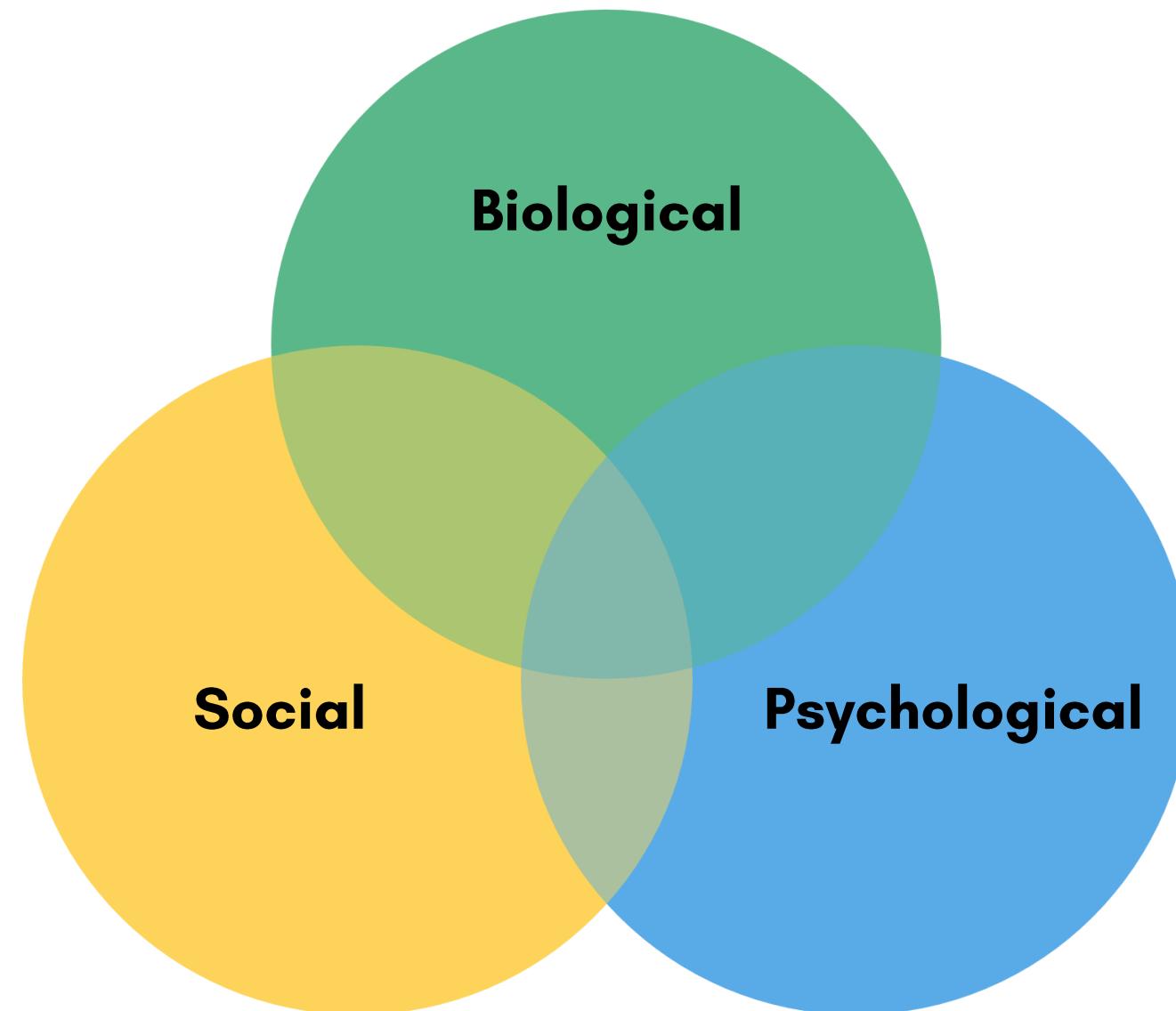
School of  
Health Sciences

# Project Purpose



# Guiding Theories

## Biopsychosocial Model



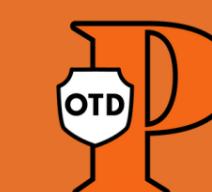
(McLaren, 1998)

## CIHC National Interprofessional Competency Framework

### National Interprofessional Competency Framework



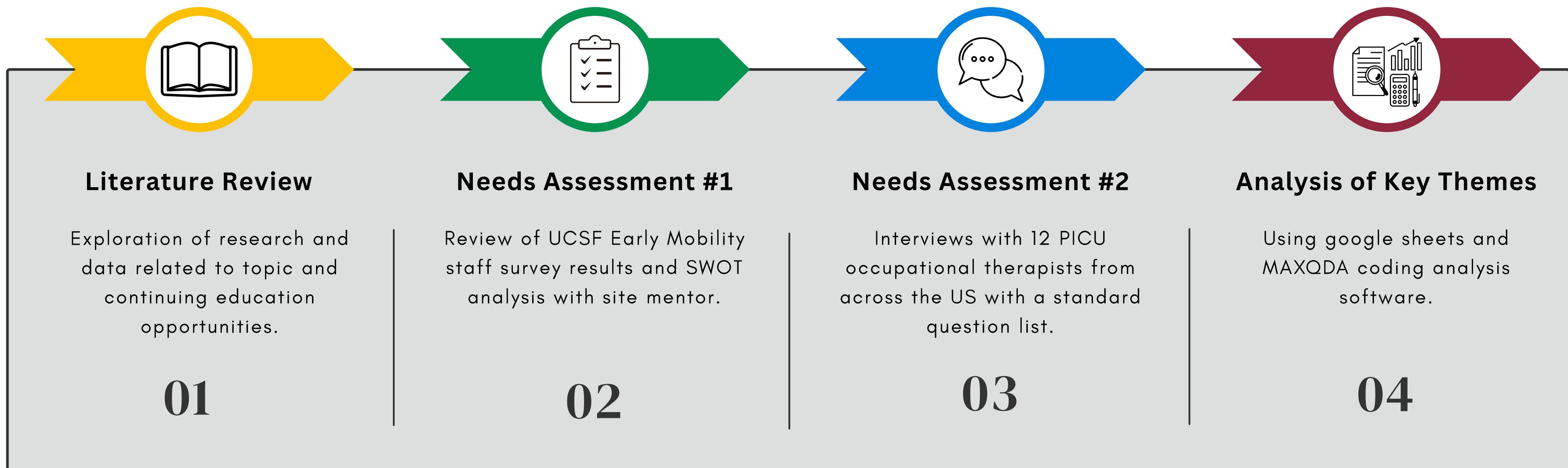
(Canadian Interprofessional Health Collaborative, 2010, p. 11)



UNIVERSITY OF THE  
PACIFIC

School of  
Health Sciences

# Literature Review and Needs Assessment



(Betters et al., 2017; Choong et al., 2017; Fayed et al., 2020; Ghafoor et al., 2021; Herbsman et al., 2020; Jarvis et al., 2019; Manning et al., 2018; Marra et al., 2017; Morrow, 2021; Patel et al., 2020; Royer & Busari, 2021; Woodruff & Choong, 2021)



UNIVERSITY OF THE  
**PACIFIC**

School of  
Health Sciences

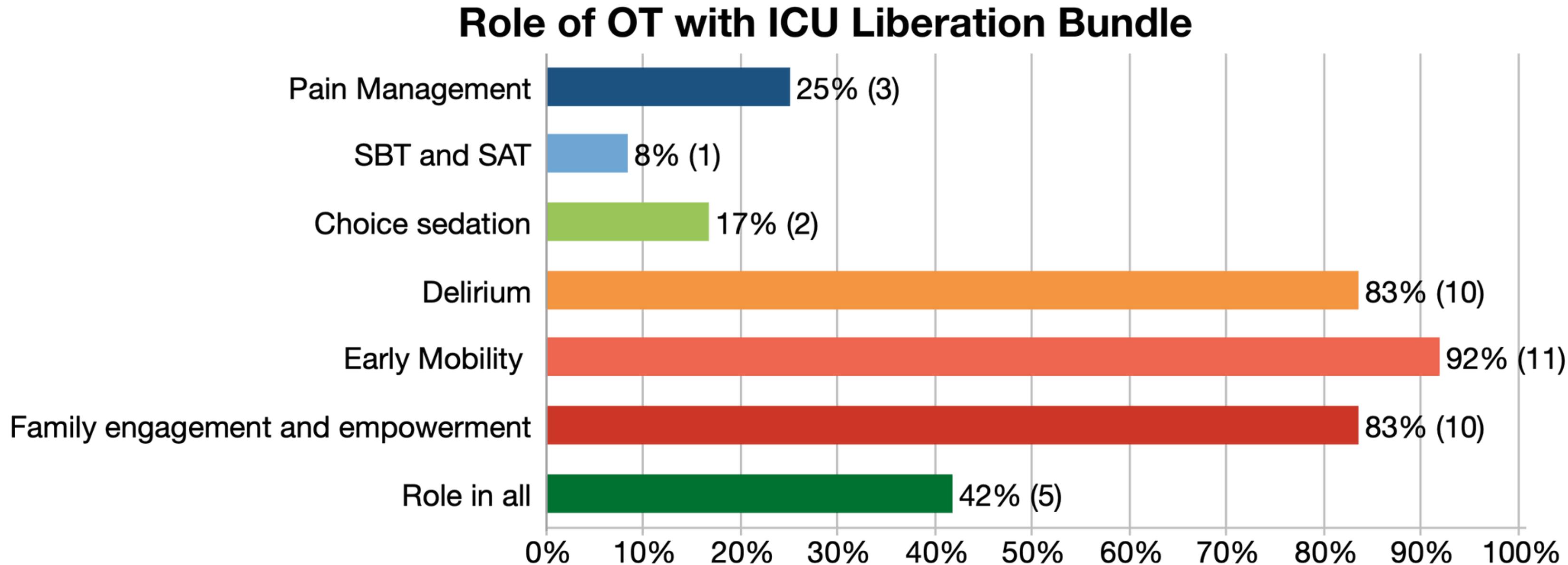
# Literature Review and Needs Assessment



(Betters et al., 2017; Choong et al., 2017; Fayed et al., 2020; Ghafoor et al., 2021;  
Herbsman et al., 2020; Jarvis et al., 2019; Manning et al., 2018; Marra et al., 2017;  
Morrow, 2021; Patel et al., 2020; Royer & Busari, 2021; Woodruff & Choong, 2021)

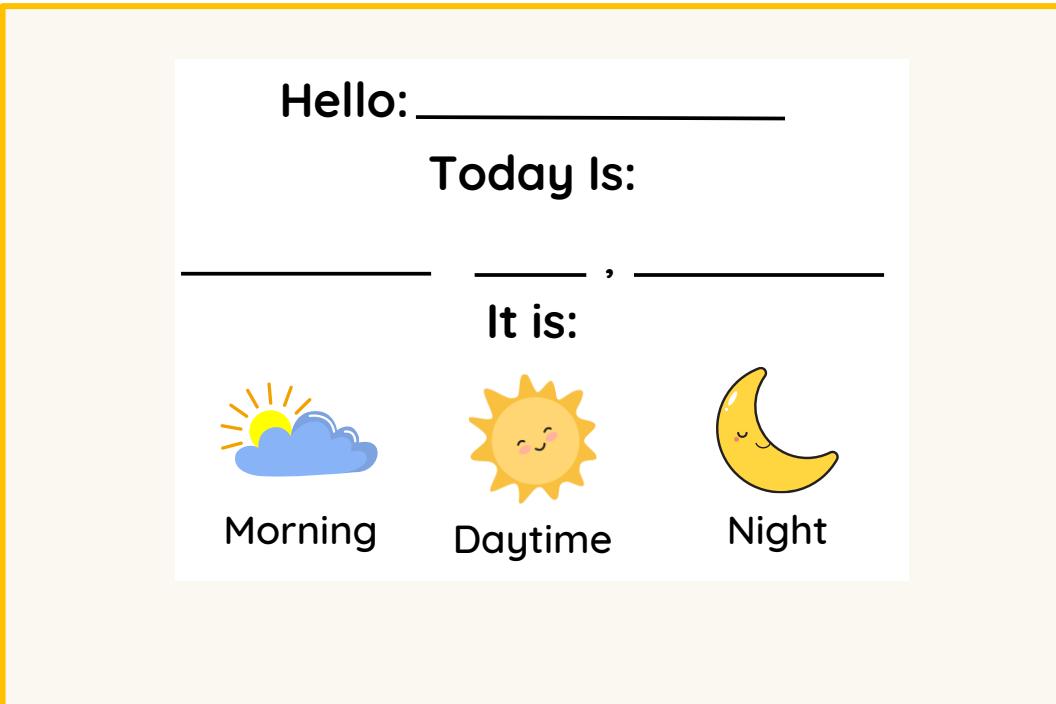


# Outcomes



# Outcomes

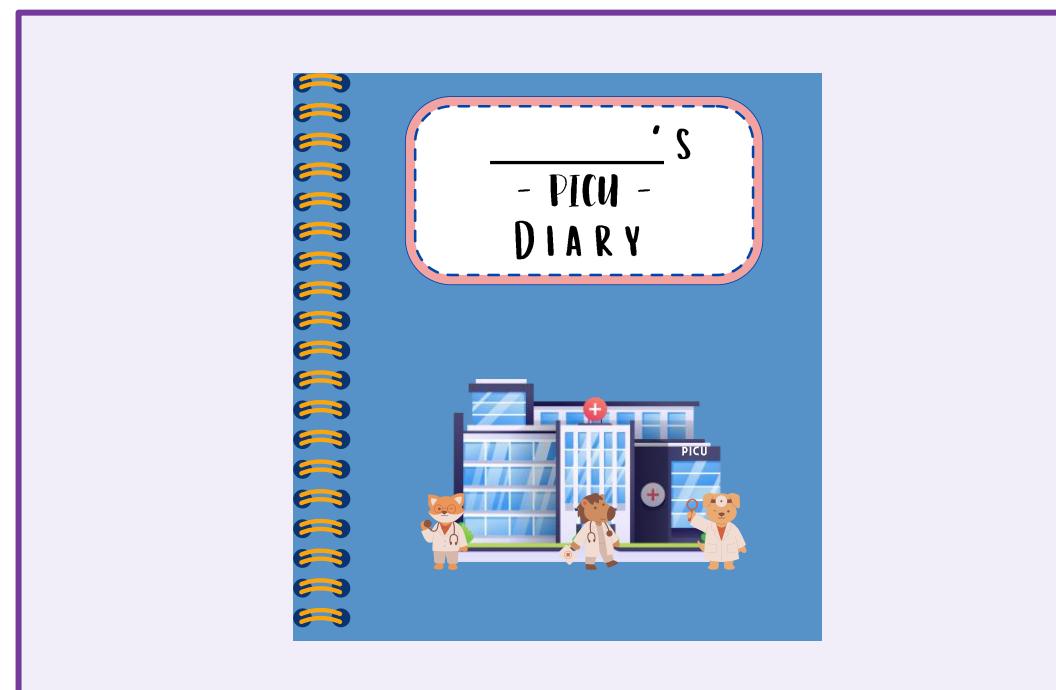
## Delirium Resources



## Environmental Modification



## PICU Diaries



## Early Mobility Program Support



UNIVERSITY OF THE  
**PACIFIC**

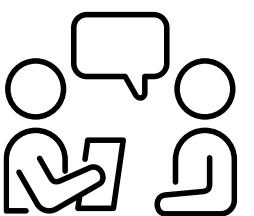
School of  
Health Sciences

# Discussion

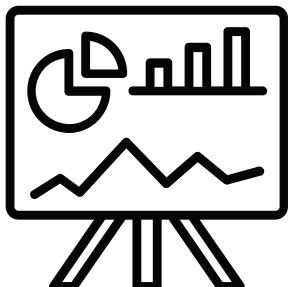
## Next Steps



**Increased patients in early mobility program and trial of created resources**



**Continued interviews, data collection, and analysis**



**Dissemination to OTs at conference**



UNIVERSITY OF THE  
**PACIFIC**

School of  
Health Sciences

# Discussion

---



UNIVERSITY OF THE  
**PACIFIC**

School of  
Health Sciences

# Impact

## UCSF

- Improved services supporting ICU Liberation Bundle
- Potential biological, psychological, and social benefits to children and families

## My Future

- Continued interest in supporting this population
- Increased knowledge to provide better OT services within the setting

## OT Profession

- Increased discussion and data related to role in PICU
- Dissemination to help improve current and future practice in the PICU



UNIVERSITY OF THE  
**PACIFIC**

School of  
Health Sciences

# References

- Betters, K. A., Hebbar, K. B., Farthing, D., Griego, B., Easley, T., Turman, H., Perrino, L., Sparacino, S., & DeAlmeida, M. L. (2017). Development and implementation of an early mobility program for mechanically ventilated pediatric patients. *Journal of Critical Care*, 41, 303-308.  
<https://doi.org/10.1016/j.jcrc.2017.08.004>
- Canadian Interprofessional Health Collaborative. (2010). A national interprofessional competency framework. <https://phabc.org/wp-content/uploads/2015/07/CIHC-National-Interprofessional-Competency-Framework.pdf>
- Cameron, S., Ball, I., Cepinskas, G., Choong, K., Doherty, T. J., Ellis, C. G., Martin, C. M., Mele, T. S., Sharpe, M., Shoemaker, J. K., & Fraser, D. D. (2015). Early mobilization in the critical care unit: A review of adult and pediatric literature. *Journal of Critical Care*, 30(4), 664-672. <https://doi.org/10.1016/j.jcrc.2015.03.032>
- Choong, K., Canci, F., Clark, H., Hopkins, R., Kudchadkar, S., Lati, J., Morrow, B., Neu, C., Wieczorek, B., & Zebuhr, C. (2017). Practice recommendations for early mobilization in critically ill children. *Journal of Pediatric Intensive Care*, 07(01), 014-026. <https://doi.org/10.1055/s-0037-1601424>
- Ebrahim, S., Singh, S., Hutchison, J. S., Kulkarni, A. V., Sananes, R., Bowman, K. W., & Parshuram, C. S. (2013). Adaptive behavior, functional outcomes, and quality of life outcomes of children requiring urgent ICU admission. *Pediatric Critical Care Medicine*, 14(1), 10-18. <https://doi.org/10.1097/pcc.0b013e31825b64b3>
- Engel, H. J., Tatebe, S., Alonso, P. B., Mustille, R. L., & Rivera, M. J. (2013). A physical therapist established intensive care unit early mobilization program at University of California San Francisco Medical Center results in quality improvement in patient outcomes. *American Physical Therapy Association*, 93(7), 975-985. [https://doi.org/10.1164/ajrccm-conference.2012.185.1\\_meetingabstracts.a6563](https://doi.org/10.1164/ajrccm-conference.2012.185.1_meetingabstracts.a6563)
- Fayed, N., Cameron, S., Fraser, D., Cameron, J. I., Al-Harbi, S., Simpson, R., Wakim, M., Chiu, L., & Choong, K. (2020). Priority outcomes in critically ill children: A patient and parent perspective. *American Journal of Critical Care*, 29(5), e94-e103. <https://doi.org/10.4037/ajcc2020188>
- Ghafoor, S., Fan, K., Williams, S., Brown, A., Bowman, S., Pettit, K. L., Gorantla, S., Quillivan, R., Schwartzberg, S., Curry, A., Parkhurst, L., James, M., Smith, J., Canavera, K., Elliott, A., Frett, M., Trone, D., Butrum-Sullivan, J., Barger, C., ... Kudchadkar, S. R. (2021). Beginning restorative activities very early: Implementation of an early mobility initiative in a pediatric onco-critical care unit. *Frontiers in Oncology*, 11. <https://doi.org/10.3389/fonc.2021.645716>
- Graham, R. J., Pemstein, D. M., & Curley, M. A. (2009). Experiencing the pediatric intensive care unit: Perspective from parents of children with severe antecedent disabilities. *Critical Care Medicine*, 37(6), 2064-2070. <https://doi.org/10.1097/ccm.0b013e3181a00578>
- Gupta, N., Talathi, S., Woolley, A., Wilson, S., Franklin, M., Robbins, J., Colston, C., & Hayes, L. (2021). Performance of Cornell assessment of pediatric delirium scale in mechanically ventilated children. *Journal of Pediatric Intensive Care*, 12(01), 024-030. <https://doi.org/10.1055/s-0041-1728784>
- Herbsman, J. M., D'Agati, M., Klein, D., O'Donnell, S., Corcoran, J. R., Folks, T. D., & Al-Qaqa, Y. M. (2020). Early mobilization in the pediatric intensive care unit: A quality improvement initiative. *Pediatric Quality & Safety*, 5(1), e256. <https://doi.org/10.1097/pq9.0000000000000256>
- Herrup, E. A., Wieczorek, B., & Kudchadkar, S. R. (2017). Characteristics of postintensive care syndrome in survivors of pediatric critical illness: A systematic review. *World Journal of Critical Care Medicine*, 6(2), 124. <https://doi.org/10.5492/wjccm.v6.i2.124>
- Jarvis, J. M., Choong, K., & Khetani, M. A. (2019). Associations of participation-focused strategies and rehabilitation service use with caregiver stress after pediatric critical illness. *Archives of Physical Medicine and Rehabilitation*, 100(4), 703-710. <https://doi.org/10.1016/j.apmr.2018.11.017>



Jarvis, J. M., Gurga, A. R., Lim, H., Cameron, J., Gorter, J. W., Choong, K., & Khetani, M. A. (2019). Caregiver strategy use to promote children's home participation after pediatric critical illness. *Archives of Physical Medicine and Rehabilitation*, 100(11), 2144-2150.

<https://doi.org/10.1016/j.apmr.2019.05.034>

Lapum, J., St-Amant, O., Hughes, M., & Garmaise-Yee, J. (2020). *Introduction to Communication in Nursing* (1st ed.). Toronto Metropolitan University Pressbooks.

Laxton, L., & Morrow, M. (2018). *Occupational therapy's role in delirium assessment, prevention, & management within the intensive care unit* [CE course]. Continued. <https://www.occupationaltherapy.com/ot-ceus/course/occupational-therapy-s-role-in-4013>

Lehner, D. C., & Sadler, L. S. (2015). Toddler developmental delays after extensive hospitalization: Primary care practitioner guidelines. *Pediatric Nursing*, 41(5), 236-242.

Manning, J. C., Pinto, N. P., Rennick, J. E., Colville, G., & Curley, M. A. (2018). Conceptualizing post intensive care syndrome in children—The PICS-P framework. *Pediatric Critical Care Medicine*, 19(4), 298-300. <https://doi.org/10.1097/pcc.0000000000001476>

Marra, A., Ely, E. W., Pandharipande, P. P., & Patel, M. B. (2017). The ABCDEF bundle in critical care. *Critical Care Clinics*, 33(2), 225-243. <https://doi.org/10.1016/j.ccc.2016.12.005>

Morrow, B. M. (2021). Building a culture of early mobilization in the pediatric intensive care unit—a nuts and bolts approach. *Translational Pediatrics*, 10(10), 2845-2857. <https://doi.org/10.21037/tp-20-324>

Ong, C., Lee, J. H., Leow, M. K., & Puthucheary, Z. A. (2016). Functional outcomes and physical impairments in pediatric critical care survivors. *Pediatric Critical Care Medicine*, 17(5), e247-e259. <https://doi.org/10.1097/pcc.0000000000000706>

Patel, R. V., Redivo, J., Nelliot, A., Eakin, M. N., Wieczorek, B., Quinn, J., Gurses, A. P., Balas, M. C., Needham, D. M., & Kudchadkar, S. R. (2021). Early mobilization in a pediatric intensive care unit: A qualitative sustainability analysis of PICU up! *Pediatric Critical Care Medicine*, 22(4), e233-e242. <https://doi.org/10.1097/pcc.0000000000002619>

Rodriguez-Rubio, M., Pinto, N. P., Manning, J. C., & Kudchadkar, S. R. (2020). Post-intensive care syndrome in paediatrics: Setting our sights on survivorship. *The Lancet Child & Adolescent Health*, 4(7), 486-488. [https://doi.org/10.1016/s2352-4642\(20\)30170-x](https://doi.org/10.1016/s2352-4642(20)30170-x)

Royer, A. S., & Busari, J. O. (2021). A systematic review of the impact of intensive care admissions on post discharge cognition in children. *European Journal of Pediatrics*, 180(12), 3443-3454. <https://doi.org/10.1007/s00431-021-04145-5>

Silver, G., Doyle, H., Hegel, E., Kaur, S., Mauer, E. A., Gerber, L. M., & Traube, C. (2020). Association between pediatric delirium and quality of life after discharge. *Critical Care Medicine*, 48(12), 1829-1834. <https://doi.org/10.1097/ccm.0000000000004661>

Smith, H. A., Besunder, J. B., Betters, K. A., Johnson, P. N., Srinivasan, V., Stormorken, A., Farrington, E., Golianu, B., Godshall, A. J., Acinelli, L., Almgren, C., Bailey, C. H., Boyd, J. M., Cisco, M. J., Damian, M., DeAlmeida, M. L., Fehr, J., Fenton, K. E., Gilliland, F., ...

Berkenbosch, J. W. (2022). 2022 society of critical care medicine clinical practice guidelines on prevention and management of pain, agitation, neuromuscular blockade, and delirium in critically ill pediatric patients with consideration of the ICU environment and early mobility. *Pediatric Critical Care Medicine*, 23(2), e74-e110. <https://doi.org/10.1097/pcc.0000000000002873>

Stimler, L. (2017). *The role of OT in the pediatric intensive care unit* [CE course]. Continued. <https://www.occupationaltherapy.com/ot-ceus/course/role-ot-in-pediatric-intensive-3295>

Traube, C., Silver, G., Kearney, J., Patel, A., Atkinson, T. M., Yoon, M. J., Halpert, S., Augenstein, J., Sickles, L. E., Li, C., & Greenwald, B. (2014). Cornell assessment of pediatric delirium:A rapid, observational tool for screening delirium in the PICU. *Critical Care Medicine*, 42(3), 656-663. <https://doi.org/10.1097/ccm.0b013e3182a66b76>

Watson, R. S., Choong, K., Colville, G., Crow, S., Dervan, L. A., Hopkins, R. O., Knoester, H., Pollack, M. M., Rennick, J., & Curley, M. A. (2018). Life after critical illness in children—Toward an understanding of pediatric post-intensive care syndrome. *The Journal of Pediatrics*, 198, 16-24. <https://doi.org/10.1016/j.jpeds.2017.12.084>

Wieczorek, B., Ascenzi, J., Kim, Y., Lenker, H., Potter, C., Shata, N. J., Mitchell, L., Haut, C., Berkowitz, I., Pidcock, F., Hoch, J., Malamed, C., Kravitz, T., & Kudchadkar, S. R. (2016). PICU up!: Impact of quality improvement intervention to promote early mobilization in critically ill children. *Pediatric Critical Care Medicine*, 17(12), e559-e566. <https://doi.org/10.1097/pcc.0000000000000983>

Woodruff, A. G., & Choong, K. (2021). Long-term outcomes and the post-intensive care syndrome in critically ill children: A North American perspective. *Children*, 8(4), 254. <https://doi.org/10.3390/children8040254>



UNIVERSITY OF THE  
PACIFIC

| School of  
Health Sciences

**THANK YOU**  
*So Much!*

UCSF Early Mobility Team

Dr. Caroline Norell

Dr. Perkins

Dr. Wise

OTD Staff

Capstone Group

AOTA CommunOT Pediatric Hospital Group



UNIVERSITY OF THE  
**PACIFIC**

School of  
Health Sciences